

E-LETTER ON SYSTEMS, CONTROL, & SIGNAL PROCESSING ISSUE 377, JANUARY 2020

Editor: [Ahmad F. Taha](#)
Department of Electrical & Computer Engineering
The University of Texas at San Antonio
1 UTSA Circle, San Antonio, TX 78249
ahmad.taha@utsa.edu
<http://engineering.utsa.edu/ataha>



Welcome to Issue 377 of the CSS E-letter available [here](#).

- To submit new articles, visit [article submissions](#) on the E-Letter website.
- To **subscribe**, send an empty email to eleter-css-join@lists.it.utsa.edu and you will be automatically subscribed to the CSS E-Letter.
- To **unsubscribe**, please send a blank email to eleter-css-leave@lists.it.utsa.edu and you will be automatically unsubscribed.

The next E-Letter will be mailed out at the beginning of February 2020.

Contents

1. IEEE CSS Headlines

- 1.1 Become a CSS Member
- 1.2 Follow the CSS Social Media Accounts
- 1.3 CSS Technically Cosponsored Events
- 1.4 CSS Publications Content Digest
- 1.5 IEEE Transactions on Automatic Control
- 1.6 IEEE Transactions on Control Systems Technology
- 1.7 Submission to IEEE Control Systems Letters with CDC Option

2. Miscellaneous

- 2.1 Graduate School on Control: Networked Control of Multi-Agent Systems

3. Books

- 3.1 Privacy in Dynamical Systems
- 3.2 Estimation and Inference in Discrete Event Systems

4. Journals

- 4.1 Evolution Equations and Control Theory
- 4.2 Systems & Control Letters
- 4.3 IEEE/CAA Journal of Automatica Sinica
- 4.4 International Journal of Applied Mathematics and Computer Science
- 4.5 Automatica
- 4.6 Control Engineering Practice
- 4.7 Mechatronics

- 4.8 Journal of Process Control
- 4.9 Engineering Applications of Artificial Intelligence
- 4.10 Annual Reviews in Control
- 4.11 Nonlinear Analysis: Hybrid Systems
- 4.12 European Journal of Control
- 4.13 ISA Transactions
- 4.14 Journal of the Franklin Institute
- 4.15 IFAC Journal of Systems and Control
- 4.16 IMA Journal of Mathematical Control and Information
- 4.17 International Journal of Control, Automation, and Systems
- 4.18 CFP: IEEE/ASME Transactions on Mechatronics

5. Conferences & Workshops

- 5.1 Submission to IEEE Control Systems Letters with CDC Option
- 5.2 Conference on Methods and Models in Automation and Robotics, Poland
- 5.3 Conference on Unmanned Aircraft Systems, Greece
- 5.4 Mathematical Problems in Engineering and Aerospace, Czech Republic
- 5.5 Polish Control Conference PCC2020, Poland
- 5.6 Conference on Control, Automation and Systems, South Korea
- 5.7 Workshop on Nonlinear System Identification Benchmarks, The Netherlands
- 5.8 Workshop: Introduction to Quantum Systems and Feedback Control, USA

6. Positions

- 6.1 PhD: City University of Hong Kong, Hong Kong
- 6.2 PhD: University of Nebraska-Lincoln, USA
- 6.3 PhD: University of Leicester, UK
- 6.4 PhD: George Washington University, USA
- 6.5 PhD: KU Leuven, Belgium
- 6.6 PhD: Tel Aviv University, Israel
- 6.7 PhD: Technical University of Munich, Germany
- 6.8 PhD: Østfold University College, Norway
- 6.9 PhD: Luleå University of Technology, Sweden
- 6.10 PhD: The University of Texas at San Antonio, USA
- 6.11 PhD/Postdoc: Leibniz University Hannover, Germany
- 6.12 PhD/Postdoc: Tsinghua University, China
- 6.13 Postdoc: Glasgow Caledonian University, UK
- 6.14 Postdoc: Beihang University, China
- 6.15 Postdoc: Heriot-Watt University, UK
- 6.16 Postdoc: University of Padova, Italy
- 6.17 Postdoc: Zhejiang University, China
- 6.18 Postdoc: University of New Mexico, USA
- 6.19 Postdoc: Université Paris-Saclay, France
- 6.20 Postdoc: University of Utah, USA
- 6.21 Postdoc: Rutgers University, USA
- 6.22 Postdoc: University of California, Berkeley
- 6.23 Postdoc: North Carolina A&T State University, USA
- 6.24 Postdoc: Luleå University of Technology, Sweden

6.25 Postdoc: KTH, Sweden

6.26 Faculty: Virginia Tech, USA

6.27 Faculty: University of Sheffield, UK

6.28 Faculty: Texas A&M University, USA

6.29 Faculty: Norwegian University of Science and Technology, Norway

6.30 Faculty: Johns Hopkins University, USA

1 IEEE CSS Headlines

1.1. Become a CSS Member

Contributed by: Ahmad Taha, ahmad.taha@utsa.edu

Become a CSS Member by visiting the following link <https://bit.ly/2ZBWCCs>.

[Back to the contents](#)

1.2. Follow the CSS Social Media Accounts

Contributed by: Ahmad Taha and Ankush Chakrabarty ahmad.taha@utsa.edu, chakrabarty@merl.com

Follow us on Twitter <https://twitter.com/CSSIEEE>

Like us on Facebook <https://facebook.com/CSSIEEE>

[Back to the contents](#)

1.3. CSS Technically Cosponsored Events

Contributed by: Luca Zaccarian, CSS AE Conferences, zaccarian@laas.fr

The following items have been recently included in the list of events technically cosponsored by the IEEE Control Systems Society:

- 24th International Conference on System Theory, Control and Computing (ICSTCC 2020). Sinaia, Romania. October 8-10, 2020. <http://ace.ucv.ro/icstcc2020/>

- 25th International Conference on Methods and Models in Automation and Robotics (MMAR 2020). Miedzyzdroje, Poland. August 24-27, 2020. <http://www.mmar.edu.pl>

- 39th Chinese Control Conference (CCC2020). Shenyang, China. July 27-29, 2020. <http://www.ccc2019.cn/en/index.html>

- 28th Mediterranean Conference on Control and Automation (MED 2020). St Raphaël, France. June 16-19, 2020. <http://med2020.cran.univ-lorraine.fr/>

For a full listing of CSS technically cosponsored conferences, please visit <http://ieeecss.org/conferences/technically-co-sponsored> and for a list of the upcoming and past CSS main conferences please visit <http://ieeecss.org/conferences/financially-sponsored>

[Back to the contents](#)

1.4. CSS Publications Content Digest

Contributed by: Kaiwen Chen, kaiwen.chen16@imperial.ac.uk

The IEEE Control Systems Society Publications Content Digest is a novel and convenient guide that helps readers keep track of the latest published articles.

The CSS Publications Content Digest, available at

<http://ieeecss.org/publications-content-digest>

provides lists of current tables of contents of the periodicals sponsored by the Control Systems Society.

Each issue offers readers a rapid means to survey and access the latest peer-reviewed papers of the IEEE Control Systems Society. We also include links to the Society's sponsored Conferences to give readers a preview of upcoming meetings.

[Back to the contents](#)

1.5. IEEE Transactions on Automatic Control

Contributed by: Alessandro Astolfi, ieeetac@imperial.ac.uk

Volume 64 (2019), Issue 12 (December)

Scanning the Issue, p. 4841

Papers:

- Relaxing Integrity Requirements for Attack-Resilient Cyber-Physical Systems Ilija Jovanov, Miroslav Pajic, p. 4843
- Observers for linear systems by the time-integrals and moving average of the output Laura Menini, Corrado Possieri, Antonio Tornambe, p. 4859
- SuperMann: A Superlinearly Convergent Algorithm for Finding Fixed Points of Nonexpansive Operators Andreas Themelis, Panagiotis Patrinos, p. 4875
- Analysis and Control of a Continuous-Time Bi-Virus Model Ji Liu, Philip E. Pare, Angelia Nedich, Choon Yik Tang, Carolyn L. Beck, Tamer Basar, p. 4891
- Stealthy Adversaries against Uncertain Cyber-Physical Systems: Threat of Robust Zero-Dynamics Attack Gyunghoon Park, Chanhwa Lee, Hyungbo Shim, Yongsoon Eun, Karl H. Johansson, p. 4907
- Structural Controllability of a Networked Dynamic System with LFT Perturbed Subsystems Yuan Zhang, Tong Zhou, p. 4920
- On Fundamental Limitations of Dynamic Feedback Control in Regular Large-Scale Networks Emma Tegling, Partha Mitra, Henrik Sandberg, Bassam Bamieh, p. 4936
- Event-triggered quantized control for input-to-state stabilization of linear systems with distributed output sensors Mahmoud Abdelrahim, Victor Sebastiaan Dolk, W.P.M.H. Heemels, p. 4952
- Lattice Filter Based Multivariate Autoregressive Spectral Estimation with Joint Model Order and Estimation Bandwidth Adaptation Maciej Niedzwiecki, Michal Stanislaw Meller, Damian Chojnacki, p. 4968
- Robust Fault Detection and Set-theoretic UIO for Discrete-time LPV Systems with State and Output Equations Scheduled by Inexact Scheduling Variables Feng Xu, Junbo Tan, Ye Wang, Xueqian Wang, Bin Liang, Bo Yuan, p. 4982
- A Smooth Distributed Feedback for Formation Control of Unicycles Ashton Roza, Manfredi Maggiore, Luca Scardovi, p. 4998
- Generalized Dual Dynamic Programming for Infinite Horizon Problems in Continuous State and Action Spaces Joseph Warrington, Paul Nathaniel Beuchat, John Lygeros, p. 5012
- Resilient Reinforcement in Secure State Estimation against Sensor Attacks with a priori Information Takumi Shinohara, Toru Namerikawa, Zhihua Qu, p. 5024

- LMI Stability-Constrained Parameter Identification for Composite Adaptive Internal Model Control Zeng Qiu, Jing Sun, Mrdjan Jankovic, Mario Santillo, p. 5039
- Supervisory Control of Probabilistic Discrete Event Systems under Partial Observation Weilin Deng, Jingkai Yang, Daowen Qiu, p. 5051

Technical Notes and Correspondence:

- Delay-Dependent Energy-to-Peak Stability of 2-D Time-Delay Roesser Systems with Multiplicative Stochastic Noises Hien Le, Hieu Trinh, Lan-Huong Nguyen, p. 5066
- Input estimation over frequency region in presence of disturbances Jovan Stefanovski, Dani Juricic, p. 5074
- On sufficient conditions for mixed monotonicity Liren Yang, Oscar Mickelin, Necmiye Ozay, p. 5080
- Second-Order Fault Tolerant Extended Kalman Filter for Discrete Time Nonlinear Systems Xin Wang, Edwin Yaz, p. 5086
- Linear-Exponential-Quadratic Control for Mean Field Stochastic Systems Jun Moon, Yoonsoo Kim, p. 5094
- Structural Controllability of a Consensus Network with Multiple Leaders Milad Kazemi Mehrabadi, Mohsen Zamani, Zhiyong Chen, p. 5101
- Common Knowledge and Sequential Team Problems Ashutosh Nayyar, Demosthenis Teneketzis, p. 5108
- Opacity of nondeterministic transition systems: A (bi)simulation relation approach Kuize Zhang, Xiang Yin, Majid Zamani, p. 5116
- Robust H-infinity Filtering for Two-Dimensional Uncertain Linear Discrete Time-Varying Systems: A Krein Space-Based Method Dong Zhao, Steven X. Ding, Hamidreza Karimi, Yueyang Li, p. 5124
- Dynamic state feedback stabilization of stochastic cascade nonlinear time-delay systems with SISS inverse dynamics Xue-Jun Xie, Mengmeng Jiang, p. 5132
- Consensus of Heterogenous Nonlinear Multi-Agent Systems with Duplex Control Laws Shaofu Yang, Jun Wang, Qingshan Liu, p. 5140
- Distributed continuous-time and discrete-time optimization with nonuniform unbounded convex constraint sets and nonuniform stepsizes Peng Lin, Wei Ren, Chunhua Yang, Weihua Gui, p. 5148
- Regular Polygon Formations with Fixed Size and Cyclic Sensing Constraint Kaveh Fathian, Nicholas Gans, Wieslaw Krawcewicz, Dmitrii Rachinskii, p. 5156
- Concurrent Learning Adaptive Control with Directional Forgetting Hae-In Lee, Hyo-Sang Shin, Antonios Tsourdos, p. 5164
- On Lyapunov and upper Bohl exponents of diagonal discrete linear time-varying systems Adam Czornik, Alexander Konyukh, Iryna Konyukh, Michal Niezabitowski, p. 5171
- Low-Complexity Tracking Control of Strict-Feedback Systems with Unknown Control Directions Jin-Xi Zhang, Guang-Hong Yang, p. 5175
- LQ Synchronization of Discrete-Time Multi-Agent Systems: A Distributed Optimization Approach Qishao Wang, Zhisheng Duan, Jingyao Wang, Guanrong Chen, p. 5183
- Moving Horizon Estimation for Networked Time-Delay Systems under Round-Robin Protocol Lei Zou, Zidong Wang, Qing-Long Han, Donghua Zhou, p. 5191
- Unified Approach to Convex Robust Distributed Control given Arbitrary Information Structures Luca Furieri, Maryam Kamgarpour, p. 5199
- Some improved Razumikhin stability criteria for impulsive stochastic delay differential systems Wei Hu, Quanxin Zhu, Hamidreza Karimi, p. 5207

- On input-to-state stability of discrete-time switched nonlinear time-varying systems Guopei Chen, Ying Yang, Junmin Li, p. 5214
- Consensus-based Data-Privacy Preserving Data Aggregation Jianping He, Lin Cai, Peng Cheng, Jianping Pan, Ling Shi, p. 5222
- Initial Excitation based Iterative Algorithm for Approximate Optimal Control of Completely Unknown LTI Systems Sumit Kumar Jha, Sayan Basu Roy, Shubhendu Bhasin, p. 5230
- Network Scheduling and Control Co-design for Multi-loop MPC Kun Liu, Aoyun Ma, Yuanqing Xia, Zhongqi Sun, Karl H. Johansson, p. 5238
- Fault Diagnosis of Discrete Event Systems under Unknown Initial Conditions Alejandro White, Ali Karimodini, Rong Su, p. 5246
- Some remarks on “State Estimation and Fault Diagnosis of Time Labeled Petri Net Systems with Unobservable Transitions” Zhou He, Zhiwu Li, Alessandro Giua, Francesco Basile, Carla Seatzu, p. 5253
- Non-Gaussian Filter for Continuous-Discrete Models Masaya Murata, Kaoru Hiramatsu, p. 5260
- Multi-Rate Sampled-Data Observer Design Based on a Continuous-Time Design Chen Ling, Costas Kravaris, p. 5265

[Back to the contents](#)

1.6. IEEE Transactions on Control Systems Technology

Contributed by: Michelle Colasanti, ieeetctst@osu.edu

Volume 28 (2020), Issue 1 (January)

Special Issue on System Identification and Control in Biomedical Applications

Editorial:

- Foreword Identification and Control in Biomedical Applications, G. Mercère, A. Medvedev, D. E. Rivera, C. Scoglio, and B. Jayawardhana, page 1

Special Issue Papers:

- Online Glucose Prediction Using Computationally Efficient Sparse Kernel Filtering Algorithms in Type-1 Diabetes, X. Yu, M. Rashid, J. Feng, N. Hobbs, I. Hajizadeh, S. Samadi, M. Sevil, C. Lazaro, Z. Maloney, E. Littlejohn, L. Quinn, and A. Cinar, page 3
- Semiglobal Sampled-Data Dynamic Output Feedback Controller for the Glucose–Insulin System, M. Di Ferdinando, P. Pepe, P. Palumbo, S. Panunzi, and A. De Gaetano, page 16
- Data-Driven Anomaly Recognition for Unsupervised Model-Free Fault Detection in Artificial Pancreas, L. Meneghetti, M. Terzi, S. Del Favero, G. A. Susto, and C. Cobelli, page 33
- Data-Driven Disturbance Estimation and Control With Application to Blood Glucose Regulation, C. Novara, I. Rabbone, and D. Tinti, page 48
- System Identification Approaches for Energy Intake Estimation: Enhancing Interventions for Managing Gestational Weight Gain, P. Guo, D. E. Rivera, J. S. Savage, E. E. Hohman, A. M. Pauley, K. S. Leonard, and D. Symons Downs, page 63
- Analysis, Estimation, and Validation of Discrete-Time Epidemic Processes, P. E. Paré, J. Liu, C. L. Beck, B. E. Kirwan, and T. Basar, page 79

- Passivity-Based Inverse Optimal Impulsive Control for Influenza Treatment in the Host, G. Hernandez-Mejia, A. Y. Alanis, M. Hernandez-Gonzalez, R. Findeisen, and E. A. Hernandez-Vargas, page 94
- Optimal Impulsive Control With Application to Antiangiogenic Tumor Therapy, F. Cacace, V. Cusimano, and P. Palumbo, page 106
- Nonparametric Time-Domain Tremor Quantification With Smart Phone for Therapy Individualization, F. Olsson and A. Medvedev, page 118
- Fractional-Order Modeling and Identification for a Phantom EEG System, G. Besançon, G. Becq, and A. Voda, page 130
- Intraoperative Brain Shift Estimation Using Atlas of Brain Deformations and Constrained Kalman Filter, M. Shakarami, A. A. Suratgar, and H. A. Talebi, page 139
- Online Tissue Conductivity Estimation in Deep Brain Stimulation, R. Cubo and A. Medvedev, page 149
- Variable-Gain Control for Respiratory Systems . B. Hunnekens, S. Kamps, and N. van de Wouw 163
- Lung Thermal Transfer System Identification With Fractional Models, S. Victor, P. Melchior, M. Pellet, and A. Oustaloup, page 172
- Experimental Modeling and Identification of Cardiac Biomarkers Release in Acute Myocardial Infarction, A. Procopio, S. De Rosa, M. R. García, C. Covello, A. Merola, J. Sabatino, A. De Luca, C. Indolfi, F. Amato, and C. Cosentino, page 183
- Robust Calibration of High Dimension Nonlinear Dynamical Models for Omics Data: An Application in Cancer Systems Biology, F. Bianconi, C. Antonini, L. Tomassoni, and P. Valigi, page 196
- Multiobjective Identification of a Feedback Synthetic Gene Circuit, Y. Boada, A. Vignoni, and J. Picó, page 208
- Revealing Time-Varying Joint Impedance With Kernel-Based Regression and Nonparametric Decomposition, M. van de Ruit, G. Cavallo, J. Lataire, F. C. T. van der Helm, W. Mugge, J.-W. van Wingerden, and A. C. Schouten, page 224
- Model-Free Neuromuscular Electrical Stimulation by Stochastic Extremum Seeking, P. Paz, T. R. Oliveira, A. V. Pino, and A. P. Fontana, page 238
- Closed-Loop MISO Identification of Propofol Effect on Blood Pressure and Depth of Hypnosis, K. van Heusden, M. Yousefi, J. M. Ansermino, and G. A. Dumont, page 254
- System Identification of Just Walk: Using Matchable-Observable Linear Parametrizations . P. L. dos Santos, M. T. Freigoun, C. A. Martín, D. E. Rivera, E. B. Hekler, R. A. Romano, and T. P. Azevedo Perdicoulis, page 264

[Back to the contents](#)

1.7. Submission to IEEE Control Systems Letters with CDC Option

Contributed by: Francesca Bettini, bettini@dei.unipd.it

Submission to IEEE Control Systems Letters with CDC (2020) option starting January 6, 2020, is possible

As for the years 2017, 2018 and 2019, also this year the IEEE Control Systems Letters (L-CSS) offers the opportunity for authors to not only publish a paper in the journal but also to present the same paper at the flagship conference of the IEEE Control Systems Society: the IEEE Conference on Decision and Control (CDC).

The joint submission to IEEE Control Systems Letters and CDC 2019 will be possible from January 6 to March 3, 2020.

Manuscripts submitted to the L-CSS with the CDC option will undergo a regular review as papers submitted to the Letters (so they should be submitted only to the L-CSS and not to the CDC). At the end of the first round of review, the reviews and the Associate Editor's report will be forwarded to the CDC Program Committee, which will use them to decide on the inclusion of these manuscripts in the program of the Conference. After the first cycle of review, the decisions about the acceptance or rejection of the manuscript for the L-CSS and for the CDC will be independent of each other. In particular, reviews and reports collected during a possible second round of review will not be forwarded to the CDC Program Committee.

Note that you can submit your paper through the Letters also if the paper will be part of an Invited Session at CDC 2020. In that case you should select "L-CSS and CDC Invited Session", as submission type.

For more information about joint submission to L-CSS and CDC see, specifically, [this link](#) section "L-CSS and CDC."

For more information about the L-CSS, please check the website at <http://iee-cssletters.dei.unipd.it/index.html>.

[Back to the contents](#)

2 Miscellaneous

2.1. Graduate School on Control: Networked Control of Multi-Agent Systems

Contributed by: Jan Lunze, Lunze@atp.rub.de

International Graduate School on Control: Networked Control of Multi-Agent Systems

Networked Control of Multi-Agent Systems Module M03 of the International Graduate School on Control 2020 organised by the European Embedded Control Institute (EECI)

Date: February 10 – 14, 2020

Venue: Eindhoven University of Technology, The Netherlands

Lecturer: Prof. Dr. Jan Lunze, Ruhr-University Bochum, Germany

Registration: www.eeci-igsc.eu

Registration deadline: January 12, 2020

Course description: Networked control uses the flexibility of digital communication systems to connect arbitrary components on demand, which makes novel control structures possible and poses fundamental research questions: Under what conditions should information be transferred from one control loop to another one? What is the minimum requirement on the communication structure to solve a control problem at hand? Why are certain information structures more favourable than others?

Starting with fundamental notions of algebraic graph theory, the course shows how graph theory and systems theory have to be combined to find networked controllers that make linear agents to synchronise or to follow set-point commands collectively. It presents a novel methodology for the selection of an appropriate communication structure for which all agents react on leader commands as quickly as possible. Furthermore, it shows how the agents can generate an overall system with a reasonable structure based only on their local information, such that the communication structure adapts to disturbances in a self organised way.

The introduction of the main ideas is illustrated by numerous examples from diverse fields like vehicle platooning, networks of coupled oscillators or electrical power systems. The course participants should solve exercises, partly by using MATLAB, to learn more about the interesting dynamical phenomena that occur in networked systems.

Topics:

- Introduction to networked systems
- Algebraic graph theory
- Consensus in continuous-time and discrete-time systems
- Synchronisation of multi-agent systems with identical and individual dynamics
- Design of the communication structure of networked controllers
- Self-organisation in networked systems

The course uses the new textbook:

Jan Lunze: Networked Control of Multi-Agent Systems

ISBN 9789463867139

[.bookmundo.de/books/176262](https://bookmundo.de/books/176262)

The book provides more than 100 exercises, some of which will be used in the course. Furthermore, the book gives supplementary material on matrix theory, probability theory and MATLAB functions for graphs.

[Back to the contents](#)

3 Books

3.1. Privacy in Dynamical Systems

Contributed by: Farhad Farokhi, ffarokhi@unimelb.edu.au

Privacy in Dynamical Systems, Farokhi, Farhad (Ed.), Springer, 2020.

<https://www.springer.com/in/book/9789811504921>

eBook ISBN: 978-981-15-0493-8

Hardcover ISBN: 978-981-15-0492-1

This book addresses privacy in dynamical systems, with applications to smart metering, traffic estimation, and building management. In the first part, the book explores statistical methods for privacy preservation from the areas of differential privacy and information-theoretic privacy (e.g., using privacy metrics motivated by mutual information, relative entropy, and Fisher information) with provable guarantees. In the second part, it investigates the use of homomorphic encryption for the implementation of control laws over encrypted numbers to support the development of fully secure remote estimation and control. Chiefly intended for graduate students and researchers, the book provides an essential overview of the latest developments in privacy-aware design for dynamical systems.

Contents:

- Part I Statistical Data Privacy

1. Fisher Information Privacy with Application to Smart Meter Privacy Using HVAC Units (Farhad Farokhi and Henrik Sandberg)
2. Smart Meter Privacy (Ecenaz Erdemir, Deniz Gündüz and Pier Luigi Dragotti)
3. Privacy Against Adversarial Hypothesis Testing: Theory and Application to Smart Meter Privacy Problem (Zuxing Li, Yang You and Tobias J. Oechtering)
4. Statistical Parameter Privacy (Germán Bassi, Ehsan Nekouei, Mikael Skoglund and Karl H. Johansson)
5. Privacy Verification and Enforcement via Belief Manipulation (Bo Wu, Hai Lin and Ufuk Topcu)
6. Information-Theoretic Privacy Through Chaos Synchronization and Optimal Additive Noise (Carlos Murguia, Iman Shames, Farhad Farokhi and Dragan Nešić)
7. Differentially Private Analysis of Transportation Data (Mathilde Pelletier, Nicolas Saunier and Jerome Le Ny)
8. On the Role of Cooperation in Private Multi-agent Systems (Vaibhav Katewa, Fabio Pasqualetti and Vijay Gupta)

- Part II Encryption-Based Privacy

9. Secure Multi-party Computation for Cloud-Based Control (Andreea B. Alexandru and George J. Pappas)
10. Comprehensive Introduction to Fully Homomorphic Encryption for Dynamic Feedback Controller via LWE-Based Cryptosystem (Junsoo Kim, Hyungbo Shim and Kyoohyung Han)
11. Encrypted Model Predictive Control in the Cloud (Moritz Schulze Darup)
12. Encrypted Control Using Multiplicative Homomorphic Encryption (Kiminao Kogiso)

[Back to the contents](#)

3.2. Estimation and Inference in Discrete Event Systems

Contributed by: Christoforos N. Hadjicostis, chadjic@ucy.ac.cy

Estimation and Inference in Discrete Event Systems: A Model-Based Approach with Finite Automata

by Christoforos N. Hadjicostis

2020, Springer (<https://www.springer.com/gp/book/9783030308209>)

ISBN 978-3-030-30821-6

This book chooses a popular model for emerging automation systems—finite automata under partial observation—and focuses on a comprehensive study of the key problems of state estimation and event inference. The text includes treatment of current, delayed, and initial state estimation. Related applications for assessing and enforcing resiliency—fault detection and diagnosis—and security—privacy and opacity—properties are discussed, enabling the reader to apply these techniques in a variety of emerging applications, among them automated manufacturing processes, intelligent vehicle/highway systems, and autonomous vehicles.

The book provides a systematic development of recursive algorithms for state estimation and event inference. The author also deals with the verification of pertinent properties such as:

- the ability to determine the exact state of a system, “detectability”;
- the ability to ensure that certain classes of faults can be detected/identified, “diagnosability”; and
- the ability to ensure that certain internal state variables of the system remain “hidden” from the outside world regardless of the type of activity that is taking place, “opacity”.

This book allows students, researchers and practicing engineers alike to grasp basic aspects of state estimation in discrete event systems, aspects like distributivity and probabilistic inference, quickly and without having to master the entire breadth of models that are available in the literature.

Table of contents (10 chapters)

1. Introduction to Estimation and Inference in Discrete Event Systems, Pages 1-14
2. Preliminaries and Notation, Pages 15-23
3. Finite Automata Models, Pages 25-68
4. State Estimation, Pages 69-117
5. Verification of State Isolation Properties, Pages 119-153
6. Detectability, Pages 155-183
7. Diagnosability, Pages 185-223
8. Opacity, Pages 225-249
9. Decentralized State Estimation, Pages 251-303
10. Distributed State Estimation, Pages 305-342

[Back to the contents](#)

4 Journals

4.1. Evolution Equations and Control Theory

Contributed by: Irena Lasiecka, lasiecka@memphis.edu

Evolution Equations and Control Theory

Vol. 9, no. 1, 2020

<https://www.aims sciences.org/journal/A0000-0000/2020/9/1>

- A. Sengouga, Exact boundary observability and controllability of the wave equation in an interval with two moving endpoints, p. 1
- Doria Aane, Meriem Aissous and Mustapha Fateh Yarou, Almost mixed semi-continuous perturbation of Moreau's sweeping process, p. 27
- Gilbert Peralta, Uniform exponential stability of a uid-plate interaction model due to thermal effects, p. 39
- Jeremy LeCrone and Gieri Simonett, On quasilinear parabolic equations and continuous maximal regularity, p. 61
- Paola Loreti and Daniela Sforza, Reachability problems for a wave-wave system with a memory term, p. 87
- Ruxandra Stavre, Optimization of the blood pressure with the control in coefficients, p. 131
- Zhiyuan Li, Xinchu Huang and Masahiro Yamamoto, Initial-boundary value problems for multi-term time-fractional diffusion equations with x -dependent coefficients, p. 153
- Peng Gao, Global exact controllability to the trajectories of the Kuramoto-Sivashinsky equation, p. 181
- Andrea Signori, Optimality conditions for an extended tumor growth model with double obstacle potential via deep quench approach, p. 193
- Dalila Azzam-Laouir, Warda Belhoula, Charles Castaing and M. D. P. Monteiro Marques, Multi-valued perturbation to evolution problems involving time dependent maximal monotone operators, p. 219
- Sergei Avdonin, Je Park and Luz de Teresa, The Kalman condition for the boundary controllability of coupled 1-d wave equations, p. 255
- Jifeng Chu, Maurizio Garrione and Filippo Gazzola, Stability analysis in some strongly prestressed rectangular plates, p. 275

[Back to the contents](#)

4.2. Systems & Control Letters

Contributed by: Lusia Veksler and Miroslav Krstic, lveksler@ucsd.edu

Systems & Control Letters

December 2019

Volume 134

Papers:

- Weak Feller property of non-linear filters, Ali Devran Kara, Naci Saldi, Serdar Yüksel, Article 104512
- Extended state observer-based control for systems with locally Lipschitz uncertainties: LMI-based stability conditions, A. Castillo, P. García, E. Fridman, P. Albertos, Article 104526

- A novel semi-discrete scheme preserving uniformly exponential stability for an Euler–Bernoulli beam, Jiankang Liu, Bao-Zhu Guo, Article 104518
- Stabilization for infinite-dimensional linear systems with bounded control and time delayed observation, Zhan-Dong Mei, Bao-Zhu Guo, Article 104532
- Observers to the aid of “strictification” of Lyapunov functions, Laurent Praly, Article 104510
- Synchronization of linear systems via relative actuation, S. Emre Tuna, Article 104527
- Adaptive event-triggered distributed model predictive control for multi-agent systems, Jingyuan Zhan, Yanjie Hu, Xiang Li, Article 104531
- Global output-feedback stabilization with prescribed convergence rate for nonlinear systems with structural uncertainties, Fengzhong Li, Yungang Liu, Article 104521
- Event-triggered L-Infinity control for network-based switched linear systems with transmission delay, Yiwen Qi, Yanhui Liu, Jun Fu, Pengyu Zeng, Article 104533
- Optimal stochastic regulators with state-dependent weights, Bujar Gashi, Article 104522
- Interval observer design for continuous-time linear parameter-varying systems, Jitao Li, Zhenhua Wang, Wenhan Zhang, Tarek Raïssi, Yi Shen, Article 104541
- Event-triggered sliding mode control of Markovian jump systems against input saturation, Renjie Ma, Xiangyu Shao, Jianxing Liu, Ligang Wu, Article 104525
- Mean field game for linear–quadratic stochastic recursive systems, Liangquan Zhang, Xun Li, Article 104544
- Stability and passivity analysis of discrete-time linear systems with time-varying delay, Sai-Bing Qiu, Xin-Ge Liu, Feng-Xian Wang, Qiao Chen, Article 104543
- On the quantification of aleatory and epistemic uncertainty using Sliced-Normal distributions, Luis G. Crespo, Brendon K. Colbert, Sean P. Kenny, Daniel P. Giesy, Article 104560
- A stability theorem for networks containing synchronous generators, George Weiss, Florian Dörfler, Yoash Levron, Article 104561
- Common eigenvector approach to exact order reduction for Roesser state-space models of multidimensional systems, Dongdong Zhao, Shi Yan, Shinya Matsushita, Li Xu, Article 104559
- Stochastic linear quadratic differential games in a state feedback setting with sampled measurements, Vasile Drăgan, Ivan G. Ivanov, Ioan-Lucian Popam Article 104563
- Adaptive tracking control for a class of stochastic switched systems with stochastic input-to-state stable inverse dynamics and input saturation, Liqiang Yao, Weihai Zhang, Article 104555
- On mappability of control systems to linear systems with analytic matrices, K.V. Sklyar, Article 104572
- Observability on lattice points for heat equations and applications, Ming Wang, Can Zhang, Liang Zhang, Article 104564
- On a concept of genericity for RLC networks, Timothy H. Hughes, Alessandro Morelli, Malcolm C. Smith, Article 104562

[Back to the contents](#)

4.3. IEEE/CAA Journal of Automatica Sinica

Contributed by: Yan Ou, yan.ou@ia.ac.cn

IEEE/CAA Journal of Automatica Sinica

Volume 6 (2019), Issue 6 (November)

<http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=6570654>

Special Issue on Time Series Classification

- Guest Editorial for Special Issue on Time Series Classification. H. S. Darabi, G. Ifrim, P. Schafer, and D. Silva, page 1291
- The UCR Time Series Archive. H. A. Dau, A. Bagnall, K. Kamgar, C.-C. M. Yeh, Y. Zhu, S. Gharghabi, C. Ratanamahatana, and E. Keogh, page 1293
- Classification of Short Time Series in Early Parkinson's Disease With Deep Learning of Fuzzy Recurrence Plots. T. D. Pham, K. Wardell, A. Eklund, and G. Salerud, page 1306
- Self-Learning of Multivariate Time Series Using Perceptually Important Points. T. Lintonen and T. Raty, page 1318
- Clustering Structure Analysis in Time-Series Data With Density-Based Clusterability Measure. J. Jokinen, T. Raty, and T. Lintonen, page 1332
- Long-term Traffic Volume Prediction Based on K-means Gaussian Interval Type-2 Fuzzy Sets. R. M. Li, Y. F. Huang, and J. Wang, page 1344
- Efficient Deviation Detection Between a Process Model and Event Logs. L. Wang, Y. Y. Du, and L. Qi, page 1352
- Forecasting of Software Reliability Using Neighborhood Fuzzy Particle Swarm Optimization Based Novel Neural Network. P. Roy, G. S. Mahapatra, and K. N. Dey, page 1365
- Predicting the Results of RNA Molecular Specific Hybridization Using Machine Learning. W. J. Zhu, X. K. Liu, M. L. Xu, and H. M. Wu, page 1384

Papers:

- Posture Maintenance Control of 2-Link Object By Nonprehensile Two-Cooperative-Arm Robot Without Compensating Friction. C. A. Jiang and S. Ueno, page 1397
- An Optimal Hybrid Learning Approach for Attack Detection in Linear Networked Control Systems. H. F. Niu, A. Sahoo, C. Bhowmick, and S. Jagannathan, page 1404
- Finite-time Adaptive Fault-tolerant Control for Nonlinear Systems With Multiple Faults. H. Q. Wang, W. Bai, and P. X. P. Liu, page 1417
- Single Image Rain Removal Using Image Decomposition and a Dense Network. Q. S. Lian, W. F. Yan, X. H. Zhang, and S. Z. Chen, page 1428
- A Novel Cascaded PID Controller for Automatic Generation Control Analysis With Renewable Sources. A. Behera, T. K. Panigrahi, P. K. Ray, and A. K. Sahoo, page 1438
- Parallel Building: A Complex System Approach for Smart Building Energy Management. A. Almalaq, J. Hao, J. J. Zhang, and F.-Y. Wang, page 1452
- Saturated Adaptive Output-Constrained Control of Cooperative Spacecraft Rendezvous and Docking. L. Sun, page 1462
- A Context Sensitive Multilevel Thresholding using Swarm based Algorithms. S. Pare, A. Kumar, V. Bajaj, and G. K. Singh, page 1471
- A Hybrid Learning Method for the Data-Driven Design of Linguistic Dynamic Systems. C. D. Li, J. Q. Yi, Y. S. Lv, and P. Y. Duan, page 1487
- New Result on Delay-dependent Stability for Markovian Jump Time-delay Systems With Partial Information on Transition Probabilities. Y. Zhang, K. Lou, and Y. Ge, page 1499
- Multi-Model Based PSO Method for Burden Distribution Matrix Optimization With Expected Burden Distribution Output Behaviors. Y. Zhang, P. Zhou, and G. M. Cui, page 1506

- A Novel Statistical Manifold Algorithm for Position Estimation. B. Xia, W. H. Yuan, N. Xie, and C. H. Li, page 1513
- Stability of Nonlinear Systems Using Optimal Fuzzy Controllers and Its Simulation by Java Programming. M. J. Mahmoodabadi and S. A. Mostaghim, page 1519
- A User Requirement Oriented Web Service Discovery Approach Based on Logic and Threshold Petri Net. J. Sha, Y. Y. Du, and L. Qi, page 1528

[Back to the contents](#)

4.4. International Journal of Applied Mathematics and Computer Science

Contributed by: Józef Korbicz, amcs@uz.zgora.pl

International Journal of Applied Mathematics and Computer Science (AMCS)

2019, Volume 29, Number 4 (December)

Special section on "New Perspectives in Nonlinear and Intelligent Control (In Honor of Alexander P. Kurdyukov)" (Julio B. Clempner, Enso Ikonen and Alexander P. Kurdyukov, Eds.)

www.amcs.uz.zgora.pl

Special Issue:

Selek I. and Ikonen E. Fundamental limitations of the decay of generalized energy in controlled (discrete-time) nonlinear systems subject to state and input constraints 629

Khaksar W., Uddin M.Z. and Torresen J. Multiquery motion planning in uncertain spaces: Incremental adaptive randomized roadmaps 641

Flores-Flores J.P. and Martinez-Guerra R. PI observer design for a class of nondifferentially flat systems 655

Kurdyukov A.P. and Boichenko V.A. A spectral method of the analysis of linear control systems 667

Estrada E., Yu W. and Li X. Stability and transparency of delayed bilateral teleoperation with haptic feedback 681

Aguilar-Ibanez C. and Suarez-Castanon M.S. A trajectory planning based controller to regulate an uncertain 3D overhead crane system 693

Solis C., Clempner J. and Poznyak A. Robust extremum seeking for a second order uncertain plant using a sliding mode controller 703

Regular Papers:

Hendy A.S. and Macías-Díaz J.E. A conservative scheme with optimal error estimates for a multidimensional space-fractional Gross–Pitaevskii equation 713

Sanjuan A., Rotondo D., Nejari F. and Sarrate R. An LMI-based heuristic algorithm for vertex reduction in LPV systems 725

Byrski W., Drapała M. and Byrski J. An adaptive identification method based on the modulating functions technique and exact state observers for modeling and simulation of a nonlinear MISO glass melting process 739

Hedjar R. and Bounkhel R. An automatic collision avoidance algorithm for multiple marine surface vehicles 759

Janicka M., Lango M. and Stefanowski J. Using information on class interrelations to improve classification of multiclass imbalanced data: A new resampling algorithm 769

- Cestnik B. Revisiting the optimal probability estimator from small samples for data mining 783
Bohli J.-M., González Vasco M.I. and Steinwandt R. Password-authenticated group key establishment from smooth projective hash functions 797
Tuncer T., Dogan S., Tadeusiewicz R. and Pławiak P. Improved reference image encryption methods based on 2k correction in the integer wavelet domain 817

Publisher: University of Zielona Góra, Poland

ISSN: 1641-876X (print), 2083-8492 (online)

Frequency: Quarterly

Editor-in-Chief: Józef Korbicz

Website: www.amcs.uz.zgora.pl

E-mail: amcs@uz.zgora.pl

Scope: modern control theory and practice; artificial intelligence methods and their applications; applied mathematics and mathematical optimisation techniques; mathematical methods in engineering, computer science, and biology Indexation: ACM Digital Library, Applied Mechanics Reviews, Current Mathematical Publications (AMS), DBLP Computer Science Bibliography, EBSCO, Elsevier, Google Scholar, Inspection, Mathematical Reviews (MathSciNet), ProQuest, Clarivate Analytics (formerly Thomson Reuters), Zentralblatt Math, and others.

Impact Factor: 1.504 (2018) / 5-Year IF: 1.553 (2018)

[Back to the contents](#)

4.5. Automatica

Contributed by: John Coca, j.coca@elsevier.com

Automatica

Vol. 111

Papers:

- Wang W., Wen C., Huang J., Zhou J., Adaptive consensus of uncertain nonlinear systems with event triggered communication and intermittent actuator faults
Guo K., Pan Y., Zheng D., Yu H., Composite learning control of robotic systems: A least squares modulated approach
Petsagkourakis P., Heath W.P., Theodoropoulos C., Stability analysis of piecewise affine systems with multi-model predictive control
Verrelli C.M., Comments on “Repetitive learning control for a class of partially linearizable uncertain nonlinear systems”, [Automatica, 85 (2017) 397–404]
Sarafrazi M.A., Bartosiewicz Z., Kotta Ü., Comments on “PBH tests for nonlinear systems”
Cavalcanti J., Balakrishnan H., Sign-stability of Positive Markov Jump Linear Systems
Wang J., Tang S.-X., Krstic M., Adaptive output-feedback control of torsional vibration in off-shore rotary oil drilling systems
Li K., Hua C.-C., You X., Guan X.-P., Output feedback-based consensus control for nonlinear time delay multiagent systems
Pavlov A., Shames I., Manzie C., Minimax strategy in approximate model predictive control
Villanueva M.E., Houska B., On stochastic linear systems with zonotopic support sets

- Todescato M., Bof N., Cavraro G., Carli R., Schenato L., Partition-based multi-agent optimization in the presence of lossy and asynchronous communication
- Jagtap P., Zamani M., Symbolic models for retarded jump–diffusion systems
- Biamond J.J.B., Postoyan R., Heemels W.P.M.H., van de Wouw N., On the graphical stability of hybrid solutions with non-matching jump times
- Schultz E.S., Hannemann-Tamás R., Mitsos A., Guaranteed satisfaction of inequality state constraints in PDE-constrained optimization
- Roy S., Baldi S., Fridman L.M., On adaptive sliding mode control without a priori bounded uncertainty
- Ford J.J., James J., Molloy T.L., On the informativeness of measurements in Shiryaev’s Bayesian quickest change detection
- Chen C., Xie K., Lewis F.L., Xie S., Fierro R., Adaptive synchronization of multi-agent systems with resilience to communication link faults
- Zhang K., Yang X., Hu Y., Power penalty method for solving HJB equations arising from finance
- Hanema J., Lazar M., Tóth R., Heterogeneously parameterized tube model predictive control for LPV systems
- Yu Y., Meng M., Feng J.-E., Observability of Boolean networks via matrix equations
- Bernard P., Marconi L., Hybrid implementation of observers in plant’s coordinates with a finite number of approximate inversions and global convergence
- Guiver C., Logemann H., A circle criterion for strong integral input-to-state stability
- Kharkovskaia T., Efimov D., Fridman E., Polyakov A., Richard J.-P., Interval observer design and control of uncertain non-homogeneous heat equations
- Trinh H.M., Nam P.T., Pathirana P.N., Linear functional state bounding for positive systems with disturbances varying within a bounded set
- Zhang J., Leung T., Aravkin A., Sparse mean-reverting portfolios via penalized likelihood optimization
- Khaneja N., Time optimal control of coupled spin dynamics: A global analysis
- Wang X.-F., Teel A.R., Liu K.-Z., Sun X.-M., Stability analysis of distributed convex optimization under persistent attacks: A hybrid systems approach
- Zhu Y.-P., Lang Z.Q., A new convergence analysis for the Volterra series representation of nonlinear systems
- Chen C.-C., Sun Z.-Y., A unified approach to finite-time stabilization of high-order nonlinear systems with an asymmetric output constraint
- Zhang S., He F., Hong Y., Hu X., An intrinsic approach to formation control of regular polyhedra for reduced attitudes
- Sui T., Marelli D., Sun X., Fu M., Multi-sensor state estimation over lossy channels using coded measurements
- Tucci M., Ferrari-Trecate G., A scalable, line-independent control design algorithm for voltage and frequency stabilization in AC islanded microgrids
- Usevitch J., Panagou D., Determining r - and (r,s) -robustness of digraphs using mixed integer linear programming
- Feng X., Villanueva M.E., Houska B., Backward-forward reachable set splitting for state-constrained differential games
- Wang C., Wen C., Guo L., Multivariable adaptive control with unknown signs of the high-frequency gain matrix using novel Nussbaum functions
- Li Y., Shi D., Chen T., Secure analysis of dynamic networks under pinning attacks against synchronization
- Zhang J.-X., Yang G.-H., Fault-tolerant output-constrained control of unknown Euler–Lagrange systems with prescribed tracking accuracy

- Kim H., Guo P., Zhu M., Liu P., Simultaneous input and state estimation for stochastic nonlinear systems with additive unknown inputs
- Rego B.S., Raffo G.V., Scott J.K., Raimondo D.M., Guaranteed methods based on constrained zonotopes for set-valued state estimation of nonlinear discrete-time systems
- Ban J., Seo M., Goh T., Jeong H., Kim S.W., Improved co-design of event-triggered dynamic output feedback controllers for linear systems
- Goebel R., Sanfelice R.G., A unifying convex analysis and switching system approach to consensus with undirected communication graphs
- Imani M., Dougherty E.R., Braga-Neto U., Boolean Kalman filter and smoother under model uncertainty
- Leve F.A., Homological invariants for classification of kinematic singularities
- Wang L., Marconi L., Wen C., Su H., Pre-processing nonlinear output regulation with non-vanishing measurements
- Liu Z., Karimi H.R., Yu J., Passivity-based robust sliding mode synthesis for uncertain delayed stochastic systems via state observer
- Feinberg E.A., Jaśkiewicz A., Nowak A.S., Constrained discounted Markov decision processes with Borel state spaces
- Xiao X., Park J.H., Zhou L., Lu G., Event-triggered control of discrete-time switched linear systems with network transmission delays
- Abbasi G., Malek A., Pointwise optimal control for cancer treatment by hyperthermia with thermal wave bioheat transfer
- Fu W., Qin J., Wu J., Zheng W.X., Kang Y., Interval consensus over random networks

[Back to the contents](#)

4.6. Control Engineering Practice

Contributed by: John Coca, j.coca@elsevier.com

Control Engineering Practice

Volumes 93 and 94

Papers:

- Ranogajec V., Deur J., Ivanović V., Tseng H.E., Multi-objective parameter optimization of control profiles for automatic transmission double-transition shifts
- Joswiak M., Peng Y., Castillo I., Chiang L.H., Dimensionality reduction for visualizing industrial chemical process data
- Li L., Yuan X., Wang Y., Sun B., Wu D., A two-layer fuzzy synthetic strategy for operational performance assessment of an industrial hydrocracking process
- Shang C., Ji H., Huang X., Yang F., Huang D., Generalized grouped contributions for hierarchical fault diagnosis with group Lasso
- Bašić M., Vukadinović D., Grgić I., Bubalo M., Energy efficient control of a stand-alone wind energy conversion system with AC current harmonics compensation
- Padilla A., Garnier H., Young P.C., Chen F., Yuz J.I., Identification of continuous-time models with slowly time-varying parameters
- Nguyen B.-M., Hara S., Fujimoto H., Hori Y., Slip control for IWM vehicles based on hierarchical LQR

- Zhang W., Zhao Y., Zhang X., Lin F., Shared control for lane keeping assistance system based on multiple-phase handling inverse dynamics
- Messali A., Ghanes M., Hamida M.A., Koteich M., A resilient adaptive sliding mode observer for sensorless AC salient pole machine drives based on an improved HF injection method
- dos Santos W.M., Siqueira A.A.G., Optimal impedance via model predictive control for robot-aided rehabilitation
- Sanchez-Magos M., Lazaro R.P.-S., Mireles C., Ballesteros M., Salgado I., Chairez I., Hybrid position–admittance realization of an adaptive output super-twisting controller for a robotic scalpel
- Tuttle J.F., Vesel R., Alagarsamy S., Blackburn L.D., Powell K., Sustainable NO_x emission reduction at a coal-fired power station through the use of online neural network modeling and particle swarm optimization
- Janka D., Lenders F., Wang S., Cohen A., Li N., Detecting and locating patterns in time series using machine learning
- Qi R., Khajepour A., Melek W.W., Modeling, tracking, vibration and balance control of an underactuated mobile manipulator (UMM)
- Landman R., Jämsä-Jounela S.-L., Hybrid causal analysis combining a nonparametric multiplicative regression causality estimator with process connectivity information
- Zhang K., Hatano T., Nguyen T.T., Edwards C., Herrmann G., Burgess S., Antognozzi M., Khan S., Harniman R., Miles M., A super-twisting observer for atomic-force reconstruction in a probe microscope
- Tsay C., Baldea M., Integrating production scheduling and process control using latent variable dynamic models
- Arunachalam H., Pozzato G., Hoffman M.A., Onori S., Modeling the thermal and soot oxidation dynamics inside a ceria-coated gasoline particulate filter
- Rincon L., Kubota Y., Venture G., Tagawa Y., Inverse dynamic control via “simulation of feedback control” by artificial neural networks for a crane system
- Pérez-Villeda H.M., Arechavaleta G., Morales-Díaz A., Multi-vehicle coordination based on hierarchical quadratic programming
- Rinaldi G., Ferrara A., Automatic identification of the relative degree of nonlinear systems: Application to sliding mode control design and experimental assessment
- Santos P., Pitarch J.L., Vicente A., de Prada C., García Á., Improving operation in an industrial MDF flash dryer through physics-based NMPC
- Lucke M., Stief A., Chioua M., Ottewill J.R., Thornhill N.F., Fault detection and identification combining process measurements and statistical alarms
- Shen B., Yao L., Ge Z., Nonlinear probabilistic latent variable regression models for soft sensor application: From shallow to deep structure

[Back to the contents](#)

4.7. Mechatronics

Contributed by: John Coca, j.coca@elsevier.com

Mechatronics
Volumes 63 and 64

Papers:

- Zhang S., He X., Chen Q., Zhu Z., Partially saturated coupling-based control for underactuated overhead cranes with experimental verification
- Sado F., Yap H.J., Ghazilla R.A.R., Ahmad N., Design and control of a wearable lower-body exoskeleton for squatting and walking assistance in manual handling works
- Tran H.V., Ngo T.-H., Chang P.-L., Chi I.-T., Tran N.D.K., Wang D.-A., A threshold gyroscope based on a bistable mechanism
- Budolak D., Ben-Tzvi P., Series elastic actuation for improved transparency in time delayed haptic teleoperation
- Mancisidor I., Pena-Sevillano A., Dombovari Z., Barcena R., Munoa J., Delayed feedback control for chatter suppression in turning machines
- Wu Q., Chen B., Wu H., Neural-network-enhanced torque estimation control of a soft wearable exoskeleton for elbow assistance
- Haemers M., Derammelaere S., Rosich A., Ionescu C.M., Stockman K., Towards a generic optimal co-design of hardware architecture and control configuration for interacting subsystems
- Chang C.-P., Shih Y.-C., Chang S.-C., Wang Y.-C., Laser encoder system for X-Y positioning stage
- Zamanian A.H., Richer E., Adaptive notch filter for pathological tremor suppression using permanent magnet linear motor
- Liu Y., Fang Q., Zhao A., Yang F., Wang H., Ke Y., Design of DOB-based riveting force controller for dual-machine horizontal drilling and riveting system
- Shao Z., Wu Q., Chen B., Wu H., Zhang Y., Modeling and inverse control of a compliant single-tendon-sheath artificial tendon actuator with bending angle compensation
- Min J.-K., Ahn K.-H., Park H.-C., Song J.-B., A novel reactive-type joint torque sensor with high torsional stiffness for robot applications
- Zou Y., Zhou W., Automatic seam detection and tracking system for robots based on laser vision
- Liu H., Wei L., Liang Q., Cao C., Ma K., Gao S., Cong C., A Fe-Ga alloy cantilever film vibration harvester with a double-stage signal processing circuit and its main performance testing
- Cesmeci S., Gordaninejad F., Ryan K.L., Eltahawy W., Design of a fail-safe magnetorheological-based system for three-dimensional earthquake isolation of structures
- Zanchetta M., Tavernini D., Sorniotti A., Gruber P., Lenzo B., Ferrara A., Sannen K., De Smet J., De Nijs W., Trailer control through vehicle yaw moment control: Theoretical analysis and experimental assessment
- V. V.S.N.S., Padmanabhan D., Rao P.S.M., Pandya H.J., Force sensing technologies for catheter ablation procedures
- Bougrinat Y., Achiche S., Raison M., Design and development of a lightweight ankle exoskeleton for human walking augmentation
- Barton K., Bristow D., Hoelzle D., Mishra S., Mechatronics advances for the next generation of AM process control
- Wang Y., Yin Y., Performance reliability of jet pipe servo valve under random vibration environment
- Li W., Richardson R.C., Kim J., A tri-state prismatic modular robotic system
- Gobbi M., Comolli F., Hada M., Mastinu G., An instrumented steering wheel for driver model development
- Borque Gallego G., Rossini L., Onillon E., Achtnich T., Zwysig C., Seiler R., Martins Araujo D., Perriard Y., On-line micro-vibration measurement method for Lorentz-type magnetic-bearing space actuators

[Back to the contents](#)

4.8. Journal of Process Control

Contributed by: John Coca, j.coca@elsevier.com

Journal of Process Control

Volumes 83 and 84

Papers:

Du X., Fault detection using bispectral features and one-class classifiers, pages. 1-10

Cai S., Zhang L., Palazoglu A., Hu J., Clustering analysis of process alarms using word embedding, pages. 11-19

Clerget C.-H., Petit N., Dynamic optimization of processes with time varying hydraulic delays, pages. 20-29

Rajhans C., Griffith D.W., Patwardhan S.C., Biegler L.T., Pillai H.K., Terminal region characterization and stability analysis of discrete time quasi-infinite horizon nonlinear model predictive control, pages. 30-52

Ortega R., Bobtsov A., Dochain D., Nikolaev N., State observers for reaction systems with improved convergence rates, pages. 53-62

Zeng J., Huang W., Wang Z., Liang J., Mutual information-based sparse multiblock dissimilarity method for incipient fault detection and diagnosis in plant-wide process, pages. 63-76

Jogwar S.S., Distributed control architecture synthesis for integrated process networks through maximization of strength of input–output impact, pages. 77-87

Duarte B.P.M., Atkinson A.C., Granjo J.F.O., Oliveira N.M.C., Calculating D-optimal designs for compartmental models with a Michaelis–Menten elimination rate, pages. 88-101

Paulson J.A., Santos T.L.M., Mesbah A., Mixed stochastic-deterministic tube MPC for offset-free tracking in the presence of plant-model mismatch, pages. 102-120

Woelfel C., Bockhorn D., Awakowicz P., Lunze J., Model approximation and stabilization of reactive sputter processes, pages. 121-128

Schneider R., Milosavljevic P., Bonvin D., Accelerated and adaptive modifier-adaptation schemes for the real-time optimization of uncertain systems, pages. 129-135

Ghrib M., Rébillat M., Vermot des Roches G., Mechbal N., Automatic damage type classification and severity quantification using signal based and nonlinear model based damage sensitive features, pages. 136-146

Atta K.T., Guay M., Adaptive amplitude fast proportional integral phasor extremum seeking control for a class of nonlinear system, pages. 147-154

Wang R., Bao J., A differential Lyapunov-based tube MPC approach for continuous-time nonlinear processes, pages. 155-163

Romagnoli R., Couto L.D., Goldar A., Kinnaert M., Garone E., A feedback charge strategy for Li-ion battery cells based on Reference Governor, pages. 164-176

Aftab M.F., Hovd M., Sivalingam S., Diagnosis of plant-wide oscillations by combining multivariate empirical mode decomposition and delay vector variance, pages. 177-186

Gottu Mukkula A.R., Paulen R., Optimal experiment design in nonlinear parameter estimation with exact confidence regions, pages. 187-195

Kumar K., Patwardhan S.C., Noronha S., Development of an adaptive and explicit dual model predictive controller based on generalized orthogonal basis filters, pages. 196-214

Feng L., Zhao C., Huang B., A slow independent component analysis algorithm for time series feature extraction with the concurrent consideration of high-order statistic and slowness, pages. 1-12

- Lipták G., Pituk M., Hangos K.M., Modelling and stability analysis of complex balanced kinetic systems with distributed time delays, pages. 13-23
- Maggipinto M., Beghi A., McLoone S., Susto G.A., DeepVM: A Deep Learning-based approach with automatic feature extraction for 2D input data Virtual Metrology, pages. 24-34
- Hosseini-rad S., Nagamune R., Grebenyuk V., An optimal control strategy for a heat pump in an integrated solar thermal system, pages. 35-45
- Zheng J., Song Z., Mixture modeling for industrial soft sensor application based on semi-supervised probabilistic PLS, pages. 46-55
- Pessoa R.W.S., Mendes F., Oliveira T.R., Oliveira-Esquerre K., Krstic M., Numerical optimization based on generalized extremum seeking for fast methane production by a modified ADM1, pages. 56-69
- Zhang Y., Zheng Y., Li S., Enhancing cooperative distributed model predictive control for the water distribution networks pressure optimization, pages. 70-88
- Piotrowski R., Lewandowski M., Paul A., Mixed Integer nonlinear optimization of biological processes in wastewater sequencing batch reactor, pages. 89-100
- Vijay P., Tadé M.O., Shao Z., Adaptive observer based approach for the fault diagnosis in solid oxide fuel cells, pages. 101-114
- Tejeda-Iglesias M., Lappas N.H., Gounaris C.E., Ricardez-Sandoval L., Explicit model predictive controller under uncertainty: An adjustable robust optimization approach, pages. 115-132
- Aguel S., Meddeb Z., Jeday M.R., Parametric study and modeling of cross-flow heat exchanger fouling in phosphoric acid concentration plant using artificial neural network, pages. 133-145
- Yu T., Zhao J., Xu Z., Chen X., Biegler L.T., Sensitivity-based hierarchical distributed model predictive control of nonlinear processes, pages. 146-167
- Heidari M., Izadi I., Comment on "Performance assessment for generalized delay-timers in alarm configuration", pages. 168-170
- Schäfer P., Caspari A., Mhamdi A., Mitsos A., Economic nonlinear model predictive control using hybrid mechanistic data-driven models for optimal operation in real-time electricity markets: In-silico application to air separation processes, pages. 171-181
- Sun K., Wu X., Xue J., Ma F., Development of a new multi-layer perceptron based soft sensor for SO₂ emissions in power plant, pages. 182-191
- Yu Z.J., Biegler L.T., Advanced-step multistage nonlinear model predictive control: Robustness and stability, pages. 192-206
- Li T., Zhang Z., Chen H., Predicting the combustion state of rotary kilns using a Convolutional Recurrent Neural Network, pages. 207-214

[Back to the contents](#)

4.9. Engineering Applications of Artificial Intelligence

Contributed by: John Coca, j.coca@elsevier.com

Engineering Applications of Artificial Intelligence
Volume 87

Papers:

Tran O.T., Luong T.C., Understanding what the users say in chatbots: A case study for the Vietnamese language

- Sulaiman M.H., Mustaffa Z., Saari M.M., Daniyal H., Barnacles Mating Optimizer: A new bio-inspired algorithm for solving engineering optimization problems
- Xu M., Baraldi P., Al-Dahidi S., Zio E., Fault prognostics by an ensemble of Echo State Networks in presence of event based measurements
- Chen W., Zou Y., Group decision making under generalized fuzzy soft sets and limited cognition of decision makers
- Kutlu Gündoğdu F., Kahraman C., A novel spherical fuzzy QFD method and its application to the linear delta robot technology development
- Qiao W., Yang Z., Kang Z., Pan Z., Short-term natural gas consumption prediction based on Volterra adaptive filter and improved whale optimization algorithm
- Tolga A.C., Parlak I.B., Castillo O., Finite-interval-valued Type-2 Gaussian fuzzy numbers applied to fuzzy TODIM in a healthcare problem
- Liu P., Zhu B., Wang P., Shen M., An approach based on linguistic spherical fuzzy sets for public evaluation of shared bicycles in China
- Roshan S.E., Asadi S., Improvement of Bagging performance for classification of imbalanced datasets using evolutionary multi-objective optimization
- Liu Q., Xiang X., Wang Y., Luo Z., Fang F., Aircraft detection in remote sensing image based on corner clustering and deep learning
- Rajesh R., A grey-layered ANP based decision support model for analyzing strategies of resilience in electronic supply chains
- Qais M.H., Hasanien H.M., Alghuwainem S., Whale optimization algorithm-based Sugeno fuzzy logic controller for fault ride-through improvement of grid-connected variable speed wind generators
- Kotary D.K., Nanda S.J., Distributed robust data clustering in wireless sensor networks using diffusion moth flame optimization
- Son N.N., Van Kien C., Anh H.P.H., Parameters identification of Bouc–Wen hysteresis model for piezoelectric actuators using hybrid adaptive differential evolution and Jaya algorithm
- Sartea R., Farinelli A., Murari M., SECUR-AMA: Active Malware Analysis Based on Monte Carlo Tree Search for Android Systems
- Ruiz I., Raducanu B., Mehta R., Amores J., Optimizing speed/accuracy trade-off for person re-identification via knowledge distillation
- Abraham A., Au E., Binotto A., Garcia-Hernandez L., Marik V., Marmol F.G., Snasel V., Strasser T.I., Wahlster W., Industry 4.0: Quo Vadis?
- Li P., Niggemann O., Non-convex hull based anomaly detection in CPPS
- Xian S., Guo H., Novel supplier grading approach based on interval probability hesitant fuzzy linguistic TOPSIS
- Zhao W., Zhang Z., Wang L., Manta ray foraging optimization: An effective bio-inspired optimizer for engineering applications
- Luo M., Zhao R., Liu B., Liang J., Interval-valued fuzzy reasoning algorithms based on Schweizer–Sklar t-norms and its application
- Elamrani Abou El Assad Z., Mousannif H., Al Moatassime H., Karkouch A., The application of machine learning techniques for driving behavior analysis: A conceptual framework and a systematic literature review
- Rhode S., Van Vaerenbergh S., Pfriem M., Power prediction for electric vehicles using online machine learning

- Shukla A.K., Nath R., Muhuri P.K., Lohani Q.M.D., Energy efficient multi-objective scheduling of tasks with interval type-2 fuzzy timing constraints in an Industry 4.0 ecosystem
- Han X., Liu P., Wang L., Li D., Unsupervised feature selection via graph matrix learning and the low-dimensional space learning for classification
- Hancer E., A new multi-objective differential evolution approach for simultaneous clustering and feature selection
- Du Y., Yi Y., Li X., Chen X., Fan Y., Su F., Extracting and tracking hot topics of micro-blogs based on improved Latent Dirichlet Allocation
- Geng X., Ouyang D., Jiang Z., Pattern diagnosis for stochastic discrete event systems
- Çelik E., A powerful variant of symbiotic organisms search algorithm for global optimization
- Carta S., Ferreira A., Reforgiato Recupero D., Saia M., Saia R., A combined entropy-based approach for a proactive credit scoring
- Hayyolalam V., Pourhaji Kazem A.A., Black Widow Optimization Algorithm: A novel meta-heuristic approach for solving engineering optimization problems
- Thariq Ahmed H.F., Ahmad H., C.V. A., Device free human gesture recognition using Wi-Fi CSI: A survey
- Acan A., Ünveren A., Multiobjective great deluge algorithm with two-stage archive support
- Ruiz-Sarmiento J.-R., Monroy J., Moreno F.-A., Galindo C., Bonelo J.-M., Gonzalez-Jimenez J., A predictive model for the maintenance of industrial machinery in the context of industry 4.0
- Wang X., Zhao J., A complex process fault diagnosis method based on manifold distribution adaptation
- Kwasniewska A., Ruminski J., Szankin M., Kaczmarek M., Super-resolved thermal imagery for high-accuracy facial areas detection and analysis
- Kiouche A.E., Bessedik M., Benbouzid-SiTayeb F., Keddar M.R., An efficient hybrid multi-objective memetic algorithm for the frequency assignment problem
- Chen Y.-J., Chou H.-G., Wang W.-J., Tsai S.-H., Tanaka K., Wang H.O., Wang K.-C., A polynomial-fuzzy-model-based synchronization methodology for the multi-scroll Chen chaotic secure communication system
- Mishra A., Kumar A., Appadoo S.S., A note on “Novel scaled prioritized intuitionistic fuzzy soft interaction averaging aggregation operators and their application to multi criteria decision making”
- Fischer G.S., Righi R.D.R., Ramos G.D.O., Costa C.A.D., Rodrigues J.J.P.C., ElHealth: Using Internet of Things and data prediction for elastic management of human resources in smart hospitals
- Gao Y., Li D.-S., Zhong H., A novel target threat assessment method based on three-way decisions under intuitionistic fuzzy multi-attribute decision making environment
- Raj R., Mohan B.M., General structure of Interval Type-2 fuzzy PI/PD controller of Takagi–Sugeno type
- Gelmini S., Formentin S., Strada S., Tanelli M., Savaresi S., fierClass: A multi-signal, cepstrum-based, time series classifier
- Ruiz-Santaquiteria J., Bueno G., Deniz O., Vallez N., Cristobal G., Semantic versus instance segmentation in microscopic algae detection
- Peng W., Li C., Zhang G., Yi J., Interval type-2 fuzzy logic based transmission power allocation strategy for lifetime maximization of WSNs
- Wen T.-C., Chang K.-H., Lai H.-H., Integrating the 2-tuple linguistic representation and soft set to solve supplier selection problems with incomplete information
- Aiello E.M., Lisanti G., Magni L., Musci M., Toffanin C., Therapy-driven Deep Glucose Forecasting
- Zhao Y.-P., Li Z.-Q., Hu Q.-K., A size-transferring radial basis function network for aero-engine thrust estimation
- Darko A.P., Liang D., Some q-rung orthopair fuzzy Hamacher aggregation operators and their application to multiple attribute group decision making with modified EDAS method

Hu X.-B., Zhang C., Zhang G.-P., Zhang M.-K., Li H., Leeson M.S., Liao J.-Q., Finding the k shortest paths by ripple-spreading algorithms

Torres V.A.M.F., Jaimes B.R.A., Ribeiro E.S., Braga M.T., Shiguemori E.H., Velho H.F.C., Torres L.C.B., Braga A.P., Combined weightless neural network FPGA architecture for deforestation surveillance and visual navigation of UAVs

Vizzari G., Crociani L., Bandini S., An agent-based model for plausible wayfinding in pedestrian simulation

Prakash V.P., Patvardhan C., Srivastav A., A novel Hybrid Multi-objective Evolutionary Algorithm for the bi-Objective Minimum Diameter-Cost Spanning Tree (bi-MDCST) problem

Vallejo D., Castro-Schez J.J., Glez-Morcillo C., Albusac J., Multi-agent architecture for information retrieval and intelligent monitoring by UAVs in known environments affected by catastrophes

Tan J., Complex object detection using deep proposal mechanism

Yager R.R., Using fuzzy measures for modeling human perception of uncertainty in artificial intelligence

Panigrahi S., Behera H.S., A study on leading machine learning techniques for high order fuzzy time series forecasting

[Back to the contents](#)

4.10. Annual Reviews in Control

Contributed by: John Coca, j.coca@elsevier.com

Annual Reviews in Control

Volume 48

Papers:

Albaba B.M., Yildiz Y., Modeling cyber-physical human systems via an interplay between reinforcement learning and game theory, pages.1-21

Glavic M., (Deep) Reinforcement learning for electric power system control and related problems: A short review and perspectives, pages.22-35

Rego F.F.C., Pascoal A.M., Aguiar A.P., Jones C.N., Distributed state estimation for discrete-time linear time invariant systems: A survey, pages.36-56

Liu K., Selivanov A., Fridman E., Survey on time-delay approach to networked control, pages.57-79

Leifeld T., Zhang Z., Zhang P., Overview and comparison of approaches towards an algebraic description of discrete event systems, pages.80-88

Shen D., Li X., A survey on iterative learning control with randomly varying trial lengths: Model, synthesis, and convergence analysis, pages.89-102

Sánchez H.S., Rotondo D., Escobet T., Puig V., Quevedo J., Bibliographical review on cyber attacks from a control oriented perspective, pages.103-128

Nascimento T.P., Saska M., Position and attitude control of multi-rotor aerial vehicles: A survey, pages.129-146

Huang S., Teo R.S.H., Tan K.K., Collision avoidance of multi unmanned aerial vehicles: A review, pages.147-164

Colli M., Berger U., Bockholt M., Madsen O., Møller C., Wæhrens B.V., A maturity assessment approach for conceiving context-specific roadmaps in the Industry 4.0 era, pages.165-177

Bakir T., Bonnard B., Rouot J., Geometric optimal control techniques to optimize the production of chemical reactors using temperature control, pages.178-192

- Alanis A.Y., Hernandez-Vargas E.A., Special section on modeling, identification and control of nonlinear systems, pages.193-194
- Ito H., A geometrical formulation to unify construction of Lyapunov functions for interconnected iISS systems, pages.195-208
- Basin M., Finite- and fixed-time convergent algorithms: Design and convergence time estimation, pages.209-221
- Quiroz G., The evolution of control algorithms in artificial pancreas: A historical perspective, pages.222-232
- Califano C., Scharbarg E., Magdelaine N., Moog C.H., A nonlinear time-delay realization for gastroparesis in patients with diabetes, pages.233-241
- Hernandez-Vargas E.A., Alanis A.Y., Tetteh J., A new view of multiscale stochastic impulsive systems for modeling and control of epidemics, pages.242-249
- Poznyak A., Chairez I., Poznyak T., A survey on artificial neural networks application for identification and control in environmental engineering: Biological and chemical systems with uncertain models, pages.250-272
- Villaseñor C., Rios J.D., Arana-Daniel N., Lopez-Franco C., Gomez-Avila J., Optimized control and neural observers with germinal center optimization: A review, pages.273-280
- Ferrara A., De Schutter B., Introduction to the Special Section on Control in Transportation Systems (CTS), pages.281-282
- Zhao Y., Ioannou P., A co-simulation, optimization, control approach for traffic light control with truck priority, pages.283-291
- Othman B., De Nunzio G., Di Domenico D., Canudas-de-Wit C., Ecological traffic management: A review of the modeling and control strategies for improving environmental sustainability of road transportation, pages.292-311
- Pasquale C., Sacone S., Siri S., Ferrara A., Traffic control for freeway networks with sustainability-related objectives: Review and future challenges, pages.312-324
- Papamichail I., Bekiaris-Liberis N., Delis A.I., Manolis D., Mountakis K.-S., Nikolos I.K., Roncoli C., Papa-georgiou M., Motorway traffic flow modelling, estimation and control with vehicle automation and communication systems, pages.325-346
- Zhang Y., Cassandras C.G., An impact study of integrating connected automated vehicles with conventional traffic, pages.347-356
- Chase J.G., Tsuzuki M.D.S.G., Benyó B., Desaive T., Editorial: Special Section on Biological Medical Systems, pages.357-358
- Chase J.G., Benyo B., Desaive T., Glycemic control in the intensive care unit: A control systems perspective, pages.359-368
- Morton S.E., Knopp J.L., Chase J.G., Docherty P., Howe S.L., Möller K., Shaw G.M., Tawhai M., Optimising mechanical ventilation through model-based methods and automation, pages.369-382
- Desaive T., Horikawa O., Ortiz J.P., Chase J.G., Model-based management of cardiovascular failure: Where medicine and control systems converge, pages.383-391
- Duysens J., Forner-Cordero A., A controller perspective on biological gait control: Reflexes and central pattern generators, pages.392-400
- Reiterer F., Freckmann G., Advanced carbohydrate counting: An engineering perspective, pages.401-422
- Santos-Valle A.B.C., Souza G.R.R., Paes C.Q., Miyazaki T., Silva A.H., Altube M.J., Morilla M.J., Romero E.L., Creczynski-Pasa T.B., Cabral H., Pittella F., Nanomedicine strategies for addressing major needs in neglected tropical diseases, pages.423-441

Martins T.D.C., Sato A.K., de Moura F.S., de Camargo E.D.L.B., Silva O.L., Santos T.B.R., Zhao Z., Möeller K., Amato M.B.P., Mueller J.L., Lima R.G., Tsuzuki M.D.S.G., A review of electrical impedance tomography in lung applications: Theory and algorithms for absolute images, pages.442-471

Zhou T., Knopp J.L., Chase J.G., The state of variability: A vision for descriptors of glycaemia, pages.472-484

[Back to the contents](#)

4.11. Nonlinear Analysis: Hybrid Systems

Contributed by: John Coca, j.coca@elsevier.com

Nonlinear Analysis: Hybrid Systems

Volume 35

Papers:

Aslam M.S., Qaisar I., Saleem M.A., Quantized Event-triggered feedback control under fuzzy system with time-varying delay and Actuator fault

Ma T., Yu T., Huang J., Yang X., Gu Z., Adaptive odd impulsive consensus of multi-agent systems via comparison system method

Echenausia-Monroy J.L., Huerta-Cuellar G., A novel approach to generate attractors with a high number of scrolls

Sakthivel R., Susana Ramya L., Ma Y.-K., Malik M., Leelamani A., Stabilization of uncertain switched discrete-time systems against actuator faults and input saturation

Wang J., Liang J., Robust finite-horizon stability and stabilization for positive switched FM-II model with actuator saturation

Kavikumar R., Sakthivel R., Kwon O.M., Kaviarasan B., Reliable non-fragile memory state feedback controller design for fuzzy Markov jump systems

Wei Y., Liu G.-P., Composite control for switched impulsive time-delay systems subject to actuator saturation and multiple disturbances

Li H., Zhang J., Jing L., Ying W., Neural-network-based adaptive quasi-consensus of nonlinear multi-agent systems with communication constraints and switching topologies

Moradvandi A., Malek S.A., Shahrokhi M., Adaptive finite-time fault-tolerant controller for a class of uncertain MIMO nonlinear switched systems subject to output constraints and unknown input nonlinearities

Li S., Lv C., Ding X., Synchronization of stochastic hybrid coupled systems with multi-weights and mixed delays via aperiodically adaptive intermittent control

Cristofaro A., Sassano M., Disturbance decoupling and design of unknown input observers for hybrid systems with state-driven jumps

Dai S., Koutsoukos X., Safety analysis of integrated adaptive cruise and lane keeping control using multimodal port-Hamiltonian systems

Bianchi F., Prandini M., Piroddi L., A randomized two-stage iterative method for switched nonlinear systems identification

Liu X., Zhai D., Adaptive decentralized control for switched nonlinear large-scale systems with quantized input signal

Lagasquie G., Madec S., Comparison of the global dynamics for two chemostat-like models: Random temporal variation versus spatial heterogeneity

Grimm S., Erlwein-Sayer C., Mamon R., Discrete-time implementation of continuous-time filters with application to regime-switching dynamics estimation

[Back to the contents](#)

4.12. European Journal of Control

Contributed by: John Coca, j.coca@elsevier.com

European Journal of Control

Volume 50

Papers:

- Shen C., Weak solution of the Novikov equation and optimal control, pages. 1-10
- Cheng X., Scherpen J.M.A., Zhang F., Model reduction of synchronized homogeneous Lur'e networks with incrementally sector-bounded nonlinearities, pages. 11-19
- Sargolzaei M., Latif Shabgahi G., Afshar M., Entropy control of stochastic processes described by stochastic Gompertz equation based on Fokker–Planck equation, pages. 20-29
- Jin F.-F., Guo B.-Z., Performance boundary output tracking for a wave equation with control unmatched disturbance, pages. 30-40
- Erdem I., Asbjörnsson G., Kihlman H., Feedforward control for oscillatory signal tracking using Hilbert transform, pages. 41-50
- Nagira Y., Hosoe Y., Hagiwara T., Causality of general input–output systems and extended small-gain theorem for their feedback connection, pages. 51-61
- Pezzutto M., Schenato L., Dey S., Heavy-tails in Kalman filtering with packet losses, pages. 62-71
- Maarouf H., Controllable subspace for linear time varying systems, pages. 72-78
- Moussaoui L., Aouaouda S., Chadli M., Bouhali O., Righi I., State and output feedback control for constrained discrete-time nonlinear systems, pages. 79-87
- Ren G., Liu B., Near-optimal control for a singularly perturbed linear stochastic singular system with Markovian jumping parameters, pages. 88-95
- Hao T., Meng Q., A second-order maximum principle for singular optimal controls with recursive utilities of stochastic delay systems, pages. 96-106
- Duan G.-R., Circulation algorithm for partial eigenstructure assignment via state feedback, pages. 107-116
- Babaei N., Salamci M.U., Mixed therapy in cancer treatment for personalized drug administration using model reference adaptive control, pages. 117-137
- Farnam A., Sarlette A., About string stability of a vehicle chain with unidirectional controller, pages. 138-144
- Ammari K., Beji L., Reconstructed drill-bit motion for sonic drillstring dynamics, pages. 145-152
- Farooqi H., Incremona G.P., Colaneri P., Railway collaborative eodrive via dissension based switching nonlinear model predictive control, pages. 153-160
- Maity A., Höcht L., Holzapfel F., Time-varying parameter model reference adaptive control and its application to aircraft, pages. 161-175
- Kennedy E., King E., Tran H., Real-time implementation and analysis of a modified energy based controller for the swing-up of an inverted pendulum on a cart, pages. 176-187
- Eilbrecht J., Stursberg O., Hierarchical solution of non-convex optimal control problems with application to autonomous driving, pages. 188-197

Zhang X., Jiang W., Li Z., Song S., A hierarchical Lyapunov-based cascade adaptive control scheme for lower-limb exoskeleton, pages. 198-208

[Back to the contents](#)

4.13. ISA Transactions

Contributed by: John Coca, j.coca@elsevier.com

ISA Transactions
Volumes 94 and 95

Papers:

- Guo B., Chen Y., Adaptive fast sliding mode fault tolerant control integrated with disturbance observer for spacecraft attitude stabilization system, papers. 1-9
- Liu C., Liu X., Wang H., Zhou Y., Lu S., Xu B., Event-triggered adaptive tracking control for uncertain nonlinear systems based on a new funnel function, papers. 10-16
- Zhang K., Duan G., Output-feedback super-twisting control for line-of-sight angles tracking of non-cooperative target spacecraft, papers. 17-27
- Liu X., Xu S., Huang Y., Optimal control for earth pressure balance of shield machine based on action-dependent heuristic dynamic programming, papers. 28-35
- Barreiro A., Delgado E., Reset observers alleviating the peaking and the robustness tradeoffs: A case study on force estimation in teleoperation, papers. 36-46
- Zhao Y., Zhao J., Fu J., Dimirovski G.M., Integrated H-Infinity filtering bumpless transfer control for switched linear systems, papers. 47-56
- Sakthivel R., Alzahrani F., Selvaraj P., Anthoni S.M., Synchronization of complex dynamical networks with random coupling delay and actuator faults, papers. 57-69
- Li L., Wang X., Xia Y., Yang H., Predictive cloud control for multiagent systems with stochastic event-triggered schedule, papers. 70-79
- Pan B., Fareed U., Qing W., Tian S., A novel fractional order PID navigation guidance law by finite time stability approach, papers. 80-92
- Chu X., Li M., H-Infinity non-fragile observer-based dynamic event-triggered sliding mode control for nonlinear networked systems with sensor saturation and dead-zone input, papers. 93-107
- Yavari M., Nazemi A., An efficient numerical scheme for solving fractional infinite-horizon optimal control problems, papers. 108-118
- Tan J., Xu F., Oлару S., Wang X., Liang B., ZKF-based optimal robust fault estimation of descriptor LPV systems with measurement error-affected scheduling variables, papers. 119-134
- Zhang J., Luo H., Hui B., Chang Z., Zhang X., Unknown noise removal via sparse representation model, papers. 135-143
- Bai Y.-N., Huang N., Sun L., Wang L., Reliability-based topology design for large-scale networks, papers. 144-150
- Nie J., Lin X., Improved adaptive integral line-of-sight guidance law and adaptive fuzzy path following control for underactuated MSV, papers. 151-163
- Lan T., Tong C., Yu H., Shi X., Statistical monitoring for non-Gaussian processes based on MICA-KDR method, papers. 164-173

- Zhuang Y., Huang H., Sharma S., Xu D., Zhang Q., Cooperative path planning of multiple autonomous underwater vehicles operating in dynamic ocean environment, papers. 174-186
- Mohamed M., Said H., Mhamed L., Mohamed B., Tayeb A., Mouloud D., Mohamed M., New hybrid sensorless speed of a non-salient pole PMSG coupled to wind turbine using a modified switching algorithm, papers. 187-199
- Ballesteros-Escamilla M.F., Cruz-Ortiz D., Chairez I., Luviano-Juárez A., Adaptive output control of a mobile manipulator hanging from a quadcopter unmanned vehicle, papers. 200-217
- Kelekci E., Kizir S., Trajectory and vibration control of a flexible joint manipulator using interval type-2 fuzzy logic, papers. 218-233
- Lu Z., Zhang J., Xu B., Wang D., Su Q., Qian J., Yang G., Pan M., Deadzone compensation control based on detection of micro flow rate in pilot stage of proportional directional valve, papers. 234-245
- Maruthi Prasad G., Seshagiri Rao A., Evaluation of gap-metric based multi-model control schemes for non-linear systems: An experimental study, papers. 246-254
- Ye S., Design and performance analysis of an iterative flux sliding-mode observer for the sensorless control of PMSM drives, papers. 255-264
- Li Y.-J., Wang G.-C., Cui H.-Y., Cao S.-K., Wang X.-Y., Dynamic characteristics and optimization research on PVDF piezoelectric film force sensor for steel ball cold heading machine, papers. 265-275
- Włodarski W., Control of a vapour microturbine set in cogeneration applications, papers. 276-293
- Chen G., Lu G., Liu J., Yan P., An integrated framework for statistical change detection in running status of industrial machinery under transient conditions, papers. 294-306
- Ahmad M.A., Sheikh A.K., Nazir K., Design of experiment based statistical approaches to optimize submerged arc welding process parameters, papers. 307-315
- Torrico B.C., de Almeida Filho M.P., Lima T.A., Santos T.L.M., Nogueira F.G., New simple approach for enhanced rejection of unknown disturbances in LTI systems with input delay, papers. 316-325
- Qiu Y., Li X., Chen W., Duan Z.-M., Yu L., State of charge estimation of vanadium redox battery based on improved extended Kalman filter, papers. 326-337
- Kazemi M.G., Montazeri M., Fault Detection of continuous time linear switched systems using combination of Bond Graph method and switching observer, papers. 338-351
- Naderipour A., Abdul-Malek Z., Ramachandaramurthy V.K., Kalam A., Miveh M.R., Hierarchical control strategy for a three-phase 4-wire microgrid under unbalanced and nonlinear load conditions, papers. 352-369
- Yuan L., Yang B., Wei Q., Human indoor location for binary infrared sensor tracking system: On improved credit and dynamic pruning algorithm, papers. 370-378
- Liu Y., Wang X., Zhai Z., Chen R., Zhang B., Jiang Y., Timely daily activity recognition from headmost sensor events, papers. 379-390
- Wang T., Chu F., Bearing fault diagnosis under time-varying rotational speed via the fault characteristic order (FCO) index based demodulation and the stepwise resampling in the fault phase angle (FPA) domain, papers. 391-400
- Li L., Li X., Ye S., Dynamic output feedback H-Infinity control for 2D fuzzy systems, papers. 1-10
- Wang K., Liu Y., Liu X., Jing Y., Zhang S., Adaptive fuzzy funnel congestion control for TCP/AQM network, papers. 11-17
- Jia Z., Hu Z., Zhang W., Adaptive output-feedback control with prescribed performance for trajectory tracking of underactuated surface vessels, papers. 18-26
- Li Z., Liu Y., Jing Y., Design of adaptive backstepping congestion controller for TCP networks with UDP flows based on minimax, papers. 27-34

- Jia X., Xu S., Qi Z., Zhang Z., Chu Y., Adaptive output feedback tracking of nonlinear systems with uncertain nonsymmetric dead-zone input, papers. 35-44
- An H., Xia H., Ma G., Wang C., Adaptive control of a switched hypersonic vehicle model robust to scramjet choking and elevator fault, papers. 45-57
- Su L., Ye D., Observer-based output feedback H-Infinity control for cyber-physical systems under randomly occurring packet dropout and periodic DoS attacks, papers. 58-67
- Li Z., Yan X., Complex dynamic process monitoring method based on slow feature analysis model of multi-subspace partitioning, papers. 68-81
- Miranda-Colorado R., Finite-time sliding mode controller for perturbed second-order systems, papers. 82-92
- Ahmadian Behrooz H., Robust set-point optimization of inferential control system of crude oil distillation units, papers. 93-109
- Omar A.I., Abdel Aleem S.H.E., El-Zahab E.E.A., Algablawy M., Ali Z.M., An improved approach for robust control of dynamic voltage restorer and power quality enhancement using grasshopper optimization algorithm, papers. 110-129
- Zhu B., Farouki R.T., A general framework for solving inverse dynamics problems in multi-axis motion control, papers. 130-143
- Zhang H., Xie Y., She L., Zhai C., Xiao G., High-precision tracking differentiator via generalized discrete-time optimal control, papers. 144-151
- Tao H., Paszke W., Rogers E., Yang H., Gałkowski K., Finite frequency range iterative learning fault-tolerant control for discrete time-delay uncertain systems with actuator faults, papers. 152-163
- Song X., Zheng W.X., Linear estimation for discrete-time periodic systems with unknown measurement input and missing measurements, papers. 164-172
- Li Q., Yuan J., Zhang B., Wang H., Artificial potential field based robust adaptive control for spacecraft rendezvous and docking under motion constraint, papers. 173-184
- Tao J., Du L., Dehmer M., Wen Y., Xie G., Zhou Q., Path following control for towing system of cylindrical drilling platform in presence of disturbances and uncertainties, papers. 185-193
- Lungu M., Auto-landing of fixed wing unmanned aerial vehicles using the backstepping control, papers. 194-210
- Tahmasbi N., Tehrani H.A., Esmaeili J., Practical stabilization of time-delay fractional-order systems by parametric controllers, papers. 211-220
- He R., Chen G., Dong C., Sun S., Shen X., Data-driven digital twin technology for optimized control in process systems, papers. 221-234
- Rojas A.J., Signal-to-noise ratio constrained feedback control: Robust stability analysis, papers. 235-242
- Sellali M., Abdeddaim S., Betka A., Djerdir A., Drid S., Tiar M., Fuzzy-Super twisting control implementation of battery/super capacitor for electric vehicles, papers. 243-253
- Wu Y., Yue D., Dong Z., Robust integral of neural network and precision motion control of electrical-optical gyro-stabilized platform with unknown input dead-zones, papers. 254-265
- Zhang W., Nan N., Yang Y., Zhong W., Chen Y., Force ripple compensation in a PMLSM position servo system using periodic adaptive learning control, papers. 266-277
- Maraoui S., Bouzrara K., ARX model decomposed on Meixner-Like orthonormal bases, papers. 278-294
- Zhang W., Li X., Ding Q., Deep residual learning-based fault diagnosis method for rotating machinery, papers. 295-305
- Yang J., Xie G., Yang Y., Zhang Y., Liu W., Deep model integrated with data correlation analysis for multiple intermittent faults diagnosis, papers. 306-319

- Li J., Wang H., Zhang J., Yao X., Zhang Y., Impact fault detection of gearbox based on variational mode decomposition and coupled underdamped stochastic resonance, papers. 320-329
- Zeghlache S., Djerioui A., Benyettou L., Benslimane T., Mekki H., Bouguerra A., Fault tolerant control for modified quadrotor via adaptive type-2 fuzzy backstepping subject to actuator faults, papers. 330-345
- Liu Z., Jin Y., Zuo M.J., Peng D., ACCUGRAM: A novel approach based on classification to frequency band selection for rotating machinery fault diagnosis, papers. 346-357
- Wang H., Peng M.-J., Wesley Hines J., Zheng G.-Y., Liu Y.-K., Upadhyaya B.R., A hybrid fault diagnosis methodology with support vector machine and improved particle swarm optimization for nuclear power plants, papers. 358-371
- li X., Peng X., Geng Z., Anti-swing control for 2-D under-actuated cranes with load hoisting/lowering: A coupling-based approach, papers. 372-378
- Guo X., Tang J., Li J., Shen C., Liu J., Attitude measurement based on imaging ray tracking model and orthographic projection with iteration algorithm, papers. 379-391

[Back to the contents](#)

4.14. Journal of the Franklin Institute

Contributed by: John Coca, j.coca@elsevier.com

Journal of the Franklin Institute

Volume 356, Issues 16–18

Papers:

- Ren W., Yang H., Jiang B., Fault-tolerant safe control design of switched and interconnected nonlinear systems, pages. 8929-8951
- Du C., Yang C., Li F., Shi P., Asynchronous output feedback control for fuzzy Markovian jump systems via sliding mode, pages. 8952-8970
- Wang B., Lv Y., Jian J., Jiang X., New results on the trade-off performance of LTI system with colored noise and encoder-decoder strategy, pages. 8971-8995
- Wei L., Chen W.-H., Luo S., Stabilization of discrete-time switched linear systems with time-varying delays via nearly-periodic impulsive control, pages. 8996-9022
- Nagamani G., Karthik C., Soundararajan G., Observer-based exponential stabilization for time-delay systems via augmented weighted integral inequality, pages. 9023-9042
- Zhang B., Dou C., Yue D., Zhang Z., Zhang T., Consensus-based economic hierarchical control strategy for islanded MG considering communication path reconstruction, pages. 9043-9075
- Poulsen D., Defoort M., Djemai M., Mean square consensus of double-integrator multi-agent systems under intermittent control: A stochastic time scale approach, pages. 9076-9094
- Cui Y., Xu L., Bounded average consensus for multi-agent systems with switching topologies by event-triggered persistent dwell time control, pages. 9095-9121
- Li W.-T., Liu Y.-C., Human-swarm collaboration with coverage control under nonidentical and limited sensory ranges, pages. 9122-9151
- Yang G., Yao J., Output feedback control of electro-hydraulic servo actuators with matched and mismatched disturbances rejection, pages. 9152-9179
- Hu M.-J., Wang Y.-W., Xiao J.-W., Yang W., L1-gain analysis and control of impulsive positive systems with interval uncertainty and time delay, pages. 9180-9205

- Li X., Shen D., Xu J.-X., Adaptive iterative learning control for MIMO nonlinear systems performing iteration-varying tasks, pages. 9206-9231
- Ba K., Yu B., Zhu Q., Gao Z., Ma G., Jin Z., Kong X., The position-based impedance control combined with compliance-eliminated and feedforward compensation for HDU of legged robot, pages. 9232-9253
- Khater A.A., El-Nagar A.M., El-Bardini M., El-Rabaie N.M., Online learning of an interval type-2 TSK fuzzy logic controller for nonlinear systems, pages. 9254-9285
- Ao W., Huang J., Cui Q., Sanchez R.V., Finite-time leaderless consensus control of a group of Euler-Lagrangian systems with backlash nonlinearities, pages. 9286-9301
- Ghorbani M., Tavakoli-Kakhki M., Estarami A.A., Robust FOPID stabilization of retarded type fractional order plants with interval uncertainties and interval time delay, pages. 9302-9329
- Cui M., Wu Z., Trajectory tracking of flexible joint manipulators actuated by DC-motors under random disturbances, pages. 9330-9343
- Tayyebi S., Alishiri M., A novel adaptive three stages model predictive control based on fuzzy systems: Application in MIMO controlling of MED-TVC process, pages. 9344-9363
- Dai F., Liu B., Optimal control and pattern formation for a haptotaxis model of solid tumor invasion, pages. 9364-9406
- Ghous I., Duan Z., Akhtar J., Jawad M., Robust stabilization of uncertain 2-D discrete-time delayed systems using sliding mode control, pages. 9407-9431
- Ponce H., Acevedo M., Esparza-Duran N., A hybrid fuzzy-molecular controller enhanced with evolutionary algorithms: A case study in a one-leg mechanism, pages. 9432-9450
- Liu J., Wang Y., Zha L., Yan H., Event-based control for networked T-S fuzzy cascade control systems with quantization and cyber attacks, pages. 9451-9473
- Wang F., Hou M., Cao X., Duan G., Event-triggered backstepping control for attitude stabilization of spacecraft, pages. 9474-9501
- Li G., Görges D., Energy management strategy for parallel hybrid electric vehicles based on approximate dynamic programming and velocity forecast, pages. 9502-9523
- Du Z., Yuan W., Hu S., Discrete-time event-triggered H-infinity stabilization for networked cascade control systems with uncertain delay, pages. 9524-9544
- Li R.-B., Niu B., Feng Z.-G., Li J.-Q., Duan P.-Y., Yang D., Adaptive neural design frame for uncertain stochastic nonlinear non-lower triangular pure-feedback systems with input constraint, pages. 9545-9564
- Wang Q., Chen G., Yu H., Stability analysis and control synthesis for linear systems with non-symmetrical input saturation, pages. 9565-9579
- Liu H., Wang H., Cao J., Alsaedi A., Hayat T., Composite learning adaptive sliding mode control of fractional-order nonlinear systems with actuator faults, pages. 9580-9599
- Zhang H., Su S., Zhao Y.-Y., Lu J., Networked load frequency control of multi-area uncertain power systems via adaptive event-triggered communication scheme, pages. 9600-9626
- Liu L., Xu S., Xie X.-J., Xiao B., Observer-based decentralized control of large-scale stochastic high-order feedforward systems with multi time delays, pages. 9627-9645
- Bu X., An improvement of single-network adaptive critic design for nonlinear systems with asymmetry constraints, pages. 9646-9664
- Xu Y., Cheng Y., Bai L., Zhang X., Multi-agent containment control with random link failures over dynamic cooperative networks, pages. 9665-9676
- Zhou Z., Luan X., Liu F., High-order moment stabilization for Markov jump systems with attenuation rate, pages. 9677-9688

- Ren H., Zong G., Yang D., Input-output finite-time stabilization for MJSs with time-varying delay: An observer-based approach, pages. 9689-9712
- Yao X.-Y., Ding H.-F., Ge M.-F., Synchronization control for multiple heterogeneous robotic systems with parameter uncertainties and communication delays, pages. 9713-9729
- Yuan J., Xie J., Liu C., Teo K.L., Huang M., Fan H., Feng E., Xiu Z., Robust optimization for a nonlinear switched time-delay system with noisy output measurements using hybrid optimization algorithm, pages. 9730-9762
- Niu Y., Wang H., Wang Z., Xia D., Li H., Primal-dual stochastic distributed algorithm for constrained convex optimization, pages. 9763-9787
- Wang T., Xiang W., Necessary and sufficient conditions to stability of discrete-time delay systems, pages. 9788-9803
- Li P., Liu Y., Zhang B., Lu R., Stability analysis problems of periodic piecewise polynomial systems, pages. 9804-9823
- Yan X., Lyu S., Mars entry guidance based on nonlinear model predictive control with disturbance observer, pages. 9824-9843
- Lan G., Lin Z., Wei C., Zhang S., A stochastic SIRS epidemic model with non-monotone incidence rate under regime-switching, pages. 9844-9866
- Su W., Guo J., Chen X., Chen G., Li J., Robust fragmentation modeling of Hegselmann–Krause-type dynamics, pages. 9867-9880
- Gu D.-K., Liu G.-P., Duan G.-R., Robust stability of uncertain second-order linear time-varying systems, pages. 9881-9906
- Gong D., Wang X., Wu S., Zhu X., Discrete Legendre polynomials-based inequality for stability of time-varying delayed systems, pages. 9907-9927
- Li J., Jiang H., Hu C., Alsaedi A., Finite/fixed-time synchronization control of coupled memristive neural networks, pages. 9928-9952
- Liu X., Yang X., Zhu P., Xiong W., Robust identification of nonlinear time-delay system in state-space form, pages. 9953-9971
- Han J., Zhang H., Liang X., Wang R., Distributed impulsive control for heterogeneous multi-agent systems based on event-triggered scheme, pages. 9972-9991
- Liu H., Xie G., Gao Y., Containment control of fractional-order multi-agent systems with time-varying delays, pages. 9992-10014
- Zou Y., Zhu J., Liu Y., Cascading state-space decomposition of Boolean control networks by nested method, pages. 10015-10030
- Ajwad S.A., Ménard T., Moulay E., Defoort M., Coirault P., Observer based leader-following consensus of second-order multi-agent systems with nonuniform sampled position data, pages. 10031-10057
- Ma G., Liu X., Pagilla P.R., Ge S.S., Periodic event-based asynchronous filtering of switched systems, pages. 10058-10075
- Xu Y., Wang Y., Zhuang G., Wang Y., Lu J., An event-triggered asynchronous H-Infinity filtering for singular Markov jump systems with redundant channels, pages. 10076-10101
- Wang L., Ji Y., Wan L., Bu N., Hierarchical recursive generalized extended least squares estimation algorithms for a class of nonlinear stochastic systems with colored noise, pages. 10102-10122
- Schimmack M., Mercorelli P., A structural property of the wavelet packet transform method to localise incoherency of a signal, pages. 10123-10137
- Yang Z., Fan L., Yang Y., Yang Z., Gui G., Generalized singular value thresholding operator based nonconvex low-rank and sparse decomposition for moving object detection, pages. 10138-10154

- Wang J., Xing M., Sun Y., Li J., Lu J., Event-triggered dissipative state estimation for Markov jump neural networks with random uncertainties, pages. 10155-10178
- Li X., Dong X., Li Q., Ren Z., Event-triggered time-varying formation control for general linear multi-agent systems, pages. 10179-10195
- Tran N.-T., Wang Y.-W., Liu X.-K., Xiao J.-W., Lei Y., Distributed optimization problem for second-order multi-agent systems with event-triggered and time-triggered communication, pages. 10196-10215
- Wang H., Dong R., Xue A., Peng Y., Event-triggered L_2 - L -Infinity state estimation for discrete-time neural networks with sensor saturations and data quantization, pages. 10216-10240
- Chen Y., Wen G., Peng Z., Rahmani A., Consensus of fractional-order multiagent system via sampled-data event-triggered control, pages. 10241-10259
- Liu J., Tian E., Xie X., Lin H., Distributed event-triggered control for networked control systems with stochastic cyber-attacks, pages. 10260-10276
- Sun H., Peng C., Zhang W., Yang T., Wang Z., Security-based resilient event-triggered control of networked control systems under denial of service attacks, pages. 10277-10295
- He H., Gao X., Qi W., Distributed event-triggered sliding mode control of switched systems, pages. 10296-10314
- Jiang L., Yan L., Xia Y., Guo Q., Fu M., Li L., Distributed fusion in wireless sensor networks based on a novel event-triggered strategy, pages. 10315-10334
- Zhao Y., Shen Y., Distributed event-triggered state estimation and fault detection of nonlinear stochastic systems, pages. 10335-10354
- Chen S., Guan J., Gao Y., Yan H., Observer-based event-triggered tracking consensus of non-ideal general linear multi-agent systems, pages. 10355-10367
- Sun M., Huang L., Wang S., Mao C., Xie W., Quantized control of event-triggered networked systems with time-varying delays, pages. 10368-10392
- Shi T., Tang T., Bai J., Distributed event-triggered control co-design for large-scale systems via static output feedback, pages. 10393-10404
- Wang J.-W., Observer-based boundary control of semi-linear parabolic PDEs with non-collocated distributed event-triggered observation, pages. 10405-10420
- Zou W., Xiang Z., Event-triggered containment control of second-order nonlinear multi-agent systems, pages. 10421-10438
- Liang Y., Sheng A., Qi G., Li Y., Event-triggered diffusion estimation for asynchronous sensor networks with unreliable measurements, pages. 10439-10465
- Gao J., Zheng M., Distributed adaptive event-triggered protocol for tracking control of leader-following multi-agent systems, pages. 10466-10479
- Arvelo E.R., Martins N.C., Optimal sensor scheduling for station-keeping in denied environments, pages. 10480-10513
- Liu R., Wu J., Wang D., Event-based reference tracking control of discrete-time nonlinear systems via delta operator method, pages. 10514-10531
- Yang C., Yang W., Shi H., Communication-saving design by stochastic event triggers, pages. 10532-10546
- Zhou J., Zhu J.-W., Zhang W.-A., Yu L., Event-triggered dynamic output feedback tracking control for large-scale interconnected systems with disturbances, pages. 10547-10563
- Yin Y., Liu Y., Teo K.L., Wang S., Liu F., Event-triggered ϵ level H-Infinity probabilistic control of uncertain systems, pages. 10564-10575
- Wang Y., Zhu Y., Zhu Y., On aperiodic event-triggered master-slave synchronization of chaotic Lur'e systems, pages. 10576-10592

- Zheng X., Zhang H., Wang Z., Yan H., Almost surely state estimation for multi-rate networked systems under random and malicious packet losses, pages. 10593-10607
- Williams D.N., 2016 and 2017 Franklin Institute Awards Special Issue, pages. 11178-11179
- Zhang J., Xia J., Sun W., Wang Z., Shen H., Command filter-based finite-time adaptive fuzzy control for nonlinear systems with uncertain disturbance, pages. 11270-11284
- Liang K., Wanli L., Exponential synchronization in inertial Cohen–Grossberg neural networks with time delays, pages. 11285-11304
- Gao J., Wang L., Gao R., Huang J., Adaptive control of uncertain underactuated cranes with a non-recursive control scheme, pages. 11305-11317
- Chentouf B., Smaoui N., Exponential stabilization of a non-uniform rotating disk-beam system via a torque control and a finite memory type dynamic boundary control, pages. 11318-11344
- Zhao S., Liang H., Du P., Pan Y., Adaptive neural network control for a class of discrete-time nonlinear interconnected systems with unknown dead-zone, pages. 11345-11363
- Saqib N.U., Rehan M., Hussain M., Zheng Z., Observer-based anti-windup compensator design for nonlinear systems, pages. 11364-11384
- Mu X., Zhang Q., Rong L., Optimal vaccination strategy for an SIRS model with imprecise parameters and Lévy noise, pages. 11385-11413
- Zhao H., Niu Y., Zhao J., Event-triggered sliding mode control of uncertain switched systems under denial-of-service attacks, pages. 11414-11433
- Liu L., Zhang S., Fractional-order partial pole assignment for time-delay systems based on resonance and time response criteria analysis, pages. 11434-11455
- Gao M., Feng D., Security control for networked control systems with randomly occurring integrity check protection subject to randomly occurring zero-value attacks, pages. 11456-11472
- Santos-Sánchez O.-J., Mondié S., Rodríguez-Guerrero L., Carmona-Rosas J.-C., Delays compensation for an atmospheric sliced tomatoes dehydration process via state predictors, pages. 11473-11491
- Li Z.-Y., Fan Q., Li L., Wang Y., Stability analysis of linear continuous-time delay-difference systems with multiple time-delays, pages. 11492-11519
- Liu L., Ding X., Zhou W., Li X., Global mean square exponential stability and stabilization of uncertain switched delay systems with Lévy noise and flexible switching signals, pages. 11520-11545
- Li R., Shi Y.J., Wu X.Q., Song Y.D., Safe-circumnavigation of one single agent around a group of targets with only bearing information, pages. 11546-11560
- Li Y., Deng F., Xie F., Robust delay-dependent H-Infinity filtering for uncertain Takagi–Sugeno fuzzy neutral stochastic time-delay systems, pages. 11561-11580
- Psillakis H.E., PI consensus error transformation for adaptive cooperative control of nonlinear multi-agent systems, pages. 11581-11604
- Kong F., Zhu Q., Wang K., Nieto J.J., Stability analysis of almost periodic solutions of discontinuous BAM neural networks with hybrid time-varying delays and D operator, pages. 11605-11637
- Wang X., Gao S., Application of matrix semi-tensor product in chaotic image encryption, pages. 11638-11667
- Li L., Lu J., Ho D.W.C., Event-based discrete-time multi-agent consensus over signed digraphs with communication delays, pages. 11668-11689
- Ding K., Zhu Q., Liu L., Extended dissipativity stabilization and synchronization of uncertain stochastic reaction-diffusion neural networks via intermittent non-fragile control, pages. 11690-11715
- Tao Y., Shi H., Song B., Tan S., Parallel supervised additive and multiplicative faults detection for nonlinear process, pages. 11716-11740

Guo S., Jiang B., Zhu F., Gao Q., State and unknown input estimations for discrete-time switched linear systems with average dwell time, pages. 11741-11759

Xie X., Li S., Xu B., Adaptive event-triggered H-Infinity fuzzy filtering for interval type-2 T-S fuzzy-model-based networked control systems with asynchronously and imperfectly matched membership functions, pages. 11760-11791

Li Y., Bo P., Qi J., Asynchronous H-Infinity fixed-order filtering for LPV switched delay systems with mode-dependent average dwell time, pages. 11792-11816

Zheng Z., Zhang H., Wang W.-Q., So H.C., Source localization using TDOA and FDOA measurements based on semidefinite programming and reformulation linearization, pages. 11817-11838

[Back to the contents](#)

4.15. IFAC Journal of Systems and Control

Contributed by: John Coca, j.coca@elsevier.com

IFAC Journal of Systems and Control

Volume 10

Papers:

Yue Liu, Zhiqiang Ge, Deep ensemble forests for industrial fault classification

Michael Gil', A common Lyapunov function for a differential inclusion with matrices having small commutators

Nagamani Gnaneswaran, Young Hoon Joo, Han Sol Kim, A linear matrix inequality-based extended dissipativity criteria for linear systems with additive time-varying delays

[Back to the contents](#)

4.16. IMA Journal of Mathematical Control and Information

Contributed by: Alex Beaumont, alex.beaumont@oup.com

IMA Journal of Mathematical Control and Information

Volume 36, Issue 3

Links to all articles in this issue are available online at:

<https://academic.oup.com/imamci/issue/36/4>

Papers:

- Practical uniform input-to-state stability of perturbed triangular systems Ines Ellouze

<https://academic.oup.com/imamci/article/36/4/1059/4852813>

- Feedback stabilization for unbounded bilinear systems using bounded control Rachid El Ayadi, Mohamed Ouzahra

<https://academic.oup.com/imamci/article/36/4/1073/4992043>

- Constrained global adaptive controller for a plug-flow tubular reactor with partial temperature measurements N Beniich, A El Bouhtouri, D Dochain

<https://academic.oup.com/imamci/article/36/4/1089/5038587>

- Optimal projection methods for model order reduction of discrete-time systems Salim Ibrir

<https://academic.oup.com/imamci/article/36/4/1105/5056402>

- Finite-time robust decentralized control for uncertain singular large-scale systems with exogenous disturbances Songlin Wo, Xiaoxin Han
<https://academic.oup.com/imamci/article/36/4/1133/5043053>
- Outer average synchronization between two coupled networks with different numbers of nodes Lihong Yan, Junmin Li
<https://academic.oup.com/imamci/article/36/4/1149/5045507>
- Observer design for one-sided Lipschitz discrete-time switched non-linear systems under asynchronous switching Maryam Nemati, Hamid Reza Koofgar, Mohammad Ataei
<https://academic.oup.com/imamci/article/36/4/1163/5046613>
- Robust decentralized stabilization for large-scale time-delay system via impulsive control Tianhu Yu, Dengqing Cao, Wenhui Huang
<https://academic.oup.com/imamci/article/36/4/1181/5048239>
- Controllability of a one-dimensional fractional heat equation: theoretical and numerical aspects Umberto Biccari, Víctor Hernández-Santamaría
<https://academic.oup.com/imamci/article/36/4/1199/5048243>
- Robust low gain output feedback sliding mode control design against actuator saturation Jeang-Lin Chang
<https://academic.oup.com/imamci/article/36/4/1237/5048236>
- Energy decay in a quasilinear system with infinite memories Muhammad I Mustafa, Mohammad Kafini
<https://academic.oup.com/imamci/article/36/4/1255/5048935>
- On the design and realization of active disturbance rejection generalized predictive control Xia Wu, Yi Li, Zengqiang Chen, Mingwei Sun
<https://academic.oup.com/imamci/article/36/4/1275/5051073>
- Stabilization for Schrödinger equation with a distributed time delay in the boundary input Haoyue Cui, Genqi Xu, Yunlan Chen
<https://academic.oup.com/imamci/article/36/4/1305/5067955>
- Robust H-Infinity control of neutral system for sampled-data dynamic positioning ships Minjie Zheng, Yujie Zhou, Shenhua Yang, Lina Li
<https://academic.oup.com/imamci/article/36/4/1325/5069579>
- Stability analysis for complicated sampled-data systems via descriptor remodelling Jun Zhou, Ketian Gao, Xinbiao Lu
<https://academic.oup.com/imamci/article/36/4/1347/5074661>
- ODE observers for DAE systems Thomas Berger, Timo Reis
<https://academic.oup.com/imamci/article/36/4/1375/5079157>
- Uniqueness of multipliers in optimal control: the missing piece Jorge A Becerril, Karla L Cortez, Javier F Rosenblueth
<https://academic.oup.com/imamci/article/36/4/1395/5089959>

[Back to the contents](#)

4.17. International Journal of Control, Automation, and Systems
Contributed by: Keum-Shik Hong, journal@ijcas.com

International Journal of Control, Automation, and Systems (IJCAS)
Vol. 18, No. 1, January 2020
ISSN: 1598-6446
<http://www.springer.com/engineering/robotics/journal/12555>

Indexed in: Science Citation Index Expanded (SciSearch), Journal Citation Reports/Science Edition, SCOPUS, INSPEC, Google Scholar, ProQuest, Academic OneFile, Current Contents/Engineering, Computing and Technology, EI-Compindex, OCLC, SCImago, Summon by Serial Solutions

Papers:

- An Automated Extracorporeal Knot-tying System Using Two Concentric Tube Robotic Arms for Deployment through a 3-mm Port, Muhammad Umar Farooq and Seong Young Ko*, pp.1-9
- Analysis of Twist Deformation in Wire-driven Continuum Surgical Robot, Daekeun Ji, Tae Hun Kang, Seongbo Shim, and Jaesung Hong*, pp.10-20
- Three Dimensional Microrobot Tracking Using Learning-Based System, Jang Pyo Bae, Siyeop Yoon, Ma-linda Vania, and Deukhee Lee*, pp.21-28
- Design and Clinical Test of a Passive Ultrasound Probe Holder Mechanism for Arterial Puncturing, Muhammad Umair Ahmad Khan and Byung-Ju Yi*, pp.29-37
- Design and Development of Light-weight Needle Control Device for Automated Tissue Sampling, Youngjin Moon, Sanghoon Park, Jongseok Won, Jun Beom Seo, and Jaesoon Choi*, pp.38-45
- Monitoring System for Diabetic Foot Ulceration Patients Using Robotic Palpation, Woonjae Choi and Bummo Ahn*, pp.46-52
- Manufacturing and Control of a Robotic Device for Time-averaged Simulated Micro and Partial Gravity of a Cell Culture Environment, Yoon Jae Kim, Min Hyuk Lim, Byoungjun Jeon, Dong Hyun Choi, Haeri Lee, Ae Jin Jeong, Min Jung Kim, Ji Won Park, Ja-Lok Ku, Seung-Yong Jeong, Sang-Kyu Ye, Youdan Kim, and Sungwan Kim*, pp.53-64
- Medical Microrobot - A Drug Delivery Capsule Endoscope with Active Locomotion and Drug Release Mechanism: Proof of Concept, Kim Tien Nguyen, Manh Cuong Hoang, Eunpyo Choi, Byungjeon Kang*, Jong-Oh Park*, and Chang-Sei Kim*, pp.65-75
- Lyapunov Based Robust Control for Tracking Control of Lower Limb Rehabilitation Robot with Uncertainty, Feifei Qin, Han Zhao, Shengchao Zhen*, Hao Sun, and Yan Zhang, pp.76-84
- Design, Modeling, and Evaluation of a Compact and Lightweight Needle End-effector with Simple Force-feedback Implementation for Robotic CT-guided Needle Interventions, Kiyoung Kim, Hyunsoo Woo, Jang Ho Cho, and Jungwook Suh*, pp.85-101
- Characterization of Spastic Ankle Flexors Based on Viscoelastic Modeling for Accurate Diagnosis, Won-Seok Shin, Handdeut Chang, Sangjoon J. Kim, and Jung Kim*, pp.102-113
- A Study on Weight Support and Balance Control Method for Assisting Squat Movement with a Wearable Robot, Angel-suit, Mingoo Jeong, Hanseung Woo, and Kyoungchul Kong*, pp.114-123
- Adaptive Neural Network Fast Fractional Sliding Mode Control of a 7-DOF Exoskeleton Robot, Mehran Rahmani* and Mohammad Habibur Rahman, pp.124-133
- Design and Test of Admittance Control with Inner Adaptive Robust Position Control for a Lower Limb Rehabilitation Robot, Zhihang Shen, Yu Zhuang, Jie Zhou, Jinwu Gao, and Rong Song*, pp.134-142
- Optimal Microneedle Design for Drug Delivery Based on Insertion Force Experiments with Variable Geometry, Bummo Ahn, pp.143-149
- Virtual Reality-Based Control of Robotic Endoscope in Laparoscopic Surgery, Yeeun Jo, Yoon Jae Kim, Minwoo Cho, Chiwon Lee, Myungjoon Kim, Hye-Min Moon, and Sungwan Kim*, pp.150-162
- Shape and Contact Force Estimation of Inserted Flexible Medical device, Hwan-Taek Ryu, Jaehong Woo, Byung-Rok So, and Byung-Ju Yi*, pp.163-174
- Medical Microrobot - Wireless Manipulation of a Drug Delivery Carrier through an External Ultrasonic

- Actuation: Preliminary Results, Han-Sol Lee, Gwangjun Go, Eunpyo Choi, Byungjeon Kang*, Jong-Oh Park*, and Chang-Sei Kim*, pp.175-185
- Utilization of $2N + 1$ Units for 2-DOF Discrete Bending Joint to Transmit Perfect Axial Rotation for Laparoscopic Instruments, Jungwook Suh, pp.186-195
 - A Robotic Gait Training System with Stair-climbing Mode Based on a Unique Exoskeleton Structure with Active Foot Plates, EunKyung Bae, Sang-Eun Park, Youngjin Moon, In Taek Chun, Min Ho Chun*, and Jaesoon Choi*, pp.196-205
 - Real-time Depth Estimation Using Recurrent CNN with Sparse Depth Cues for SLAM System, Sang Jun Lee, Heeyoul Choi, and Sung Soo Hwang*, pp.206-216
 - Active Balancing Control for Unmanned Bicycle Using Scissored-Pair Control Moment Gyroscope, Sang-Hyung Park and Soo-Yeong Yi*, pp.217-224
 - 3D Object Global Localization Using Particle Filter with Back Projectionbased Sampling on Saliency, Alongkorn Pirayawaraporn, Nachaya Chindakham, Ji-Yong Lee, and Mun-Ho Jeong*, pp.225-235
 - Optimal LQG Control for Networked Control Systems with Remote and Local Controllers, Xiao Liang, Juanjuan Xu, Xiao Lu*, Qingyuan Qi*, Haixia Wang, Rong Gao, pp.236-244
 - Model-free Optimal Tracking Control for an Aircraft Skin Inspection Robot with Constrained-input and Input Time-delay via Integral Reinforcement Learning, Xuwei Wu and Congqing Wang*, pp.245-257

[Back to the contents](#)

4.18. CFP: IEEE/ASME Transactions on Mechatronics

Contributed by: Xiang Chen, xchen@uwindsor.ca

Call for Papers: IEEE/ASME Transactions on Mechatronics with 2020 IEEE/ASME AIM Presentation

Concurrent submissions are called for IEEE/ASME Transactions on Mechatronics (TMech) with IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM 2020) Presentation. All topics are welcome within the scopes of TMech: www.ieee-asme-mechatronics.org and AIM 2020: aim2020.org.

As the flagship conference focusing on mechatronics and intelligent systems and associated with IEEE/ASME Transactions on Mechatronics (TMech), AIM 2020 brings together the international community of experts to discuss the state-of-the-art, new research results, perspectives of future developments, and innovative applications relevant to mechatronics, robotics, automation, industrial electronics, and related areas. IEEE/ASME TMech is a bimonthly periodical that presents the state of the art, recent advances, and practical applications of mechatronics. This TMech/AIM 2020 concurrent submission opportunity integrates timely peer-reviewed journal publication with conference dissemination at the charming and historic Boston city, Massachusetts, USA, to expand awareness of your research and to foster broader impacts of the field of mechatronics.

Both regular and short papers are solicited. The submitted paper should be no more than 8 TMech published manuscript pages, excluding photos and bios of authors. The submissions will be subject to a normal peer review process in the standard of TMech. A Regular Issue of TMech will be dedicated to publishing all accepted and presented papers in October 2020. As the concurrent submission, the decision for the submitted paper, upon the completed review process in which only one round of major/minor revision is allowed, falls into one of the following two categories:

1. Accepted for publication in TMech. In this case, the paper will be accepted by AIM 2020 concurrently for presentation and the basic information (abstract, author names and affiliations, etc.) of the accepted paper will be submitted to AIM 2020. The final publication in the dedicated Regular Issue of TMech, however, will be subject to the presentation of the paper in AIM 2020 with paid registration fee.
2. Rejected for publication in TMech. In this case, the paper, as well as all review comments, will be forwarded to the Program Committee of AIM 2020 for further consideration. A final acceptance/rejection decision will then be made by the Committee for AIM 2020.

Detailed information and description, including Q&A discussion, about this Call for Paper for TMech with AIM Presentation can be found online at TMech: <http://www.ieee-asme-mechatronics.org/> and AIM 2020: <http://aim2020.org/contribute/tmech/>

Manuscript preparation: Papers must contain original contributions and be prepared in accordance with the journal standards. Instructions for authors are available online on the TMech website.

Manuscript submission: The submission websites for TMech and AIM 2020 are open now. Manuscripts should be submitted to TMech online at: mc.manuscriptcentral.com/tmech-ieee, selecting 'AIM Concurrent Paper'. The cover letter should include the following statement: "This paper is concurrently submitted for TMech and AIM 2020 Presentation". The basic information (abstract, author names and affiliations) of the paper should be submitted concurrently to AIM 2020 online at: ras.papercept.net/conferences/scripts/start.pl.

Submission/Review/Decision Timeline:

First Submission for TMech: January 8, 2020 (firm)

Basic Paper Information due for AIM 2020: January 8, 2020

First Decision for TMech: March 6, 2020

Revised Submission for TMech: March 26, 2020

Final Decision for TMech and AIM 2020: May 1, 2020

Final Paper Information due for AIM 2020: May 15, 2020

Final Submission for TMech: May 15, 2020

For any questions related to this Call for Paper, please contact:

Xiang Chen, xchen@uwindsor.ca, Senior Editor of TMech/General co-Chair for AIM 2020,

Xiaobo Tan, xbtan@egr.msu.edu, Senior Editor of TMech/Program Chair for AIM 2020

[Back to the contents](#)

5 Conferences and Workshops

5.1. Submission to IEEE Control Systems Letters with CDC Option

Contributed by: Francesca Bettini, bettini@dei.unipd.it

Submission to IEEE Control Systems Letters with CDC (2020) option starting January 6, 2020, is possible

As for the years 2017, 2018 and 2019, also this year the IEEE Control Systems Letters (L-CSS) offers the opportunity for authors to not only publish a paper in the journal but also to present the same paper at the flagship conference of the IEEE Control Systems Society: the IEEE Conference on Decision and Control (CDC).

The joint submission to IEEE Control Systems Letters and CDC 2019 will be possible from January 6 to March 3, 2020.

Manuscripts submitted to the L-CSS with the CDC option will undergo a regular review as papers submitted to the Letters (so they should be submitted only to the L-CSS and not to the CDC). At the end of the first round of review, the reviews and the Associate Editor's report will be forwarded to the CDC Program Committee, which will use them to decide on the inclusion of these manuscripts in the program of the Conference. After the first cycle of review, the decisions about the acceptance or rejection of the manuscript for the L-CSS and for the CDC will be independent of each other. In particular, reviews and reports collected during a possible second round of review will not be forwarded to the CDC Program Committee.

Note that you can submit your paper through the Letters also if the paper will be part of an Invited Session at CDC 2020. In that case you should select "L-CSS and CDC Invited Session", as submission type.

For more information about joint submission to L-CSS and CDC see, specifically, [this link](#) section "L-CSS and CDC."

For more information about the L-CSS, please check the website at <http://iee-cssletters.dei.unipd.it/index.html>.

[Back to the contents](#)

5.2. Conference on Methods and Models in Automation and Robotics, Poland

Contributed by: Pawel Dworak, pawel.dworak@zut.edu.pl

25th International Conference on Methods and Models in Automation and Robotics

24-27 August 2020

Amber Baltic Hotel, Miedzyzdroje, Poland

It is our great pleasure to invite You to participate in the 25th International Conference on Methods and Models in Automation and Robotics, MMAR 2020 to be held in Miedzyzdroje, Poland, from August 24th to August 27th, 2020.

The Conference will be a good opportunity for highlighting the new results and directions of Automatic Control theory, technology and applications. As such, it mainly will concentrate on the following key points:

- emphasis on invited lectures including plenaries,
- industry participation promotion,
- attract young people to study and work in the field.

The participants of the 25th International MMAR Conference will have the opportunity to take part in the wide spectrum of categories for technical presentations, including plenary lectures, regular papers of both lecture and poster session types, and panel discussion. We look forward to seeing our old and new friends in Poland. You are kindly invited to participate in the 25th International MMAR Conference in Miedzydroje, Poland.

Topics of interest include, but are not limited to:

- Identification, modelling and simulation
- Signal processing
- Control and systems theory
- Robotics
- Intelligent systems and methods
- Control systems

The proceedings of the conference will be submitted for review and approval for inclusion in the IEEE Xplore® Digital Library and will be submitted for inclusion in the Conference Proceedings Citation Index - Science (ISI Web of Science).

Key Dates

March 2, 2020 - Paper submission

May 18, 2020 - Notification of acceptance

June 22, 2020 - Registration

June 22, 2020 - Camera-ready paper submission

For more information see <http://www.mmar.edu.pl>

[Back to the contents](#)

5.3. Conference on Unmanned Aircraft Systems, Greece

Contributed by: Youmin Zhang, Youmin.Zhang@concordia.ca

Call-for-Papers: 2020 International Conference on Unmanned Aircraft Systems (ICUAS'20), Athens, Greece, June 9-12, 2020 (<http://www.uasconferences.com>)

On behalf of the Organizing Committee and the ICUAS Association, it is our pleasure to invite you to contribute to and participate in the 2020 International Conference on Unmanned Aircraft Systems, ICUAS'20, which will be held for the first time outside the U.S., in Athens, Greece, on June 9-12, 2020, at the luxurious Divani Caravel Hotel (<http://divanicaravelhotel.com>). This annual conference has grown tremendously; it has earned the respect of the professional community and it is constantly co-sponsored technically by the

IEEE CSS and RAS and the Mediterranean Control Association. The conference is fully sponsored by the ICUAS Association. Following the usual tradition, the conference will be preceded by one day of tutorials and workshops, followed by three full-days of technical sessions. In 2020, we will introduce 'poster papers' again, which will go under the same thorough review process, but will report on new ideas with only preliminary results. Keynote lectures, panel discussions and a social agenda will complement and complete the four-day event.

Conference topics include (but not limited to): Airspace Control; Integration; Sense-Detect-and-Avoid Systems; Airspace Management; Interoperability; Security; Airworthiness; Levels of Safety; Sensor Fusion; Autonomy; Manned/Unmanned Aviation; Smart Sensors; Biologically Inspired UAS; Micro- and Mini- UAS; Standardization; Certification; Networked UAS; Technology Challenges; Control Architectures; Payloads; Training; Energy Efficient UAS; Path Planning and Navigation; UAS Applications; Environmental Issues; Regulations; UAS Communications; Fail-Safe Systems; Reliability of UAS; UAS Testbeds; Frequency Management; Risk Analysis; UAS Transportation Management (UTM); Policy/Regulation/Law Aspects. The major themes of ICUAS '20 are: integration of manned-unmanned aviation into the national airspace, legal, ethical and privacy issues, regulations, benefits of unmanned aviation to society, UAS/RPAS design for safety, reliability and resilience, and technology standards.

Through Keynote addresses, round table panel discussions and presentations, it is expected that the outcome of the Conference will be a clear understanding of what industry, military, civilian, national/international authorities need, and what are the crucial next steps that need to be completed before UAS are utilized in everyday life applications.

IMPORTANT DATES (Please check the latest information at <http://www.uasconferences.com>)

February 14, 2020: Full Papers/ Invited Papers/Tutorial Proposals Due

April 15, 2020: Acceptance/Rejection Notification

May 8, 2020: Upload Final, Camera Ready Papers

April 15 - May 8, 2020: Early Registration

PAPER SUBMISSION: All papers must be submitted and uploaded electronically.

Go to <https://controls.papercept.net>. Click on the link "Submit a Contribution to ICUAS'20" and follow the steps. The paper format must follow IEEE paper submission rules, two-column format using 10 point fonts, Times New Roman. The maximum number of pages per submitted paper is 10. For accepted papers, up to two additional pages will be permitted for a charge of \$100 per additional page. Illustrations and references are included in the page count. Invited and Special Sessions: Proposals for invited/special sessions must be submitted/uploaded electronically. A Summary Statement describing the motivation and relevance of the proposed session, invited paper titles and author names must be uploaded electronically by February 14, 2020. In addition, authors must submit FULL versions of invited papers electronically, through <https://controls.papercept.net>. Each paper must be marked as 'Invited Session Paper'. Workshops/Tutorials: Proposals for workshops/tutorials should contain title, the list of speakers, and extended summaries (2000 words) of their presentations. Proposals must be sent by e-mail to the Tutorial/ Workshop Chair by February 14, 2020. Paper Review Process: All submitted papers will undergo a peer review process coordinated by the Program Chairs, Advisory Committee Members, IPC members and qualified reviewers. Authors will be notified of results at the latest by April 15, 2020. Accepted papers must be uploaded electronically no later than May 8, 2020. Authors are encouraged to accompany their presentations

with multimedia material, which will be included in the Conference Digital Proceedings. Conference Proceedings will be acquired by IEEE and they appear in IEEE Xplore.

Welcome and look forward to receiving your contributions and attendance to the ICUAS'20! For detailed information please see www.uasconferences.com.

ICUAS ASSOCIATION LIAISON CHAIR

Kimon P. Valavanis, Univ. of Denver, kimon.valavanis@du.edu

HONORARY CHAIRS

Didier Theilliol, University of Lorraine

Fulvia Quagliotti, Politecnico di Torino

GENERAL CHAIRS

Youmin Zhang, Concordia University

Anthony Tzes, NYU Abu Dhabi

PROGRAM CHAIRS

Antonio Franchi, CNRS-LAAS

Kostas Alexis, University of Nevada, Reno

[Back to the contents](#)

5.4. Mathematical Problems in Engineering and Aerospace, Czech Republic

Contributed by: Seenith Sivasundaram, seenithi@gmail.com

World Congress: Mathematical Problems in Engineering, Aerospace, and Sciences

When: Date: June 23-26, 2020

Where: Location: Czech Technical University in Prague, Prague, Czech Republic

Website: <http://www.icnpaa.com>

<http://www.icnpaa.com/index.php/icnpaa/ICNPAA2020>

ICNPAA's AIM: Mathematical Problems in Engineering, Aerospace, and Science have stimulated cooperation among scientists from a variety of disciplines. Developments in computer technology have additionally allowed for solutions to mathematical problems. This international forum will extend scholarly cooperation and collaboration, encouraging the dissemination of ideas and information. The conference will have a pool of active researchers, with a proper balance between academia and industry, as well as between senior and junior researchers, including graduate students and post-doctoral fellows. It is anticipated that such a balance will provide both senior and junior researchers an opportunity to interact and to have a wider picture of recent advances in their respective fields. The conference, especially, enables the setting up of new interdisciplinary research directions among its participants by establishing links with world-renowned researchers, making possible joint international projects that will no doubt bring about fresh and innovative ideas and technologies in engineering, aerospace, and sciences.

Co-Sponsored by: AIAA: American Institute of Aeronautics and Astronautics

IFIP: International Federation of Information Processing
CTU: Czech Technical University in Prague, Prague, Czech Republic.

The proceedings will be published by the American Institute of Physics.

AIP Conference Proceedings are indexed in:

- Astrophysics Data System(ADS)
- Chemical Abstracts Service (CAS)
- Crossref
- EBSCO Publishing
- Electronic Library Information Navigator (ELIN), Sweden
- Elsevier – SCOPUS
- International Atomic Energy Agency (IAEA)
- Thomson Reuters (ISI)

[Back to the contents](#)

5.5. Polish Control Conference PCC2020, Poland

Contributed by: Andrzej Bartoszewicz, andrzej.bartoszewicz@p.lodz.pl

Call-for-Papers: Polish Control Conference PCC2020

<https://www.kka.p.lodz.pl/>

On behalf of the Organizing Committee, it is our pleasure to invite you to contribute to and participate in the 2020 Polish Control Conference, which will be held in Lodz, Poland, on June 22-24, 2020.

Conference topics include (but are not limited to):

1. Modelling, identification, and analysis of automation systems.
2. Design of control systems.
3. Calculation methods, data processing and communication in control.
4. Mechatronics and robotics.
5. Automated manufacturing systems.
6. Industrial systems.
7. Transportation and vehicle systems.
8. Biological, medical and ecological systems.
9. Control of social systems.
10. Social impact of automation.

Important dates:

Paper submission - January 20, 2020

Acceptance/Rejection notification - March 20, 2020

Upload of final, camera ready papers - April 10, 2020

All papers must be submitted electronically via EasyChair system

<https://easychair.org/conferences/?conf=kkapcc2020>

Further details can be found at <https://bit.ly/35PfVbh>

We are looking forward to meeting you at the Polish Control Conference 2020 in Lodz.

[Back to the contents](#)

5.6. Conference on Control, Automation and Systems, South Korea

Contributed by: Zee Yeon Lee, conference@icross.org

2020 The 20th International Conference on Control, Automation and Systems (ICCAS 2020)

October 13–16, 2020, BEXCO, Busan, Korea

<http://2020.iccas.org>

The aim of the ICCAS is to bring together researchers and engineers worldwide to present their latest works, and disseminate the state-of-the-art technologies related to control, automation, robotics, and systems.

Paper Submission: The conference invites three types of submission: "Regular Paper", "Research Poster Paper", and "Organized (Invited) Session/Mini-symposium Paper".

Indexed in: IEEE Xplore, EI compendex, and SCOPUS

General Chair: Duk Hyun Kang (RS Automation, Korea)

General Co-Chair: Kyung-Soo Kim (KAIST, Korea)

Program Co-Chairs: Hyo-Sung Ahn (GIST, Korea), Hyungbo Shim (Seoul National Univ., Korea)

Organized by Institute of Control, Robotics and Systems (ICROS)

[Back to the contents](#)

5.7. Workshop on Nonlinear System Identification Benchmarks, The Netherlands

Contributed by: Maarten Schoukens, m.schoukens@tue.nl

5th Workshop on Nonlinear System Identification Benchmarks

We are pleased to invite you to the 5th Edition of the Workshop on Nonlinear System Identification Benchmarks held at the Eindhoven University of Technology, The Netherlands, 20-22 April 2020

(<http://www.nonlinearbenchmark.org/benchmarkWorkshop.html>). The workshop is preceded by a doctoral course on nonlinear system identification, 14-17 April 2020

<http://www.nonlinearbenchmark.org/benchmarkCourse.html>

This year again, the workshop is building upon its basic ingredients: - It stands as a forum facilitating the exchange of ideas and knowledge between the control, machine learning, and mechanical communities.

- A selection of renowned keynote speakers from the same 3 communities and beyond are invited to share their views on the future trends in nonlinear system identification with the audience. The list of keynote speakers will be announced through the workshop website.

- Attendees are challenged to apply their favorite system identification tool to a carefully established list of benchmark systems. Today, 10 different datasets are featured, addressing a wide range of state-of-the-art challenges in the field with various levels of difficulties.

- A 4-day course on nonlinear system identification precedes the workshop (14-17 April 2020).

The workshop is open to both presenting and non-presenting participants. Visit www.nonlinearbenchmark.org to get full information about the workshop!

Important dates:

- Registration deadline: February 01, 2020, [register here](#)
- Abstract submission deadline: March 15, 2020 - [1-page abstract template available here](#)
- Notification of acceptance: March 22, 2020

We are very much looking forward to welcoming you in Eindhoven next April.

[Back to the contents](#)

5.8. Workshop: Introduction to Quantum Systems and Feedback Control, USA

Contributed by: Reza Moheimani, Reza.Moheimani@utdallas.edu

Tutorial Workshop: Introduction to Quantum Systems and Coherent Quantum Feedback Control

Date & Venue: Thursday March 19, 2020, 9:00am-3:00pm, Jonsson School of Engineering & Computer Science, University of Texas at Dallas

Speaker: Professor Ian Petersen (Australian National University)

Registration: Registration is free, but seats are limited. A link for registration is available at:

<https://engineering.utdallas.edu/engage/events/introduction-to-quantum-systems-and-coherent-quantum-feedback-control/>

Target Audience: Grad Students and Professors with a background in control theory wishing to learn something about quantum control.

Main topics covered: Open Quantum Systems, Linear quantum system models in the Heisenberg picture of quantum mechanics, Schrodinger picture Master equation models, Quantum Stochastic Differential equation models of finite level open quantum systems, Measurement feedback H_∞ control of linear quantum systems, Physical Realizability for linear quantum systems and finite level quantum systems, Coherent Quantum H_∞ control of linear quantum systems, Coherent Quantum LQG control, suboptimal and optimization based approaches to coherent quantum LQG control, Robust Stability of Nonlinear Quantum Systems, The structure of linear quantum systems and the quantum Kalman decomposition, The structure of two level open quantum systems, Quantum risk sensitive cost functions, measurement based quantum risk sensitive control. Phase insensitive quantum amplifiers, non-reciprocal phase insensitive quantum amplifiers.

Note: This event will be followed by a two-day workshop on Atomically Precise Fabrication of Solid-State Quantum Devices. More information available on: <https://engineering.utdallas.edu/quantum-workshop/>

[Back to the contents](#)

6 Positions

6.1. PhD: City University of Hong Kong, Hong Kong

Contributed by: Ehsan Nekouei, enekouei@cityu.edu.hk

PhD position at the Department of Electrical Engineering, City University of Hong Kong.

Description: In this project, we will study the privacy level of human users in networked control systems, e.g., intelligent transportation networks and smart buildings, wherein sensor measurements are accessible by untrusted parties. We will also develop design methodologies to ensure the privacy of users within these systems, based on dynamic programming and reinforcement learning (RL) techniques.

International applicants will be considered for the Hong Kong Ph.D. fellowship scheme which provides an annual stipend of HK\$309,600 (approximately US\$39,700) and a conference and a research-related travel allowance of HK\$12,900 (approximately US\$1,700) per year for each awardee for a period up to three years. <https://cerg1.ugc.edu.hk/hkpfs/index.html>

Requirements:

1. An undergraduate or a master degree from an internationally recognized university
2. Strong background in probability theory and control systems
3. Good programming skills
4. A background in dynamic programming and optimal control is a plus

Contact: Please send the following documents to enekouei@cityu.edu.hk and indicate in the subject "Ph.D. Application"

1. Your CV
2. One-page research statement and motivation
3. A copy of your transcripts.

[Back to the contents](#)

6.2. PhD: University of Nebraska-Lincoln, USA

Contributed by: piyush grover, piyush.grover@unl.edu

Applications are invited for Ph.D. positions in the <http://engineering.unl.edu/dsl/> Dynamical Systems Lab at the University of Nebraska-Lincoln. DSL focusses on developing analysis, control and optimization methods for nonlinear dynamical systems, and their application to several areas including large-scale multi-agent robotics, fluid mechanics, structural mechanics/nonlinear vibration and astrodynamics.

Competitive applicants will have Bachelor's or Master's degree in Engineering, Physics or Applied Math, with a strong background in mathematics and computation.

There are two open positions:

- 1). Large-scale multi-agent control using ideas from continuum/fluid mechanics.
- 2). Dynamics and control of microfluidic and active fluid systems

About UNL and MME: University of Nebraska-Lincoln, a member of the 'Big-Ten', is the flagship land grant university of Nebraska. UNL is classified within the Carnegie "R1-Doctoral Universities: Highest Research Activity" category. The MME department has a vibrant and growing program in both dynamical systems and fluid mechanics.

[Back to the contents](#)

6.3. PhD: University of Leicester, UK

Contributed by: Andrea Lecchini-Visintini, alv1@leicester.ac.uk

PhD: Impact MRC Studentship, University of Leicester, UK

Impact MRC Studentship: Brain Tissue Pulsations: modelling and machine learning methods for the detection of raised intracranial pressure in adult intensive care.

Supervisors: Dr Emma Chung, Department of Cardiovascular Sciences, University of Leicester, Dr Andrea Lecchini-Visintini, Department of Engineering, University of Leicester, Professor Stuart Smith, Queen's Medical Centre, University of Nottingham,

Raised Intracranial Pressure (ICP) can occur in patients with bleeding or swelling of the brain in a number of brain pathologies such as head trauma, stroke, intracranial tumours and cerebral oedema. Raised ICP, if untreated, can lead to devastating brain damage. Prompt recognition and treatment is of paramount importance, but current monitoring methods require neurosurgical insertion of a device beneath the skull, which is extremely invasive.

This PhD project aims to develop criteria for the detection of raised ICP, based on non-invasive ultrasound measurements of brain tissue pulsations, for automated detection and monitoring of brain swelling. The methodology adopted in the project combines cerebral blood flow regulation modelling with machine learning methods. The project will support the development of a clinical ultrasound portable prototype being pioneered at Leicester, together with our industry partner (Nihon Kohden), for the rapid assessment of brain injury, and is expected to generate high impact biomedical engineering and clinical publications.

The ideal candidate will have a degree in Engineering, Physics, or Applied Mathematics and an interest in physiological modelling and machine learning methods.

Further details and application forms can be found at:
<https://more.bham.ac.uk/mrc-impact/phd-opportunities/>

Should you have further questions, please feel free to contact Dr Andrea Lecchini-Visintini at alv1@leicester.ac.uk

[Back to the contents](#)

6.4. PhD: George Washington University, USA

Contributed by: Peng Wei, pwei@gwu.edu

Two PhD positions at George Washington University (Washington DC)

Peng Wei is an assistant professor in George Washington University Mechanical and Aerospace Engineering Department. By contributing to the intersection of control, optimization, machine learning, and artificial intelligence, he develops autonomy and human-in-the-loop decision support tools for aeronautics, aviation and aerial robotics. His current focus is on safety, efficiency, and scalability for decision making systems in complex, uncertain and dynamic environments. Recent applications include: Air Traffic Control/Management (ATC/M), Airline Operations, UAS Traffic Management (UTM), eVTOL Urban Air Mobility (UAM) and Autonomous Drone Racing (ADR). Prof. Wei is leading the Intelligent Aerospace Systems Lab (IASL). He is an associate editor of AIAA Journal of Aerospace Information Systems. He received Ph.D. degree in Aerospace Engineering from Purdue University in 2013 and B.S. degree in Automation from Tsinghua University in 2007.

There will be two PhD positions in Prof. Peng Wei's group starting from Fall 2020. Motivated students with excellent mathematical background, strong programming skills, and aviation/aeronautics passion are encouraged to apply, including but not limited to a background in applied mathematics, control theory, optimization and operations research, robotics, or reinforcement learning.

[Back to the contents](#)

6.5. PhD: KU Leuven, Belgium

Contributed by: Jan Swevers, jan.swevers@kuleuven.be

Funded Ph.D. Position at the KULeuven Department Mechanical Engineering (Belgium) on integrated identification and control for mechatronic systems.

The system identification and control community are largely disconnected, and hence model characteristics important in control design (e.g. model structures appropriate for certain control approaches, accuracy in a specific frequency domain, model simplicity, model uncertainty bounds) are not considered by most identification approaches. In order to cope with the high complexity (Multi-Input, Multi-Output (MIMO); non-linearity; constrained actuators; uncertainties ...) of industrial mechatronic systems, control design and system identification need to be more integrated: system identification and model structure selection must be oriented towards later control development, relation between control performance and model accuracy needs to be understood better, assessment of control performance needs to be traced back to controller type selection and/or model improvement.

In this research you will develop a methodology and software that allows for an integrated system identification and controller approach. This software supports the iterative controller development process in which:

- suitability and quality of models and controllers will be assessed as well as their mutual fit,
- model structures will be selected and models identified, and
- controller structures selected and model-based controllers developed.

In this iterative process, choices will be made on how to improve the control design or the model for the controller.

More specifically, you will work on techniques to assess closed-form controllers and MPC-like controllers and determine the key tuning parameters that affect their performance and robustness. Key technology of this assessment is parametric optimization. To support the assessment of MPC-like controllers, you will also develop a user-friendly software tool to quickly and semi-automatically set up an MPC-like controller. This tool will be based on existing solvers and relying on CasADi (www.casadi.org), integrating all steps with minimal human intervention. You will be working together with another PhD candidate focusing more on system identification. Implementation and validation of controllers and experimental validation of developed software on mechatronic lab systems are part of the job.

You will be embedded in the MECO (Motion Estimation Control and Optimization) research team of the KU Leuven Department of Mechanical Engineering. The MECO team focusses on the identification, analysis and control of mechatronic systems such as autonomous guided vehicles, robots, and machine tools. It combines theoretical innovations with experimental validations. The theoretical research benefits from the team's expertise on numerical optimization, while MECO's practical knowhow and industrial collaboration are supported by its participation as part of the DMMS core lab in Flanders Make - the strategic research center for the manufacturing industry in Flanders.

Ideal candidates hold a Master's degree in mechanical, control or electrical engineering, or computer science. Successful candidates are typically ranked at or near the top of their classes, have a solid background in optimization, systems and control, relevant computer programming skills (Python or Matlab, C++), and enthusiasm for experimental work and controller implementations and validations on mechatronic systems. Team player mentality, independence, and problem solving attitude are expected, and proficiency in English is a requirement.

Applicants whose mother tongue is neither Dutch nor English must present an official language test report. The acceptable tests are TOEFL, IELTS, and Cambridge Certificate in Advanced English (CAE) or Cambridge Certificate of Proficiency in English (CPE). Required minimum scores are:

- TOEFL: 600 (paper-based test), 100 (internet-based test);
- IELTS: 7 (only Academic IELTS test accepted);

A fully funded PhD position in an international context for four years at the KULeuven: a top European university and a hub for interdisciplinary research in the fields of systems, control and optimization. You will be embedded in the MECO research team of the Department of Mechanical Engineering. The doctoral candidate will work in world-class facilities with highly qualified experts, and will benefit from the training scheme developed based on the expertise of academic and industrial partners. A start date in the course of 2020 is to be agreed upon.

To apply, visit our website and follow this link:

<https://www.mech.kuleuven.be/en/pma/research/meco/vacancies>

[Back to the contents](#)

6.6. PhD: Tel Aviv University, Israel

Contributed by: George Weiss, gweiss@eng.tau.ac.il

PhD position in modelling & control of switched power converters and power grids at Tel Aviv University

The School of Electrical Engineering at Tel Aviv University in Israel is looking for a PhD student, employed as Early Stage Researchers (ESR) in the fields of power system modelling, control and power electronics, with emphasis on the control of switched power converters as part of a power grid. The ESR will work in Prof. George Weiss' group.

This position is one of the 15 positions available within the WinGrid network, sponsored by the EU under the Marie Skłodowska-Curie actions in the H2020-MSCA-ITN Program (Marie Skłodowska-Curie Grant Agreement Number 861398). The WinGrid consortium will train the next generation of researchers on future power system integration issues associated with large-scale deployment of wind generation, focusing on the modelling and control aspects of wind turbine design, and the system stability issues and supervisory structures required for robust implementation.

WinGrid consortium academics are located in Denmark (Aalborg University and the Technical University of Denmark), in the UK (University of Warwick, Imperial College London), Germany (Christian-Albrechts-Universität zu Kiel), Israel (Tel Aviv University) and Ireland (University College Dublin). We have 9 prestigious industry partners who will be hosting the ESRs for secondments, mostly from Europe.

The successful candidate will receive a three year financial package, in accordance with the European Commission rules for ESRs, consisting of:

1. Monthly living allowance + Monthly mobility allowance (gross, before applicable personal deductions and taxes) – around €2,800;
2. For those eligible to Monthly family allowance as well – around €3,200;
3. Visits to partner universities and/or industrial partners will be covered separately by the grant;
4. Three (3) secondments with project partners, out of which one in industry.

Applicants should hold a MSc in Control Engineering, Electrical Engineering, Power Electronics, Applied Mathematics or closely related fields and have basic knowledge in control theory, power electronics and partial differential equations.

Applicants must comply with the European Commission, Horizon 2020 Guidelines mobility rules. In particular, they must not have performed their main activity in Israel for more than 12 months of the 36 months preceding the position.

Early-Stage Researchers must be in the first four years (full-time equivalent) of their research careers, starting at the date of obtaining the degree which would formally entitle them to embark on a doctorate.

Application procedure: send your CV (pdf format), list of grades, certificates, list of 3 referees and motivation letter to Prof. George Weiss, gweiss@eng.tau.ac.il, with cc to Brigitte Shalom, brigitte@tauex.tau.ac.il.

The selected candidates will be invited for an interview, via Skype or phone. Questions can be addressed to: Prof. George Weiss, gweiss@eng.tau.ac.il.

Tentative starting date: April 1, 2018.

About Tel Aviv University (TAU): TAU fosters and encourages the spirit of research, innovation and entrepreneurship among its students, researchers and alumni.

- TAU is a Reuters “Top 100 Innovation University”.
- TAU ranks 8th in the world for graduates that established “unicorn” companies worth \$1 billion or more (Sage 2017). TAU is the only non-U.S. university to make the top 10.
- TAU ranks 26th in the world for citation impact per faculty member in the 2017 QS rankings.
- TAU ranks 75th in the world by the number of research publications and the number of publications in the most prestigious journals (2017 Leiden Ranking)

TAU ranks 5th in winning European Research Council (ERC) grants among 172 leading European research institutions.

[Back to the contents](#)

6.7. PhD: Technical University of Munich, Germany

Contributed by: Matthias Althoff, althoff@in.tum.de

PhD Position for Safe Human-Robot Interaction at TUM

The Research Group Cyber-Physical Systems of Prof. Matthias Althoff at the Technical University of Munich offers a PhD position for Safe Human-Robot Interaction. The offered position has a strong focus on motion planning of robots and formal verification. The Technical University of Munich is one of the top research universities in Europe. The university fosters a strong entrepreneurial spirit and international culture that places it at the forefront of research in a diversity of disciplines.

More information can be found at <https://bit.ly/2ZaZa81>

[Back to the contents](#)

6.8. PhD: Østfold University College, Norway

Contributed by: Maben Rabi, maben.rabi@hiof.no

PhD student position on Sensing, Control and Testing in a Warning system for Slippery road conditions

There will be a fully funded PhD student position that shall start in early 2020 and last for three years. This shall be within the CriSp project, which is funded by both Østfold University College and the Research council of Norway. The project shall develop a warning system for slippery conditions on roads, by calculating and communicating a critical speed that shall vary with road conditions. We shall continuously estimate the critical speed, by collecting sensor data related to friction and skidding, from those vehicles that recently passed through the given road section, and then processing this aggregate data in real-time.

The research of the PhD student shall involve: (i) sensor data processing and sensor fusion algorithms to better detect skidding of vehicles, (ii) adjusting automatic cruise control algorithms, (iii) building a prototype mobile robotic test platform, and (iv) testing using the prototype platform and also using real vehicles at purpose-built test tracks. This work shall be in cooperation with the project’s other partners: SimulaMet,

Volvo cars, Asta Zero, Tracsense, Western Norway University of Applied Sciences, and the Institute for Transport Economics Oslo.

Essential Criteria:

- Master's degree (equivalent to 120 credits according to Norwegian standard definitions) in Computer science, Control systems, Embedded systems, Machine learning, Mechatronics or similar relevant field
- The average grade for courses in the Master's degree must be B or better, in terms of the Norwegian grading scale
- The average grade for courses in the Bachelor's degree must be C or better, in terms of the Norwegian grading scale
- Solid programming competence in C, C++, Python, Java or an equivalent language
- Competence in basic Robotics / Mechatronics / Embedded systems
- Fluent oral and written communication skills in English. For international candidates (outside of EU/EEA area), the required proficiency proof is one of: (i) a TOEFL score that is at least 90 points for the internet based test, or at least 600 points for the paper based test, (ii) an IELTS score that is at least 6.5, (iii) a score of at least 62 on the Pearson Test of English Academic, or (iv) at least one of the following Cambridge ESOL certificates: First Certificate in English, Certificate in Advanced English, Certificate of Proficiency in English.

The following merits shall be advantageous

- Experience working with mobile robots
- Fluency in modelling Mechanical systems
- Understanding of algorithms for State estimation, and Control
- Understanding of Real-time systems

About the research group, and the application process:

This position is at the Cyber-physical systems group at Østfold University College. In this group we study Real-time systems, Wireless sensor networks, Networked control, Hybrid systems, Modelling and Simulation etc. And our application areas include: Robotics, Production technology, Building automation, Energy efficiency, Connected and intelligent transportation systems, Cloud services etc, For more information this research group please visit:

<https://www.hiof.no/it/english/research/groups/cyber-physical-systems/index.html>

Østfold University College is located in at Halden, Norway. For more information please visit:

<https://www.hiof.no/english/about/>

This position is subject to approval from the administration of the University College. If this approval is given, then there shall be a web-based official announcement and application portal at:

<https://www.hiof.no/english/about/vacant-positions/>

If approved, the official announcement shall appear sometime after the middle of January and the application deadline shall be about four to five weeks after the date of the official announcement. If you have any questions, then please send an email to Maben Rabi.

[Back to the contents](#)

6.9. PhD: Luleå University of Technology, Sweden

Contributed by: George Nikolakopoulos, geonik@ltu.se

Phd Positions in Aerial Robotics

The Robotics Team at the Department of Computer Science and Electrical and Space Engineering at Luleå University of Technology is now looking for 2 PhD Students contributing to our growing activities in Aerial Robotics. The group is heavily involved in a large amount of National and European research grants in this area spanning from UAVs, UGVs, Space Exploration and Biologically inspired Robotics.

The positions will involve dense research activities in the following areas

- Design, Development and Control of Collaborative aerial and ground agents
- Collaborative formation and scenario accomplishment
- Collaborative Vision for robotics
- Decentralized Task execution and overall mission planning
- Visual Servoing
- Deep Learning for Autonomy and Adaptation
- Aerial Vision
- Networked Control
- Switching Reconfigurable Control
- Collaborative Mapping and Exploration
- Field Robotics
- Reinforcement Learning for task replication

Tasks: The candidates will perform research with substantial experimental components that should be published in peer-reviewed international journals and at major conferences. The position will include supervision of MSc students, Teaching Assistant tasks and support in acquire funding for future research projects from research funding agencies/councils, EU framework program or industry.

For further information please contact Professor George Nikolakopoulos +46 920 491298, geonik@ltu.se

For more information please visit:

- <https://www.ltu.se/ltu/Lediga-jobb/test-script?l=en>

[Back to the contents](#)

6.10. PhD: The University of Texas at San Antonio, USA

Contributed by: Ahmad F. Taha, ahmad.taha@utsa.edu

I have two PhD positions for Fall 2020 in optimization and control of dynamic networks with applications to transportation systems, water distribution networks, and smart power grids at the ECE Department, University of Texas at San Antonio (UTSA). The ECE department at UTSA hosts the largest PhD program in terms of the number of PhD students, and the department has 30+ faculty in various engineering disciplines, with six faculty in systems and controls.

Interested applicants should have **all** of the following qualifications:

- a master's degree in engineering, applied mathematics, or related fields;
- strong background in optimization, linear systems theory, and machine learning (basic)
- a solid set of GPA, TOEFL, and GRE scores

Interested candidates can send me their transcripts and brief resume at ahmad.taha@utsa.edu, alongside any previously published papers, and copies of GRE/TOEFL scores. Emails should indicate that you have seen this ad in this E-Letter.

San Antonio is the seventh largest US city in terms of [population](#), has moderate weather year round, and is very affordable for graduate students.

[Back to the contents](#)

6.11. PhD/Postdoc: Leibniz University Hannover, Germany

Contributed by: Matthias A. Müller, mueller@irt.uni-hannover.de

PhD/Postdoc position in Control Theory, Leibniz University Hannover, Germany

We offer one PhD/Postdoc position at the Institute of Automatic Control at the Leibniz University Hannover, Germany. The project will focus on optimization-based state estimation and control for nonlinear uncertain systems. In particular, moving horizon estimation schemes shall be developed for which desired closed-loop guarantees can be given, but also a more general scope including data- and learning-based approaches shall be considered. The project will focus on the development of novel control-theoretic methods which are of relevance in various cutting-edge applications such as robotics, power systems, or autonomous driving.

The position is both suitable for a PhD student or Postdoc. We offer a competitive salary according to the German pay scale TVL-13, including social benefits. The candidate is expected to hold a Master/Doctoral degree in control engineering or a related subject with specialization in control. Also, teaching assistance in bachelor and master level control courses is expected.

Please send your application including a complete curriculum vitae, certificates, and a motivational letter until February 15, 2020 to mueller@irt.uni-hannover.de

For more information on the position, please contact Prof. Matthias Müller, mueller@irt.uni-hannover.de or consult the webpage www.irt.uni-hannover.de/jobs

[Back to the contents](#)

6.12. PhD/Postdoc: Tsinghua University, China

Contributed by: Pascal Traylor, ptraylor19@mails.tsinghua.edu.cn

Minimally Invasive BMI and Robotics Lab - Tsinghua University

Dear Colleagues:

The newly established Minimally Invasive Brain-Machine Interface Materials and Robotics Lab in the Department of Biomedical Engineering, Tsinghua University, Beijing, is seeking graduate students, research

staff, and post-doctoral research associates. Candidates with backgrounds in Electrical or Mechanical Engineering, Robotics, Control Theory, Mathematics, Biomaterials, and any related fields are strongly encouraged to apply. We are a highly interdisciplinary research group focusing on cutting-edge research on Brain-Machine Interfaces and neural engineering using a robotics and nanotechnology approach. Salaries are highly competitive, and there are abundant scholarship and fellowship opportunities to work at the best university in China. Opportunities to advance one's career through national talent and grant programs are also available.

Interested applicants please send their CV to ptryaylor19@mails.tsinghua.edu.cn.

[Back to the contents](#)

6.13. Postdoc: Glasgow Caledonian University, UK

Contributed by: Ibrahim Kucukdemiral, ibrahim.kucukdemiral@gcu.ac.uk

Research Fellow (RF) position for the EPSRC-ORCA Hub funded Robust Robotic Manipulation of Physical Structures Under Water (ROBMAN)

The School of Computing, Engineering and Built Environment (SCEBE) at Glasgow Caledonian University, Glasgow UK, is offering a Research Fellow (RF) position for highly qualified post-doctoral researchers, for the EPSRC-ORCA Hub funded Robust Robotic Manipulation of Physical Structures Under Water (ROBMAN) project. It is a well-paid (up to Grade 7, point 40 salary scale, depending on the experience) one year long position, starting on March 1st, 2020.

ROBMAN is an EPSRC funded project through ORCA Partnership Funding (<https://orcahub.org/engagement/partnership-fund>), dedicated to developing robust controllers and observers for underwater vehicle and robot manipulators in order to enable Non-Destructive Examination (NDE) of underwater pipes and assets through physical interaction. The ROBMAN consortium is composed of underwater manipulation team at Heriot-Watt University, Glasgow Caledonian University, and Subsea7 within the ORCA Hub project. The recruited RF will work in close collaboration with another Research Associate in Heriot-Watt University and also with the engineers in Subsea7. The postdoctoral researcher in this position will develop control and observer technology using the system already available at Heriot-Watt University in close collaboration with the Heriot-Watt underwater manipulation team and will conduct underwater demonstrations in the FLoWave Ocean Energy Research Facility with our underwater robots. Afterwards, the developed technology will be adapted and demonstrated in an industrial manipulation setup of Subsea7. In brief, ROBMAN will involve front-edge manipulation research with highly sophisticated experimental facilities and active industry involvement, targeting unmet technological needs in real-life industrial underwater applications.

Therefore, we are looking for a highly experienced and motivated researcher willing to work as part of our team in the area of control and robotics for underwater applications. The ideal candidate should hold a PhD in a relevant area of Robotics or Control or related subject (or a thesis submitted by the start date of the project) and have a strong theoretical understanding and an experimental background in one or more of the following fields: Robotic Manipulation, Control, Observer Design, Underwater Robotics.

Applicants should provide the following (besides any other documents requested in official application):

- Letter of motivation highlighting relevance of background to the project,
- CV
- Two major publications in relation to the project,
- Two reference letters

Informal enquiries are welcomed and should be made to Dr. Ibrahim Kucukdemiral, Glasgow Caledonian University, School of Computing, Engineering and Built Environment, Department of Applied Science, Glasgow, UK. Ibrahim.kucukdemiral@gcu.ac.uk T:+44 (0)141 273 1621

[Back to the contents](#)

6.14. Postdoc: Beihang University, China

Contributed by: Qing Gao, gaoqing@buaa.edu.cn

Postdoc: Beihang University (Beijing University of Aeronautics and Astronautics)

A Postdoc position (2-years fixed term) is available in quantum control theory / quantum machine learning with applications to quantum computation, at the Department of Automatic Control, Beihang University, China. The AC department is among the top 5 in the discipline of control science and engineering among Chinese universities.

Interested applicants should have all of the following qualifications:

- a) a doctoral degree in engineering, applied mathematics, or related fields;
- b) strong background in control theory. Knowledge in stochastic systems and quantum physics is preferred but not essential;
- c) at least one paper published in top control journal like IEEE Trans. and Automatica.

This position will be under Prof. Qing Gao and Prof. Jinhu Lv's supervision.

Information about prof. Gao can be found at <https://bit.ly/33NV1HH>

Information about Prof. Jinhu Lv can be found at <https://bit.ly/2PdtASh>

For the successful applicant, the annual salary will be CNY 230,000 or 300,000, depending on his/her research background. For other benefits, for example, the successful applicant's children will have access to Beihang's kindergarten/primary school/middle school, please contact Prof. Gao for details.

Inquiries or applications can be sent directly to gaoqing@buaa.edu.cn. A full application should contain a CV, Representative publications, and at least two reference letters.

[Back to the contents](#)

6.15. Postdoc: Heriot-Watt University, UK

Contributed by: Mustafa Suphi Erden, m.s.erden@hw.ac.uk

Post-doc Position in Heriot-Watt University in Robotics on Control of an Underwater Vehicle-Manipulator Robot System

The School of Engineering and Physical Sciences (EPS) at Heriot-Watt University, Edinburgh, UK, is offering a post-doctoral research associate (RA) position for highly qualified post-doctoral researchers, for the EPSRC-ORCA Hub funded ROBMAN project. It is a well paid (up to Grade 8/35 depending on the experience, meaning the salary will be in the range £32,817 - £42,792 depending on the experience), one year long position, starting on March 1st, 2020.

ROBMAN is an EPSRC funded project through ORCA Partnership Funding (<https://orcahub.org/engagement/partnership-fund>), dedicated to developing robust controllers and observers for underwater vehicle and robot manipulators in order to enable Non-Destructive Examination (NDE) of underwater pipes and assets through physical interaction. The ROBMAN consortium is composed of Heriot-Watt University, Glasgow University, and Subsea7 within the ORCA Hub project. The recruited researcher will work in close collaboration with another Research Associate in Glasgow University and also with the engineers in Subsea7. We have a team of underwater manipulation in Heriot-Watt University, composed of academic supervisors, post-doctoral researchers, and PhD students working on a Stewart Platform, a Kuka LWR, an Underwater ROV, and an underwater manipulator to develop manipulation capability to trace the surface of underwater pipes. The Stewart Platform and Kuka LWR robot are used to replicate the underwater ROV-manipulator system in lab room. The postdoctoral researcher in this position will develop control and observer technology using these systems in close collaboration with the Heriot-Watt underwater manipulation team and will conduct underwater demonstrations in the FLoWave Ocean Energy Research Facility with our underwater robots. Afterwards, the developed technology will be adapted and demonstrated in an industrial manipulation setup of Subsea7. In brief, ROBMAN will involve front-edge manipulation research with highly sophisticated experimental facilities and active industry involvement, targeting unmet technological needs in real-life industrial underwater applications.

Applicants should provide the following documents and apply through <https://bit.ly/2P9DbdT>. Partial application documents will not be considered.

- Letter of motivation highlighting relevance of background to the project,
- CV
- Two major publications in relation to the project,
- Two reference letters.

For any inquiry please contact Dr. Mustafa Suphi Erden: m.s.erden@hw.ac.uk

Mustafa Suphi Erden

Assistant Professor

Heriot-Watt University,

School of Engineering and Physical Sciences, EM 2.01

Edinburgh, EH14 4AS, UK

Tel. +441314514159

URL: <https://researchportal.hw.ac.uk/en/persons/mustafa-suphi-erden>

[Back to the contents](#)

6.16. Postdoc: University of Padova, Italy

Contributed by: Chiuso Alessandro, chiuso@dei.unipd.it

Call for Interest - 2 Post Doc positions at Univ. of Padova

Two post-doc applications (see details below) are sought in the context the following project funded by the Department of Information Engineering, University of Padova:

Title of the project

Personalized whole brain models for neuroscience: inference and validation

Abstract: Contemporary neuroscience has embraced network science to study the complex and self-organized structure of the human brain, with the promise of addressing key societal issues such as neural degeneration and treatment of neurological and psychiatric diseases and damages. These objectives will be pursued in this highly interdisciplinary project following a data-driven model based approach: our final goal is to design novel algorithmic solutions for data-driven inference of whole-brain mesoscale dynamical models as well as to develop and validate (or invalidate) models based on both data driven as well as methodological studies. Ideally, these models should provide solid grounds to develop (i) novel individual-level features for predicting cognitive and behavioral deficits originated by brain lesions or neuro-degeneration and (ii) simulation tools for designing personalized treatments such as stimulation.

Team: The post-docs will work in an interdisciplinary team composed of Engineers, Psychologists, Neurologists and Physicists

Contacts:

Prof. Alessandro Chiuso Department of Information Engineering

University of Padova chiuso@dei.unipd.it

Prof. Alessandra Bertoldo Department of Information Engineering

University of Padova bertoldo@dei.unipd.it

- Post Doc # 1: 24 months (possibly extended to 36 month)

Activity: The Post-Doc will develop and refine algorithms for estimation of effective connectivity models from neuroimaging data (fMRI) providing also an in-depth comparison between different classes of methodologies (e.g. DCM-like models and "Granger" causality type models). He/she will also actively collaborate in the validation studies and work in close interaction with the external collaborators (neurologists, neuroscientists, physicists).

Profile: The ideal candidate should have a recent PhD in engineering, applied mathematics/physics, statistics, computer science, and related fields. He/she must have demonstrated experience in complex system modeling and advanced analytic techniques (e.g. multivariate approaches, machine learning, graph theory etc.). Strong analytical/mathematical skills are a requirement. Experience in one or more areas of neuroimaging will be plus. Programming skills (C, C++, Python, Matlab) are not a prerequisite, but a clear advantage. Moreover, the candidate must be highly motivated and creative individual with the ability to work in a dynamic, multi-disciplinary research environment and be willing to interact with both experimental and theoretical neuroscientists.

Salary: 25k to 30k Euro per year depending upon qualification.

- Post Doc # 2: 24 months (possibly extended to 36 month)

Activity: The activities will be mainly related to the preprocessing and analysis of neuroimaging data as well as validation, via systematic statistical testing, of effective connectivity models on animal data as well as on stroke patients. In particular, the post-doc will be involved in the design of experiments and conduct human neuroimaging research on normal brain organization and changes in network architecture among patients with stroke, with an emphasis on effective and functional connectivity network mapping. The post-doc will compare the human results with those he/she will obtain working with whole-brain rs-fMRI signals from the animal model.

Profile: The position is open to recent PhDs in applied mathematics/physics, computer science, engineering, statistics and related fields, with demonstrated ability to conduct high impact research. The successful applicant will have expertise in anatomical MRI, dMRI and/or rs-fMRI analysis, familiarity with control theory and system identification, time-series analysis, statistics and graph theoretic and network modeling. Expertise in vivo electrophysiology signals analysis is also desirable. Experience with neuroimaging analysis programs (ANTs, FSL, SPM, FreeSurfer or other relevant programs), and strong knowledge on programming (e.g. good command of scripting, Python and Matlab) is also expected.

Clearly, the successful candidate will be part of a diverse and multidisciplinary group including engineers of different specialties, neuroscientists, physicists, therefore a strong attitude and flexibility in team-working are required to foster cross-breeding and fertilization among the different disciplines involved in the project.

x

Salary: 25k to 30k Euro per year depending upon qualification.

[Back to the contents](#)

6.17. Postdoc: Zhejiang University, China

Contributed by: Zhiyong Chen, zhiyong.chen@newcastle.edu.au

Postdocs: Zhejiang University and Wahaha Intelligent Robotics Co., China

Zhejiang University and Wahaha are jointly looking for two postdocs available as soon as possible to work at both Zhejiang University and Wahaha Intelligent Robotics Co. in Hangzhou.

The research project is broadly on robotics and control. The successful applicants will be offered

- A competitive salary (Chinese RMB 200,000 to 300,000 per year plus housing allowance, negotiable depending on the qualification) by Zhejiang University and Wahaha Intelligent Robotics Co.
- State-of-the-art experimental platforms.
- Full contract for 2 years with the possibility of renewal on performance.

Qualifications

- A Ph.D. degree in Electrical Engineering, Mechanical Engineering, Applied Mathematics, or a closely related field.
- Excellent background and a record of journal publications in robotics or control theory and applications.
- Good industrial/practical experience.

Interested candidates should send their CV (with names of at least two references) and a cover letter describing their specific interest and how their background fits the qualifications to Dr. Lijun Zhu lijun.zhu@wahaha.com.cn

[Back to the contents](#)

6.18. Postdoc: University of New Mexico, USA

Contributed by: Carol Jimerson, carolj@unm.edu

Postdoctoral Associate: Stochastic Reachability for Autonomous Cyber-Physical Systems

The Department of Electrical and Computer Engineering at the University of New Mexico (UNM) invites applications for a Postdoctoral Associate with an anticipated start date of March 2020.

Position: The postdoctoral associate will work with an interdisciplinary team of researchers in Electrical and Computer Engineering and in Computer Science to develop theory and algorithms to enable autonomy in dynamic and uncertain environments. Specifically, the postdoctoral associate will 1) incorporate stochastic reachable sets into a model predictive control framework, and investigate convergence, convexity, and optimality,

2) develop scalable under-approximations in the case of imperfect measurements, and

3) integrate learning into stochastic reachability-based planning algorithms, to enable navigation in dynamic environments with poorly characterized uncertainty.

This is a benefits-eligible, one-year appointment that may be renewed for an additional year contingent upon satisfactory performance and availability of resources. No teaching is expected during the appointment. Salary is dependent upon experience and qualification.

How to apply: Interested candidates should provide a CV, a cover letter summarizing capabilities and interests, and contact information for three professional references.

Please online: <https://unm.csod.com/ux/ats/careersite/18/home?c=unm&sq=req11321>.

Applications received by February 15, 2020, will receive full consideration, although the position will remain open until filled.

Minimum Qualifications: Applicants must have completed their Ph.D. by the time of appointment in engineering, computer science, mathematics, or a closely related field, and demonstrate excellent potential for research.

Preferred Qualifications: Desirable experience includes work in hybrid systems, stochastic optimal control, reachability analysis, optimization, or learning. In addition, the applicant should have a demonstrated

commitment to diversity, equity, inclusion, and student success, as well as working with broadly diverse communities.

About UNM: The University of New Mexico is a family-friendly and an equal employment opportunity/affirmative action employer, making decisions without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, veteran status, disability, or any other protected class. We are committed to hiring and retaining a diverse workforce. The University of New Mexico is a recipient of an ADVANCE Institutional Transformation grant from NSF to promote and advance women and minority faculty in STEM fields, and SOE is partnering with the ADVANCE at UNM program to help recruit and retain an excellent and diverse faculty. Albuquerque is a beautiful and historic city with terrific weather, rich cultural life, and lots of outdoor activities. Cradled in the Rio Grande Valley beneath the Sandia Mountains, Albuquerque is by far the largest city in the state, acting as the media, educational, and economic center of New Mexico. For more information go to <https://advance.unm.edu/why-abq/>

[Back to the contents](#)

6.19. Postdoc: Université Paris-Saclay, France

Contributed by: Pedro Rodriguez-Ayerbe, pedro.rodriguez@centralesupelec.fr

Postdoc: Université Paris-Saclay, CNRS, CentraleSupélec, L2S, France.

Post-doctoral research: EBM (Electron Beam Melting) numerical control strategies for very high speed metal additive manufacturing

Laboratory: L2S (Laboratoire des Signaux et Systèmes), UMR 8506 CentraleSupélec-CNRS-Univ. Paris Sud, Département Automatique, Plateau de Moulon, 3 rue Joliot-Curie, 91 192 Gif sur Yvette cedex

Context: In metal additive manufacturing, one of the principal objectives is to optimise the machine productivity maximizing the path following speed, whatever the actuator used for control and the associated energy source. In this context, an important link relates to the elaboration of optimal control strategies for the considered actuators. Previous works have opened up perspectives in SLM (Selective Laser Melting) processes with a galvanometer as the actuator of the operating part and a laser as the associated energy source. In the framework of this research work, and in order to carry out very high speed path following, we will focus more specifically on the EBM (Electron Beam Melting) type process. EBM associates an electron gun for the energy source and a coil as the actuator performing the control of the electron beam. The work will focus in particular on the control of the coil currents, the interest residing in the possibility of obtaining very fast dynamics for this actuator, which is not possible with SLM process.

The research will mainly be conducted at L2S, but may also include actions on a machine equipped with an electron gun present at the LPGP (Laboratoire de Physique des Gaz et des Plasmas) in Orsay. They will also be the opportunity of exchanges with other PhD students on related subjects.

More details can be found at: <https://bit.ly/2PMukPE>

[Back to the contents](#)

6.20. Postdoc: University of Utah, USA

Contributed by: Masood Parvania, masood.parvania@utah.edu

Postdoctoral Scholar Position on Cyber-Physical Resilience

The Utah Smart Energy Laboratory (<http://usmart.ece.utah.edu>) at University of Utah has immediate opening for Postdoctoral Research Associates on developing intelligent controllers for cyber-physical resilience of power systems. Ideal candidate would have expertise on the application of machine learning methods, control theory, and mathematical optimization in power systems operation.

Applicants should apply for the position online at <https://utah.peopleadmin.com/postings/101751>

Applications will be reviewed immediately, and the posting is open until the position is filled.

[Back to the contents](#)

6.21. Postdoc: Rutgers University, USA

Contributed by: Laurent Burlion, laurent.burlion@rutgers.edu

Postdoc Position at Rutgers University, Mechanical and Aerospace Engineering

A Postdoctoral Associate is available as soon as possible at Rutgers, The State University of New Jersey.

Candidate will work under the guidance of Professor Laurent Burlion. Position is Full Time. Candidate should have strong background in robust control and/or constrained control and/or optimal control. The purpose of the project is to develop new control techniques for floating offshore wind turbines, or wind farms, using the discipline of control co-design.

Minimum requirements:

- Highly motivated candidates with strong background in engineering
- PhD degree in control
- Excellent communication skills
- Experience as first author on one or more scholarly peer reviewed publications.
- Any special computer skills or equipment utilized: Matlab and/or Python and/or C++.

Please apply using the link: <https://jobs.rutgers.edu/postings/105817>

[Back to the contents](#)

6.22. Postdoc: University of California, Berkeley

Contributed by: Scott Moura, smoura@berkeley.edu

Open Postdoc Position

Advisor: Professor Scott Moura

Energy, Controls, and Applications Lab (eCAL)

Website: <http://ecal.berkeley.edu/>

University of California, Berkeley

PDF Of Ad: <https://berkeley.box.com/s/4ft24rrk1t6wki9vy5dxokqnw1sv3igq>

We are currently seeking postdoctoral scholar candidates to lead the following projects:

- **Optimization of (A)EV Fleets, Charging Infrastructure, and Routing:** This project seeks to optimize the total cost of ownership for an (automated) electric vehicle fleet of trucks for moving goods. Technical skills involve network modeling, optimization, transportation science, data analytics, simulation, and strong project management & communication skills.
- **SlrpEV (Smart LeaRning Pilot for Electric Vehicles):** SlrpEV is a University of California research project developing the next-generation of EV charging stations that intelligently manages electric power and parking through machine learning. Technical skills involve machine learning, optimization, modeling, simulation, software development (backend databases & algorithms + frontend UI/UX), and strong project management & communication skills.
- **Tools for Electric Bus Fleet Planning & Operation:** This project seeks to construct a tool for optimizing electric bus fleets and charging infrastructure to minimize total cost of ownership. Technical skills involve energy system modeling, optimization, simulation, and strong project management & communication skills.
- **State & Parameter Estimation for Battery Pack with Heterogeneous Cells:** The objective is to estimate the state-of-charge and state-of-health in battery packs where the cells are heterogeneous due to variations in health, temperature, and charge levels. Technical skills involve nonlinear systems, estimation theory, statistical inference, and strong project management & communication skills.
- **Electrochemical Model-Based Battery Fast Charging:** The objective is to experimentally quantify the benefits of an electrochemical model-based battery management system in terms of fast charge times and capacity loss. Technical skills involve electrochemical battery modeling, optimal control, estimation theory, hardware-in-the-loop experimentation, and strong project management & communication skills.

Expected Start Date: January 2020 – June 2020

Ideal Candidates should satisfy the following criteria:

- Graduate student GPA with minimum 3.5 GPA
- Strong background in controls, optimization, mathematics and physics
- Strong background in energy systems modeling
- Strong MATLAB and/or Python programming experience
- Strong presentation and writing skills

If interested, then please apply at <https://forms.gle/K7ciH5WBYH9dbRvU6> by January 31, 2020. To begin, prepare your CV, 1-3 publications, two references (emails only), and transcript. Also, be prepared to answer the following questions in detail:

1. Why are you interested in a postdoctoral scholar position at eCAL?
2. What is your most relevant previous experience with respect to the projects in the job ad?
3. What are your medium-to-long term career objectives?

[Back to the contents](#)

6.23. Postdoc: North Carolina A&T State University, USA

Contributed by: Ali Karimodini, akarimod@ncat.edu

Post-Doctoral Position in Control of Multi-Agent Robotic Systems

The Autonomous Cooperative Control of Emergent Systems of Systems (ACCESS) Laboratory at NC A&T State University, invites applications for a full-time, post-doctoral research associate position in Multi-Agent Robotic Systems applications particularly the Cooperative Control of UASs for Smart Agriculture, Environment, and Infrastructure. The project uses cooperative control of UASs and distributed remote sensing techniques for applications such as smart farming or infrastructure inspection.

This is a non-tenure-track, year-to-year appointment, renewable annually for up to two years subjected to satisfactory performance, availability of resources, and the needs of the Lab. We thus look for applicants that have a demonstrated track record in the applications of multi-agent systems. Programming and practical experiences with embedded real-time systems are desired.

The candidate will be also working with both graduate and undergraduate students in a mentoring role, and will be involved in conducting workshops, and seminars. The candidate will enjoy a dynamic and collaborative working environment. If interested, please submit your application via <https://jobs.ncat.edu/postings/18833>.

For any question, please contact Dr. Karimodini (akarimod@ncat.edu).

[Back to the contents](#)

6.24. Postdoc: Luleå University of Technology, Sweden

Contributed by: George Nikolakopoulos, geonik@ltu.se

Post Docs in Aerial and Space Robotics

The Robotics Team at the Department of Computer Science and Electrical and Space Engineering at Luleå University of Technology is now looking for 3 post-docs contributing to our growing activities in Aerial and Space Robotics. The group is heavily involved in a large amount of National and European research grants in this area spanning from UAVs, UGVs, Space Exploration and Biologically inspired Robotics.

The positions will involve dense research activities in the following areas

- Field Robotics
- Vision for robotic navigation
- Collaborative formation and scenario accomplishment
- Visual Servoing
- Space Vision and Space Visual Features
- Quaternion control design
- Space Visual Odometry
- Advanced Model Based Filtering (e.g. EKF, UKF)
- Perception and Estimation
- Switching Reconfigurable Control

- Collaborative Mapping and Exploration

The candidate will perform research with substantial theoretical and experimental components that should be published in peer-reviewed major international journals and at major conferences. The position will include supervision of MSc and PhD students, and to acquire funding for future research projects from research funding agencies/councils, EU framework program or industry. The candidate will need to represent the group in different occasions, both in Sweden and abroad. Perfect scientific skills with excellence in real life experimentation, former experience in Basic Research funded grants and successful track record in fund raising, as well as perfect communication and management skills are considered as a strong plus. Finally, a former PhD in robotics or control and estimation in the related area within publications in the previous research topics is also considered as a plus. The position might also involve teaching, seminars and presentations.

As a post-doctoral fellow, you work actively and independent in relation to ongoing research projects. We are looking for a candidate who can contribute to activities at the Robotics team and work in close collaboration with the senior researchers at the research group.

The position is limited to 1 year with possible extension. For further information please contact Professor George Nikolakopoulos +46 920 491298, geonik@ltu.se

For more information please visit:

- <https://www.ltu.se/ltu/Lediga-jobb/test-script?l=en>

- <https://www.ltu.se/ltu/Lediga-jobb/test-script?l=en>

[Back to the contents](#)

6.25. Postdoc: KTH, Sweden

Contributed by: Håkan Hjalmarsson, hjalmars@kth.se

Postdoctor in Modeling and Control of Metabolic Networks for Bioproduction

A postdoc scholarship in modeling and control of metabolic networks for bioproduction is available at the Division of Decision and Control Systems at KTH, Stockholm, Sweden. The open postdoc position is associated with the Centre for Advanced BioProduction, AdBIOPRO, led by KTH, and in collaboration with Lund University and Karolinska University Hospital as well as seven Swedish companies in the Biopharmaceutical/Biotech industry, including GE Healthcare. The Centre focuses on bioproduction based on mammalian cells, with the objective to respond to the paradigm shift towards continuous processing.

The postdoc project concerns model based control and optimization of intracellular networks and cell cultures by manipulating culture media and other process parameters. It involves developing methodologies for mechanistic metabolic network modeling, parameter estimation and experiment design for such models, optimizing cell metabolism through media feeds for perfusion, and feedback control of perfusion processes. The project is in close collaboration with the School of Chemistry, Biotechnology and Health at KTH, world leading in perfusion and hosting extensive laboratory facilities, and our industrial partners, with the ultimate objective to verify methodologies in an industrial setting.

Candidates should have a Ph.D. or be near Ph.D. defense in Electrical Engineering, Chemical Engineering or Biotechnology. The candidate should have a strong background from at least one of the areas biosystems modeling, system identification or model based control, and experience from at least one more of these areas.

More details can be found at

<https://www.kth.se/en/om/work-at-kth/lediga-jobb/what:job/jobID:307897/where:4/>

Deadline for applications: February 15. For more information please contact Prof. Håkan Hjalmarsson (hjalmarss@kth.se), or Prof. Elling Jacobsen (jacobsen@kth.se).

[Back to the contents](#)

6.26. Faculty: Virginia Tech, USA

Contributed by: John Jelesko, jelesko@vt.edu

Two Assistant Professor Positions in Connected Technologies in Agriculture Applications

The School of Plant and Environmental Sciences (SPES) at Virginia Tech seeks to fill two academic year (9-month) tenure-track faculty positions in Connected Technologies in Agricultural Applications at the Assistant Professor rank with responsibilities in research and teaching. The incumbents will conduct research on the application of autonomous, semi-autonomous, remote sensing, and smart systems in the production of, but not limited to, agronomic crops, specialty crops, or agricultural soil and water systems. The incumbents are expected to work collaboratively within and across academic units at Virginia Tech, including national or international collaborations. The individuals will cooperatively develop and teach new classes related to connected technologies in agriculture. A Ph.D. in plant science, soil science, engineering, or a closely related discipline is required. Demonstrated experience in the use of connected technologies is required. A commitment to mentoring students, diversity and inclusion is required. To obtain more information and to apply for this position go to [Job #512093 at <https://www.jobs.vt.edu>]. Review of applications will begin on January 6, 2020 and will continue until the position is filled.

Virginia Tech does not discriminate against employees, students, or applicants on the basis of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, or veteran status; or otherwise discriminate against employees or applicants who inquire about, discuss, or disclose their compensation or the compensation of other employees, or applicants; or any other basis protected by law.

[Back to the contents](#)

6.27. Faculty: University of Sheffield, UK

Contributed by: Rebecca Fieldsend, r.fieldsend@sheffield.ac.uk

The Department of Automatic Control and Systems Engineering at the University of Sheffield, UK is recruiting to a number of academic positions:

- Lecturer in Medical Robotics
- Lecturer in Machine Learning and Control
- Professor in Control and Power Systems

We are looking for innovative and visionary researchers to join our growing department, post-holders will also contribute to the department's undergraduate and postgraduate taught programmes and to the supervision of PhD students.

For further information about the open positions and department, please visit:

<https://www.sheffield.ac.uk/acse/people/jobs>

[Back to the contents](#)

6.28. Faculty: Texas A&M University, USA

Contributed by: Reza Langari, rlangari@tamu.edu

Assistant, Associate or Full Professor – Multidisciplinary Engineering Technology Program (Mechatronics)

The Department of Engineering Technology and Industrial Distribution, College of Engineering, at Texas A&M University invites applications for a tenured or tenure track faculty position at the assistant, associate, or full professor levels with expertise in one or more of the following areas: mechatronics, industrial and mobile robotics, automation, product design, industrial internet of things (IIoT), cyber-physical systems, and embedded systems. This is a full-time, nine-month academic appointment with an anticipated start date of fall 2020.

The successful applicant will teach at the undergraduate and graduate levels; advise and mentor graduate students; develop an independent, externally funded research program; participate in all aspects of the department's activities; and serve the profession. Through effective industrial advisory committees that provide valuable guidance, the department has numerous opportunities for the development of laboratories and sponsorship of applied research activities. Candidates should have relevant hands-on experience with applied research and technology development in robotics and automation, academic leadership experience and/or experience with the Accreditation Board of Engineering Technology and its accreditation processes. By being an integral part of the College of Engineering, there is excellent interaction with faculty in other engineering programs to support large-scale college initiatives, as well as access to graduate students to assist in instructional and applied research activities. Strong written and verbal communication skills are required. Applicants should consult the department's website to review our academic and research programs (engineering.tamu.edu/etid).

Qualifications: Applicants must have an earned doctorate in an appropriate engineering field or a closely related engineering or science discipline.

Application Instructions: Applicants should submit a cover letter, curriculum vitae, teaching statement, research statement, and a list of four references (including postal addresses, phone numbers and email addresses) by applying for this specific position at <http://apply.interfolio.com/68043>. Full consideration will be given to applications received by December 15, 2019. Applications received after that date may be considered until the position is filled. It is anticipated the appointment will begin fall 2020. For additional information, please contact Dr. Rainer Fink at fink@tamu.edu.

Equal Employment Opportunity Statement: Texas A&M University is committed to enriching the learning and working environment for all visitors, students, faculty, and staff by promoting a culture that embraces

inclusion, diversity, equity, and accountability. Diverse perspectives, talents, and identities are vital to accomplishing our mission and living our core values.

[Back to the contents](#)

6.29. Faculty: Norwegian University of Science and Technology, Norway

Contributed by: Roger Skjetne, roger.skjetne@ntnu.no

Faculty position: Professor/Associate Professor in Marine Cybernetics at NTNU, Norway

We have a vacancy for a Professor/Associate Professor of Marine Cybernetics at the Department of Marine Technology at NTNU, Norway. The professorship is sponsored by Equinor through the Akademia-agreement for 5 years and afterwards fully covered by the university. The profile concerns physical modelling and control system design including autonomy for marine cyber-physical systems such as ocean structures, ships, and marine robots. With increasing digitalization of the marine and maritime industries, incl. ocean assets for renewable energy, wind turbines, aquaculture plants, etc., the field also needs to expand and integrate towards maritime Internet of Things (IoT), networks and communication, cybersecurity, (big) data analytics, artificial intelligence incl. machine learning, and marine autonomy.

The position is especially established to strengthen the research activity on theoretical, numerical, and experimental methods in the framework of marine cybernetics with strong interaction between marine technology, control engineering, and computer science.

The vacant position has specific responsibility for teaching and supervising students and for carrying out research in the areas relevant for the field of marine cybernetics, such as:

- Design of intelligent autonomous marine systems using methods from optimization theory, stochastic filtering, reachability analysis, data analytics, machine learning, and artificial intelligence.
- Control system design based on methods from linear, nonlinear, hybrid, and optimal control and estimation theory, including stochastic systems theory.
- Mathematical and data-driven modelling of ships, ocean structures, and marine robots, including the ocean environment.
- Numerical analytics and simulation within a framework of using digital twins for design, testing/verification, and validation purposes of marine control systems, including marine autonomous systems.
- Experimental testing and validation in the hydrodynamic laboratories, as well as field campaigns.

For more information and to submit application, see:

<https://www.jobbnorge.no/en/available-jobs/job/179350/professor-associate-professor-of-marine-cybernetics>

Application deadline: February 1st, 2020

[Back to the contents](#)

6.30. Faculty: Johns Hopkins University, USA

Contributed by: Enrique Mallada, mallada@jhu.edu

Faculty Position at the Johns Hopkins Mathematical Institute for Data Science (MINDS)

Although not stated explicitly in the call, candidates broadly working on the mathematical foundations of assured autonomy and learning for control of safety-critical systems will be considered.

Faculty Position in Data Science at the Johns Hopkins Mathematical Institute for Data Science (MINDS)

The Johns Hopkins Mathematical Institute for Data Science (MINDS) invites applications for a tenure-track faculty position. The successful candidate is expected to conduct fundamental research in the mathematical, statistical and computational foundations of machine learning.

Outstanding candidates at all academic ranks will be considered. Candidates must hold a Ph.D. in Applied Mathematics, Biomedical Engineering, Computer Science, Electrical Engineering, Mathematics, Statistics, or related fields, and will be expected to establish a strong, independent, multidisciplinary, and internationally recognized research program. Commitment to teaching excellence at the undergraduate and graduate levels is required.

Primary appointments will be in the academic Department most appropriate for the candidate within the Whiting School of Engineering – e.g. Applied Math and Statistics, Biomedical Engineering, Computer Science, or Electrical and Computer Engineering. For additional information see <https://www.minds.jhu.edu/job-openings/>.

Opportunities for interactions across the University include the Center for Imaging Science, the Center for Language and Speech Processing, the Laboratory for Computational Sensing and Robotics, the Institute for Data-Intensive Engineering and Science, the Institute for Computational Medicine, the Malone Center for Engineering in Healthcare, the Johns Hopkins Applied Physics Laboratory, the Johns Hopkins School of Medicine, the Krieger School of Arts and Sciences, and the Bloomberg School of Public Health.

All applicants should submit their application online at <https://apply.interfolio.com/70041> Electronic applications should include a cover letter describing the principal expertise of the applicant, a statement of teaching interests, a statement of research interests, a complete resume, and a publication list. Applications at the Assistant Professor level should also include at least three reference letters. Applications at the Associate or Full Professor levels should not include reference letters or names at this stage.

Applications will be reviewed starting January 15, 2020, and will be accepted until the position is filled. Onsite interviews will be conducted on Thursday, February 20 and Friday, February 21.

The Johns Hopkins University is an equal opportunity/affirmative action employer that actively encourages interest from minorities and women and is committed to recruiting, supporting, and fostering a diverse community of outstanding faculty, staff, and students. All applicants who share this goal are encouraged to apply. The Johns Hopkins University is an EEO/AA Employer.

[Back to the contents](#)