Welcome to Issue 366 of the CSS E-letter available here.

– To submit new articles, visit article submissions on the E-Letter website.
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– To unsubscribe, please send me an email at ahmad.taha@utsa.edu with the subject line Unsubscribe.

The next E-Letter will be mailed out at the beginning of March 2019.

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1 IEEE CSS Headlines

1.1. 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/

1.2. 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:

- 8th International Conference on Systems and Control (ICSC’19).
  http://lias.labo.univ-poitiers.fr/icsc/icsc2019/


- 27th Mediterranean Conference on Control and Automation.
  https://med19.net.technion.ac.il/

- 12th International Workshop on Robot Motion and Control (RoMoCo’2019).
  http://romoco.put.poznan.pl/

- 38th Chinese Control Conference (CCC 2019).

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

1.3. IEEE Control Systems Society 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.

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1.4. IEEE Transactions on Automatic Control
Contributed by: Alessandro Astolfi, ieeetac@imperial.ac.uk

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1.5. IEEE Transactions on Control of Network Systems
Contributed by: Maureen Stanton, stanton@bu.edu

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# Miscellaneous

## 2.1. Software Release: EMGR 5.6

Contributed by: Christian Himpe, himpe@mpi-magdeburg.mpg.de

Version 5.6 of emgr—EMpirical GRamian framework—has been released, now compatible with Octave, Matlab and Python. Empirical Gramians encode system-theoretic properties, such as controllability, observability or identifiability of linear, nonlinear and parametric input-output systems. You can use these data-driven system Gramians for model reduction, optimal placement, uncertainty quantification, and more: https://gramian.de.

## 2.2. International Graduate School on Control

Contributed by: F. Lamnabhi-Lagarrigue, lamnabhi@l2s.centralesupelec.fr

EECI-IGSC-2019: International Graduate School on Control


On-line early registration for the remaining modules M10 to M27 is STILL OPEN till 28 Feb 2019.

Grant application: http://www.eeci-igsc.eu/igsc-grant-overseas/ is STILL OPEN till the same deadline of 28 Feb 2019.

## 2.3. PhD Award on Control for Complex Systems

Contributed by: Luca Greco, luca.greco@l2s.centralesupelec.fr

2018 European PhD Award on Control for Complex and Heterogeneous Systems

As every year, we would like to encourage young researchers that have recently obtained their PhD degree to participate in the process for the selection of the best PhD thesis defended in a European University in the field of Control for Complex and Heterogeneous Systems. The aim is to encourage high-quality work amongst young researchers in their first research period. The prize consists of a certificate and a cash award of 1000€. It will be delivered during the ECC’19 Congress.

Deadline for application: *28th February 2019*

To be eligible for the award, the thesis must be in English and have been defended in Europe between 15/07/2017 and 14/07/2018

Former recipients can be found on the webpage: http://www.eeci-institute.eu/index.php?p=PhD-Award
To apply, please consult the award webpage: http://www.eeci-institute.eu/PhD-Award/
Please forward this message also to whom it may concern in your Department or to your colleagues.

2.4. Saint Petersburg Summer School on Nonlinear and Adaptive Control
Contributed by: Anton Pyrkin, a.pyrkin@gmail.com

We would like to point your attention to the “Saint Petersburg Summer School on Nonlinear and Adaptive Control”, which will take place during June 3 to June 5, 2019 in ITMO University, St. Petersburg, Russia.

The objectives of the school are to present the basic introductory material, as well as more recent results, on the topics of nonlinear and adaptive control. The (3hrs) lectures are delivered by world leading experts in these fields. The target audience are graduate students, researchers and practitioners in systems and control theories. The school is an event organized by the ITMO University together with Hangzhou Dianzi University (China) and Innopolis University (Russia).

The attendance is free, but it is necessary to register at https://snac2019.com/registration/.

Confirmed lecturers and courses contents are:
* Prof. Alberto Isidori. Introduction to nonlinear systems analysis: The geometric approach. (University of Rome La Sapienza, Italy)
* Prof. Arjan van der Schaft. Modeling of physical systems and passivity-based control. (University of Groningen, The Netherlands)
* Prof. Alessandro Astolfi. Modern techniques in nonlinear control and model reduction. (Imperial College London, London)
* Dr. Romeo Ortega. Adaptive control. (CNRS, France)
* Prof. Vadim Utkin. Sliding mode control. (The Ohio State University, USA)
* Prof. Stefano Stramigioli. Energy aware robotics. (University of Twente, The Netherlands)

The program of the school includes three full days of lectures, interleaved by enough time slots to allow scientific discussions among the participants and with the speakers. For more details please visit a web-site of the event https://snac2019.com/ or write us to info@snac2019.com.

We welcome you, your students and colleagues to this interesting and inspiring event!

2.5. PhD Course on Energy-Based Control Design
Contributed by: Johannes Schiffer, schiffer@b-tu.de


As part of the 2019 International Graduate School on Control (EECI-IGSC-2019, http://www.eeci-igsc.eu/igsc-program-2019/), Romeo Ortega and Johannes Schiffer will deliver a course on “Energy-Based Control Design to Face the Challenges of Future Power Systems” at Technische Universität Berlin from 25/03/2019-29/03/2019. Please follow the links below for further details on the course content and venue.
Course abstract:
Venue:
Registration website:
http://www.eeci-igsc.eu/registration/
The course is eligible for 2nd Year Master Degree credits (3 ECTS) and Scientific Thesis modules. The
deadline for advanced registration is 28/02/2019. Partial financial support will be applied to selected PhD
students worldwide. For further enquiries please contact Johannes Schiffer (schiffer@b-tu.de).
3 Books

3.1. Optimal Impulsive Control
Contributed by: Laura Burgess, laura.burgess@springer.com

Optimal Impulsive Control by Aram Arutyunov, Dmitry Karamzin, and Fernando Lobo Pereira
ISBN: 978-3-030-02259-4
February 2019, Springer
Hardcover, 174 pages, $149.99, €119.99

Optimal Impulsive Control explores the class of impulsive dynamic optimization problems—problems that stem from the fact that many conventional optimal control problems do not have a solution in the classical setting—which is highly relevant with regard to engineering applications. The absence of a classical solution naturally invokes the so-called extension, or relaxation, of a problem, and leads to the notion of generalized solution which encompasses the notions of generalized control and trajectory; in this book several extensions of optimal control problems are considered within the framework of optimal impulsive control theory. In this framework, the feasible arcs are permitted to have jumps, while the conventional absolutely continuous trajectories may fail to exist.

The authors draw together various types of their own results, centered on the necessary conditions of optimality in the form of Pontryagin’s maximum principle and the existence theorems, which shape a substantial body of optimal impulsive control theory. At the same time, they present optimal impulsive control theory in a unified framework, introducing the different paradigmatic problems in increasing order of complexity. The rationale underlying the book involves addressing extensions increasing in complexity from the simplest case provided by linear control systems and ending with the most general case of a totally nonlinear differential control system with state constraints. The mathematical models presented in Optimal Impulsive Control being encountered in various engineering applications, this book will be of interest to both academic researchers and practising engineers.

Contents
1. Linear Impulsive Control Problems
2. Impulsive Control Problems Under Borel Measurability
3. Impulsive Control Problems Under the Frobenius Condition
4. Impulsive Control Problems Without the Frobenius Condition
5. Impulsive Control Problems with State Constraints
6. Impulsive Control Problems with Mixed Constraints
7. General Nonlinear Impulsive Control Problems

3.2. Industrial Process Identification
Contributed by: Laura Burgess, laura.burgess@springer.com

Industrial Process Identification by Ai Hui Tan and Keith Richard Godfrey
ISBN: 978-3-030-03660-7
Industrial Process Identification brings together the latest advances in perturbation signal design. It describes the approaches to the design process that are relevant to industries. The authors’ discussion of several software packages (Frequency Domain System Identification Toolbox, prs, GALOIS, multilev new, and Input-Signal-Creator) will allow readers to understand the different designs in industries and begin designing common classes of signals.

The authors include case studies that provide a balance between the theory and practice of these designs:
- the identification of a direction-dependent electronic nose system; and
- the identification of a multivariable cooling system with time-varying delay.

Major aspects of signal design such as the formulation of suitable specifications in the face of practical constraints, the classes of designs available, the various objectives necessitating separate treatments when dealing with nonlinear systems, and extension to multi-input scenarios, are discussed. Codes, including some that will produce simulated data, are included to help readers replicate the results described.

Industrial Process Identification is a powerful source of information for control engineers working in the process and communications industries seeking guidance on choosing identification software tools for use in practical experiments and case studies. The book will also be of interest to academic researchers and students working in electrical, mechanical and communications engineering and the application of perturbation signal design.

Contents
1. Introduction
2. Design of Pseudorandom Signals for Linear System Identification
3. Design of Computer-Optimised Signals for Linear System Identification
4. Signal Design for Multi-input System Identification
5. Signal Design for the Identification of Nonlinear and Time-Varying Systems
6. Case Study on the Identification of a Direction-Dependent Electronic Nose System
7. Case Study on the Identification of a Multivariable Cooling System with Time-Varying Delay
8. Software for Signal Design

3.3. Cooperative Control of Nonlinear Networked Systems
Contributed by: Laura Burgess, laura.burgess@springer.com

Cooperative Control of Nonlinear Networked Systems by Yongduan Song and Yujuan Wang
ISBN: 978-3-030-04971-3
January 2019, Springer
Hardcover, 197 pages, $169.99, €139.99
Cooperative Control of Nonlinear Networked Systems is concerned with the distributed cooperative control of multiple networked nonlinear systems in the presence of unknown non-parametric uncertainties and non-vanishing disturbances under certain communication conditions. It covers stability analysis tools and distributed control methods for analyzing and synthesizing nonlinear networked systems. The book presents various solutions to cooperative control problems of multiple networked nonlinear systems on graphs.

The book includes various examples with segments of MATLAB® codes for readers to verify, validate, and replicate the results. The authors present a series of new control results for nonlinear networked systems subject to both non-parametric and non-vanishing uncertainties, including the cooperative uniformly ultimately bounded (CUUB) result, finite-time stability result, and finite-time cooperative uniformly ultimately bounded (FT-CUUB) result. With some mathematical tools, such as algebraic graph theory and certain aspects of matrix analysis theory introduced by the authors, the readers can obtain a deeper understanding of the roles of matrix operators as mathematical machinery for cooperative control design for multi-agent systems.

Cooperative Control of Nonlinear Networked Systems is a valuable source of information for researchers and engineers in cooperative adaptive control, as its technical contents are presented with examples in full analytical and numerical detail, and graphically illustrated for easy-to-understand results. Scientists in research institutes and academics in universities working on nonlinear systems, adaptive control and distributed control will find the book of interest, as it contains multi-disciplinary problems and covers different areas of research.

Contents
1. Introduction
2. Preliminaries
3. Lyapunov Analysis for Cooperative Adaptive Consensus Under Undirected Graph
6. Finite-Time Leaderless Consensus Control for Systems with First-Order Uncertain Dynamics
7. Finite-Time Consensus for Systems with Second-Order Uncertain Dynamics Under Undirected Topology
9. Finite-Time Leaderless Consensus Control for Systems with High-Order Uncertain Dynamics

3.4. Modeling and Simulation with Compose and Activate
Contributed by: Stephen L Campbell, slc@ncsu.edu


System modeling and simulation is a fundamental aspect of most areas of science and engineering. This has
led to the development of software packages aimed at helping speed up the process of modeling, simulation, optimization, analysis, and assessment of systems. More advanced system modeling software provide multiple ways of creating models: models can be programmed in specialized languages, they can be graphically constructed as block-diagrams and state machines, or expressed mathematically in equation-based languages. This book is about two new free software packages, called Altair Compose and Altair Activate providing all these modeling facilities.

Compose is a multi-language environment for scientific computation with special emphasis on modeling, simulation, optimization, and assessment. This book will focus on the newly developed Open Matrix Language (OML) which is is part of the Matlab-like family of languages such as Matlab, Scilab, and Octave. OML is compatible with Octave and provides bridges to Python and Tcl/Tk. An open-source version of OML has been released in 2018, available from www.openmatrix.org.

Activate is an open-system graphical modeling and simulation environment providing signal-based modeling as well as physical system component-based modeling, where the latter supports Modelica and Spice libraries. OML is the underlying scripting language in Activate for defining model parameters, programatically constructing models and performing pre and post processing.

Basic editions of Compose and Activate are available for free from Altair at https://www.altair.com/mbd2019. Basic Compose OML includes a number of toolboxes, such as the Control Toolbox. Basic Activate includes many libraries as well. All the examples in this book have been modeled and simulated with the basic editions. Compose and Activate run under the windows operating system. There is also a Linux version of Compose with OML. A Linux version of Activate is in development and should be available in 2019.

The professional versions integrate with numerous 1D and 3D simulation tools and are available from Altair as well. This book provides a tutorial in the use of Compose and Activate. Part I introduces Compose and OML and its use for modeling, simulation and optimization of dynamical systems. Part II describes graphical system modeling and optimization with Activate. The support of equation-based modeling language Modelica in Activate is also presented and illustrated through a number of examples.

Throughout the book numerous examples of varying complexity are carefully developed and worked out. The examples are drawn from several application areas including mechanical systems, biological systems, electrical systems, and control and signal processing systems.

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Part I Compose
1 General Information
2 Introduction to OML
3 Modeling and Simulation in OML
4 Optimization
5 Examples
Part II Altair Activate
6 Introduction
7 Expression Blocks
8 Beyond single run simulations
9 Examples
3.5. Predictive Control for Linear and Hybrid Systems: Software and Course Slides
Contributed by: Manfred Morari, morari@seas.upenn.edu

Course slides and software are now available for the book “Predictive Control for Linear and Hybrid Systems” by Francesco Borrelli, Alberto Bemporad and Manfred Morari, Cambridge University Press.

Book description and order form: https://goo.gl/3VoxpF
Software and slides: https://goo.gl/FTYXSw Tab: Resources / Course Files
4  Journals

4.1. Systems & Control Letters
Contributed by: Lusia Veksler and Miroslav Krstic, lveksler@ucsd.edu

- Robust deterministic least-squares filtering for uncertain time-varying nonlinear systems with unknown inputs, Mahdi Abolhasani, Mehdi Rahmani, P. 1-11
- Resilient consensus of switched multi-agent systems, Yilun Shang, P. 12-18
- Exact controllability of stochastic differential equations with multiplicative noise, V. Barbu, L. Tubaro, P. 19-23
- A model for system uncertainty in reinforcement learning, Ryan Murray, Michele Palladino, P. 24-31
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- Input-to-state stability of switched systems with explicit gain functions, Haofei Meng, Zhiyong Chen, P. 39-47
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4.2. Evolution Equations and Control Theory
Contributed by: Irena Lasiecka, lasiecka@memphis.edu

- Evolution Equations and Control Theory, EECT
March 2019, Volume 8, Issue 1, EECT Special issue on nonlinear wave phenomena in continuum physics
http://aimsciences.org/journal/A0000-0000/2019/8/1
2017 Impact Factor: 1.049

- Introduction to the special issue “Nonlinear wave phenomena in continuum physics: Some recent findings” Pedro M. Jordan and Barbara Kaltenbacher 2019, 8(1): i-iii
- Strongly nonlinear perturbation theory for solitary waves and Bions John Boyd 2019, 8(1): 1-29
- Some remarks on the model of rigid heat conductor with memory: Unbounded heat relaxation function Sandra Carillo 2019, 8(1): 31-42
- On a C-integrable equation for second sound propagation in heated dielectrics Ivan C. Christov 2019, 8(1): 57-72
- Pattern formation in flows of asymmetrically interacting particles: Peristaltic pedestrian dynamics as a case study Yuri B. Gaididei, Christian Marschler, Mads Peter Sørensen, Peter L. Christiansen, Jens Juul Rasmussen and Jens Starke 2019, 8(1): 73-100
- Finite-amplitude acoustics under the classical theory of particle-laden flows Pedro M. Jordan 2019, 8(1): 101-116
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- Traveling wave solutions to modified Burgers and diffusionless Fisher PDE’s Ronald Mickens and Kale Oyedeji 2019, 8(1): 139-147
- Nonlinear waves in thermoelastic dielectrics Angelo Morro 2019, 8(1): 149-162
- Optimal scalar products in the Moore-Gibson-Thompson equation Marta Pellicer and Joan Solà-Morales 2019, 8(1): 203-220
- Shock wave formation in compliant arteries Cristóbal Rodero, J. Alberto Conejero and Ignacio García-Fernández 2019, 8(1): 221-230
- Anti-plane shear Lamb’s problem on random mass density fields with fractal and Hurst effects Xian Zhang, Vinesh Nishawala and Martin Ostoja-Starzewski 2019, 8(1): 231-246

4.3. IEEE/CAA Journal of Automatica Sinica
Contributed by: Yan Ou, yan.ou@ia.ac.cn

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- Optimal Decoupling Control Method and Its Application to a Ball Mill Coal-pulverizing System. Y. Fu, C. W. Hong, and J. Y. Li, page 1035
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Predictive Tracking Control of Network-Based Agents With Communication Delays. T. Y. Zhang and G. P. Liu, page 1150

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

International Journal of Control, Automation, and Systems (IJCAS)
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4.5. IET Control Theory & Applications
Contributed by: Alexandria Lipka, alipka@theiet.org

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Volume 13
January 2019
http://digital-library.theiet.org/content/journals/iet-cta/13/2

- Griselda Ivone Zamora-Gómez, Arturo Zavala-Río, Daniela Juanita López-Araujo, Víctor Santibáñez, Further results on the global continuous control for finite-time and exponential stabilisation of constrained-input mechanical systems: desired conservative-force compensation and experiments, Pages 159 –170
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Contributed by: Zou Tiefeng, tfzou@scut.edu.cn

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http://www.springer.com/engineering/control/journal/11768

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4.7. IET Cyber-Systems and Robotics
Contributed by: Chao Xu, cxu@zju.edu.cn

IET Cyber-systems and Robotics (IET-CSR) invites authors to submit papers as well as organize special issues in the broad area of cyber-systems and robotics. Please submit original research papers or review articles at https://digital-library.theiet.org/content/journals/iet-csr.

The IET-CSNR is a gold Open Access journal that publishes novel research and original survey articles in the broad areas of cyber-systems and robotics, which emphasizes all kinds of artificial intelligent systems (AIS) enabled by advanced electronics and modern information technologies. The journal provides a forum for multi-disciplinary research of cybernetics and robotics to reflect the most recent evolution of Weiner’s Cybernetics in an information-rich world.

The topics of interest include, but are not limited to:

***Cyber-related topics***
- Autonomous driving vehicles
- Brain-computer interface (BCI)
- Cybernetic physics with applications, e.g., quantum control; adaptive optics; active flow control; nano-scale manipulation, etc.
- Smart metering and pricing
- Collective behaviours & swarming intelligence
- Computational & machine intelligence
- Data science & applications
- Environment sensing & monitoring
- Medical signal & image processing
- Modern cyber-systems in agriculture

***Robotics-related topics***
- Autonomous unmanned systems, e.g., aerial robotics, surface vehicles, space borne, etc.
- Bio-inspired locomotion & robotics
- Environment perception
- Robotic learning
- Industrial & medical robotics
- Real-time computing for robot control
- Robotics in challenging environments, e.g., space robotics, nuclear facilities, etc.
- Environment sensing & monitoring
- Robotic dynamics & control, navigation & planning
- Soft materials & robotics
- Swarming robotics

4.8. Asian Journal of Control
Contributed by: Li-Chen Fu, lichen@ntu.edu.tw
Regular Papers:

1. Paper Title: Optimal Distance Function for Locally Weighted Average Prediction of Just-in-time Methods (Pages: 2055-2064)
   Authors: Yusuke Fujimoto, Ichiro Maruta and Toshiharu Sugie
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3. Paper Title: Wind Turbine Multivariable Optimal Control based on Incremental State Model (Pages: 2075-2087)
   Authors: José Miguel Adánez, Basil Mohammed Al Hadithi and Agustín Jiménez
4. Paper Title: Symbolic Geometric Modelling of Tree-structure Robotic Mechanisms Using Lie Groups and Graph Theory (Pages: 2088-2100)
   Authors: Mohamed Abderrahim, Juan A. Escalera and Fares Abu-Dakka
   Authors: Chih-Lyang Hwang and John Y Hung
6. Paper Title: Exponential Mean-square Stability of Stochastic String Hybrid Systems under Continuous Non-gaussian Excitation (Pages: 2116-2129)
   Author: Leslaw Socha
7. Paper Title: Wide-area Stabiliser on Sliding Mode Control for Cross-area Power Systems with Random Delay and Packet Dropouts (Pages: 2130-2142)
   Authors: Meng Li and Yong Chen
8. Paper Title: Robust Tracking Control and Stabilization of Underactuated Ships (Pages: 2143-2153)
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    Authors: Shenquan Wang, Yulian Jiang and Yuanchun Li
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12. Paper Title: Event-Triggered Fault Detection for Networked Control Systems Subject to Packet Dropout (Pages: 2195-2206)
    Authors: Manel Atitallah, Mohamadreza Davoodi and Nader Meskin
    Authors: Jiyong Tan, Songyi Dian and Tao Zhao
14. Paper Title: The Method of Reagent Control Based on Time Series Distribution of Bubble Size in a Gold-antimony Flotation Process (Pages: 2223-2236)
Authors: Zhongmei Li and Weihua Gui

15. Paper Title: Finite-time Synchronization of Complex-valued Delayed Neural Networks with Discontinuous Activations (Pages: 2237-2247)
Authors: Enli Wu, Xinsong Yang, Chen Xu, Fuad E. Alsaadi and Tasawar Hayat

16. Paper Title: Vibration-attenuation Controller Design for Structural Systems with Multi-rate Sampled Data (Pages: 2248-2259)
Authors: Falu Weng, Yi Guo, Yuanchun Ding, Shuren Han and Feiyue Geng

17. Paper Title: Delayed Feedback MPC Algorithm of Vehicle Platoons Subject to Constraints on Measurement Range and Driving Behaviors (Pages: 2260-2270)
Authors: Shiming Yu, Sainan Wu, Yunbo Zhao and Defeng He

18. Paper Title: Economic Optimization and Control Based on Multi Priority Rank RTO and Double Layered MPC (Pages: 2271-2280)
Authors: Hongguang Pan, Weimin Zhong and Zaiying Wang

19. Paper Title: Stability Analysis and L2-gain Of Switched Neutral Systems with all Unstable Subsystems (Pages: 2281-2289)
Authors: Haiyan Wang, Baowei Wu and Yue-E Wang

20. Paper Title: Exponential Stabilization of Time-varying Delayed Complex-valued Memristor-based Neural Networks via Impulsive Control (Pages: 2290-2301)
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Authors: Po-Wen Hsueh, Mi-Ching Tsai and Chun-Lin Chen

3. Paper Title: Hierarchical Model Predictive Control for Parallel Hybrid Electrical Vehicle (Pages: 2331-2342)
Authors: Jiangtao Fu, Shuzhong Song, Zhumu Fu and Jianwei Ma

4. Paper Title: Pinning Consensus Analysis for Nonlinear Second-order Multi-agent Systems with Time-varying Delays (Pages: 2343-2350)
Authors: Dandan Zhang, Qiang Song, Yang Liu and Jinde Cao

5. Paper Title: Finite-time Scaled Consensus in Discrete-time Networks of Agents (Pages: 2351-2356)
Author: Yilun Shang

6. Paper Title: Prescribed Performance Fine Attitude Control for A Flexible Hypersonic Vehicle With Unknown Initial Errors (Pages: 2357-2369)
Authors: He-Wei Zhao, Yong Liang, Xiu-Xia Yang and Yun-An Hu

7. Paper Title: A Cross-coupling Control Approach for Coordinated Formation of Surface Vessels with Uncertain Disturbances (Pages: 2370-2379)
Authors: Mingyu Fu, Lingling Yu, Yuanhui Wang and Jianfang Jiao
8. Paper Title: Viability Criteria for a Switched System on Bounded Polyhedron (Pages: 2380-2387)
Authors: JianFeng Lv, Yan Gao and Na Zhao
5 Conferences

5.1. IEEE Conference on Decision and Control
Contributed by: Francesco Rossi, francesco.rossi@math.unipd.it

It is my honor and pleasure to invite you to attend CDC 2019 in Nice, France. Nice, with its millennial history, has always been a warm and welcoming city. Besides being a great tourist destination on the Mediterranean sea, it is also a dynamic city, with several hi-tech companies and R&D centers, a fantastic place for congresses and conventions, as well as a great cultural place. Together with the Organizing Committee, we are giving our best to ensure a rich and diverse program. We wish to have the pleasure to meet you here in 2019. (Carlos Canudas-de-Wit, General Chair)

The 58th IEEE Conference on Decision and Control will be held Wednesday through Friday, December 11-13, 2019 at the Palais des Congrès et des Expositions Nice Acropolis, Nice, France. The conference will be preceded by technical workshops on Tuesday, December 10, 2016.

The CDC is recognized as the premier scientific and engineering conference dedicated to the advancement of the theory and practice of systems and control. The CDC annually brings together an international community of researchers and practitioners in the field of automatic control to discuss new research results, perspectives on future developments, and innovative applications relevant to decision making, automatic control, and related areas.

The IEEE CDC is hosted by the IEEE Control Systems Society (CSS) in cooperation with the Society for Industrial and Applied Mathematics (SIAM), and the Japanese Society for Instrument and Control Engineers (SICE). The 2019 CDC will feature contributed and invited papers, as well as tutorial sessions and workshops.

Aside from the technical sessions, the 2019 CDC will feature the Bode Lecture and four semi-plenary lectures. The Bode Lecture will be presented by Prof. Lei Guo, from the Institute of Systems Science, Chinese Academy of Sciences. The Semi-Plenary speakers will be:
- Alessandro Astolfi, Imperial College, UK and Univ. Rome Tor Vergata, Italy
- Francis Bach, INRIA, France
- Domitilla Del Vecchio, MIT, USA
- Robert Mahony, Australian National University, Australia

Important deadlines:
- Invited Session Proposals Due: March 7
- Initial Paper Submissions Due: March 15
- Workshop Proposals Due: May 2

Further details can be found at the CDC2019 website:
https://cdc2019.ieeecss.org/
5.2. **SIAM Conference on Control and Its Applications**  
Contributed by: Maxwell Hayes, Hayes@siam.org

SIAM Conference on Control and Its Applications (CT19)  
Abstract and Full Paper Submission Deadlines Extended to January 21, 2019  
January 21, 2019: Abstracts for contributed and minisymposium speakers  
January 21, 2019: Full Paper for Consideration in Proceedings (Conference participants have the option to submit a full paper for consideration in the conference proceedings.)  
Sponsored by the SIAM Activity Group on Control and Systems Theory (SIAG/CST)

Location and Date:  
Chengdu Cynn Hotel (also known as Xanadu Hotel)  
Chengdu, China  
June 19-21, 2019

General Conference Chair:  
Jiliu Zhou, Chengdu University of Information Technology, China

Conference Co-Chairs:  
William Levine, University of Maryland, College Park, U.S.  
Richard Stockbridge, University of Wisconsin-Milwaukee, U.S.

Organizing Committee:  
Jean-Pierre Barbot, École Nationale Supérieure de l’Electronique et de ses Applications, France  
Catherine Bonnet, Inria, France  
Sören Christensen, University of Hamburg, Germany  
Michael Demetriou, Worcester Polytechnic Institute, U.S.  
Daniel Ho, City University of Hong Kong, China  
Zengguang Hou, Chinese Academy of Science, China  
Matthew James, Australian National University, Australia  
Tao Li, East China Normal University, China  
Hideo Nagai, Kansai University, Japan  
Bozenna Pasik-Duncan, University of Kansas, U.S.  
Shuenn-Jyi Sheu, National Central University, China  
Amit Surana, United Technologies Research Center, U.S.  
Shanjian Tang, Fudan University, China  
Zhen Wu, Shandong University, China

The Call for Presentations for this conference is available at: [http://siamct19.cuit.edu.cn/index.htm#promo](http://siamct19.cuit.edu.cn/index.htm#promo). Please visit [http://siamct19.cuit.edu.cn/INFO_FOR_PARTICIPANTS/Submissions.htm](http://siamct19.cuit.edu.cn/INFO_FOR_PARTICIPANTS/Submissions.htm) for detailed submission information. For additional information, contact siamct19@cuit.edu.cn.

5.3. **International Conference on Methods and Models in Automation and Robotics**  
Contributed by: Pawel Dworak, pawel.dworak@zut.edu.pl

24th International Conference on Methods and Models in Automation and Robotics
26-29 August 2019, Amber Baltic Hotel, Miedzyzdroje, Poland

It is our great pleasure to invite You to participate in the 24th International Conference on Methods and Models in Automation and Robotics, MMAR 2019 to be held in Miedzyzdroje, Poland, from August 26th to August 29th, 2019.

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 24th 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 24th International MMAR Conference in Miedzyzdroje, Poland. 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 4, 2019: Paper submission
- May 20, 2019: Notification of acceptance
- June 24, 2019: Registration
- June 24, 2019: Camera-ready paper submission
For more information see http://www.mmar.edu.pl

5.4. International Symposium on Autonomous Systems
Contributed by: Youmin Zhang, Youmin.Zhang@concordia.ca

Last Call-for-Papers: The 3rd International Symposium on Autonomous Systems (ISAS 2019,) May 29-31, 2019, Shanghai, China (www.isas.cqu.edu.cn)

On behalf of the ISAS 2019 Organizing Committee, this is to invite you to submit your contributions to the The 3rd International Symposium on Autonomous Systems (ISAS 2019), May 29-31, 2019, Shanghai, China (www.isas.cqu.edu.cn).

The 3rd International Symposium on Autonomous Systems, ISAS 2019, will be held in Shanghai, China, during May 29-31, 2019. The conference is organized by Chongqing University, Shanghai Jiao Tong University, China, Star Institute for Intelligent Systems, China, University of Texas at Arlington, USA, and technically co-sponsored by IEEE Computational Intelligence Society, Technical Committee on Reliable Control Systems, Chinese Association of Automation, State Key Laboratory of Synthetical Automation for Process Industries, Northeastern University, China, and Key Laboratory of System Control and Information Pro-
ISAS focuses on both theory and applications mainly covering the topics of artificial intelligence, control, automation, robotics and autonomous systems. In addition to the technical sessions, there will be invited sessions, panel sessions and keynote addresses.

The topics of interest include, but are not limited to:

- Artificial intelligence (AI): Artificial intelligence and philosophy, Automated reasoning and inference, Case-based reasoning, Cognitive aspects of AI, Commonsense reasoning, Constraint processing, Heuristic search, High-level computer vision, Intelligent interfaces, Intelligent robotics, Knowledge representation, Machine learning, Multi-agent systems, Natural language processing, Planning and theories of action, Reasoning under uncertainty or imprecision
- Autonomous Systems: Unmanned system command and control, Cooperative control of unmanned systems, Unmanned system modeling and simulation, Unmanned system dynamics, New concept unmanned systems, Robotic systems, Unmanned aerial vehicles
- Networked Control Systems: Coordinated control and estimation over networks, Control and computation over sensor networks, Control under communication constraints, Control and performance analysis issues, Synchronization of activities across a controlled network, Stability analysis of controlled networks, Analysis of networks as hybrid dynamical systems
- Intelligent Control: Adaptive control, Co-operative control, Intelligent systems, Discrete event systems, Multi-agent systems, Neural networks, Fuzzy systems, Control of biological systems
- Automation: Man-machine interactions, Process automation, Intelligent automation, Factory modeling and simulation, Home, laboratory and service automation, Network-based systems, Planning, scheduling and coordination, Nano-scale automation and assembly, Instrumentation systems, Biomedical instrumentation and applications, Building energy efficiency
- Robotics: Modeling and identification, Robot control, Mobile robotics, Mobile sensor networks, Perception systems, Micro robots and micro-manipulation, Visual servoing, Search, rescue and field robotics, Robot sensing and data fusion, Localization, navigation and mapping, Dexterous manipulation, Medical robots and bio-robotics, Human centered systems, Space and underwater robots, Tele-robotics, Mechanism design and applications.
- Emerging Technologies: Internet of things, Cyber-physical systems, Smart buildings, Smart grid, Energy management systems, Big data, Electric vehicles and intelligent transportation.

Keynote Speeches
Professor Jie Chen, Tongji University
Professor Jie Huang, The Chinese University of Hong Kong
Professor Marios Polycarpou, University of Cyprus
Professor Jose Principe, University of Florida

Important Dates (Please check the latest information at www.isas.cqu.edu.cn)
January 10, 2019: Deadline for Invited Session Proposals
January 10, 2019: Deadline for Full Paper Submission
February 28, 2019: Notification of Acceptance/Rejection
March 15, 2019: Deadline for Camera Ready Manuscript Submission
March 15, 2019: Deadline for Advance Registration
Welcome and look forward to receiving your contributions and attendance to the ISAS 2019!

Steering Committee:
Frank L. Lewis, University of Texas at Arlington, USA
Hailong Pei, South China University of Technology, China
Yongduan Song, Chongqing University, China
Ning Li, Shanghai Jiao Tong University, China
Kimon P. Valavanis, Denver University, USA
Youmin Zhang, Concordia University, Canada
Tianyou Chai, Northeastern University, China

Honorary Chair:
Frank Lewis, U of Texas at Arlington, lewis@uta.edu

General Chair:
Yongduan Song, Chongqing University, ydsong@cqu.edu.cn
Xinping Guan, Shanghai Jiao Tong University, xpguan@sjtu.edu.cn

Program Chair:
Changyun Wen, Nanyang technological University, ecywen@ntu.edu.sg
Cailian Chen, Shanghai Jiao Tong University, cailianchen@sjtu.edu.cn

5.5. International Conference of Intelligent Unmanned System
Contributed by: Youmin Zhang, Youmin.Zhang@concordia.ca

Call-for-Papers: The 15th International Conference of Intelligent Unmanned System (ICIUS 2019),
August 27-29, 2019, Beijing (http://icius2019.org/)

On behalf of the ISAS 2019 Organizing Committee, this is to invite you to submit your contributions to The
15th International Conference of Intelligent Unmanned System (ICIUS 2019), to be held on August 27-29,
in the Techart Plaza which is situated in a famous location in the heart of Beijing.

The ICIUS 2019 is organized by the International Society of Intelligent Unmanned System (ISIUS) and Univ.
Sci. and Tech. Beijing, China, and technically co-sponsored by the ISIUS, IEEE SMC (Beijing) and ISME (Tai-
wan). The ICIUS 2019 offers a unique and interesting platform for scientists, engineers and practitioners
throughout the world to present and share their most recent research and innovative ideas in the areas of
unmanned systems, robotics, automation, and intelligent systems. The topics of interests include, but are
not limited to:

- Unmanned Systems: Micro air vehicle, Micro-satellite, Unmanned aerial vehicle, Underwater vehicle,
Multi-agent systems, Autonomous ground vehicle, Blimp, Swarm intelligence
- Robotics and Biomimetics: Artificial muscle actuators, Smart sensors, Design and applications of MEMS
and NEMS system, Intelligent robot systems, evolutionary algorithm, Control of biological systems, Bio-
logical learning control systems, Neural networks, Bioinspired systems
- Control and Computation: Distributed and embedded systems, Complex systems, Embedded intelligent control, Pervasive computing, Soft computing, Discrete event systems, Hybrid systems, Networked control systems, Delay systems, Identification and estimation, Nonlinear systems, Precision motion control, Control applications, Control engineering education, Computer Architecture & VLSI, Signal, image and multimedia processing
- Intelligent Systems: Ubiquitous computing, Algorithms, Distributed intelligence, Distributed and decentralized intelligent control, Fuzzy systems, AI and expert systems, Virtual reality, Wearable computers, Information systems and retrieval, Software engineering, Knowledge data engineering, Data communications and compression
- Space Robots: Aircraft flight dynamics and control, Space navigation and guidance, Spacecraft cooperative and control, Real-time distributed simulation, Orbital servicing technology in space, Traffic management and controls.

Invited Sessions:
The conference will feature invited sessions on new topics and innovative applications. These sessions will consist of 5-8 articles and undergo a regular review process. Prospective organizers should include a brief statement of purpose for the session as well as the abstracts of the papers.

Organized Sessions:
The conference organizing committee encourages participants to host multiple sessions, which address specific topics of high current interest related to various aspects of ICIUS. Each Organized Session should include at least five presentations in principle. Submit your proposal(s) to online by February 1, 2019. The results for acceptance will be notified by March 1, 2019.

Important Dates:
- Abstract submission — March 1, 2019
- Full paper submission — May 1, 2019
- Acceptance notification — June 1, 2019
- Final paper submission — June 31, 2019
- Early bird registration — July 7, 2019
- Hotel registration — July 7, 2019

Steering Committee:
Muljowidodo, Institute of Technology Bandung
Kenzo Nonami, Chiba University
Kwang-Joon Yoon, Konkuk Univ.
Hoon Cheol Park, Konkuk Univ.

General Chairs:
Wei He, Univ. Sci. and Tech. Beijing
Lung-Jieh Yang, Tamkang Univ.

Program Chair:
Youmin Zhang, Concordia

Contact:
5.6. International Conference on Unmanned Aircraft System
Contributed by: Didier Theilliol, didier.theilliol@univ-lorraine.fr

First Call-for-Papers: 2019 International Conference on Unmanned Aircraft Systems (ICUAS’19)
(http://www.uasconferences.com)

On behalf of the ICUAS’19 Organizing Committee, this is to invite you to submit your contributions to the 2019 International Conference on Unmanned Aircraft Systems (ICUAS’18)
http://www.uasconferences.com
The conference is co-sponsored by the IEEE CSS and RAS, and several other organizations.

The 2019 International Conference on Unmanned Aircraft Systems, ICUAS’19, will be held on June 11-14, in the Atlanta Marriott Buckhead Hotel and Conference Center which is situated in a supreme location in the heart of Atlanta. June 11 will be a Workshop/Tutorial full-day, followed by a three-day technical Conference on June 12-14. Judging from the interest ICUAS has drawn over the past years and its growth, ICUAS’19 is expected to continue on this path and attract the highest number of participants from academia, industry, federal and state agencies, government, the private sector, users, practitioners and engineers who wish to be affiliated with and contribute technically to this highly demanding and evolving and expanding field. ICUAS’19 is fully sponsored by the ICUAS Association, which is a non-profit organization. Information about the Association may be found at www.icuas.com. The major themes of ICUAS’19 will be: design for trusted and assured autonomy, metrics for autonomy, and design for resilience. These focus area topics are center-stage in the attempt to design and build high-confidence UAS/RPAS.

In addition, ICUAS’19 will include a separate track on regulations, policy, legal and ethical issues that are essential to allow for integration of UAS/RPAS in the national airspace. National and international organizations, agencies, industry, military and civilian authorities are working towards defining roadmaps of UAS/RPAS expectations, technical requirements and standards that are prerequisite to their full utilization, as well as legal, policy and ethical issues. The next generation of UAS/RPAS is expected to be used for a wide spectrum of civilian and public domain applications. Challenges to be faced and overcome include, among others, see-and-avoid systems, robust and fault-tolerant flight control systems, payloads, communications, levels of autonomy, manned-unmanned swarms, network-controlled swarms, as well as challenges related to policies, procedures, regulations, safety, risk analysis assessment, airworthiness, certification issues, operational constraints, standardization and frequency management, all of paramount importance, which, coupled with ‘smart’, ‘environmentally friendly’ cutting edge technologies will pave the way towards full integration of UAS/RPAS with manned aviation and into the respective national airspace. ICUAS’19 aims at bringing together different groups of qualified military and civilian representatives worldwide, organization representatives, funding agencies, industry and academia, to discuss the current state of unmanned aviation advances, and the roadmap to their full utilization in civilian and public domains. Special emphasis will be given to research opportunities, and to ‘what comes next’ in terms of the essential technologies that need to be utilized to advance the state-of-the-art.
Conference topics include (but not limited to): Airspace Control; Integration; See/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; Pay- loads; 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.

Unmanned system autonomy, collaboration and coordination, formation control, validation and verification and unmanned system design for assured autonomy, are topics of great interest to ICUAS’19.

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 and international authorities need, and what are the crucial next steps that need to be completed before UAS/RPAS are utilized in everyday life applications.

Important Dates (Please check the latest information at http://www.uasconferences.com):
February 12, 2019: Full Papers/ Invited Papers/Tutorial Proposals Due
April 15, 2019: Acceptance/Rejection Notification
May 10, 2019: Upload Final, Camera Ready Papers
April 15 - May 10, 2019: Early Registration

Paper Submission:
Papers must be submitted electronically. Go to https://controls.papercept.net. Click on “Submit a Contribution to ICUAS’19” and follow the steps. The paper format must follow IEEE paper submission rules. Submitted papers should be classified as Contributed, Poster or Invited Session papers. The maximum number of pages for a contributed/invited paper submission is 10, and for a poster paper is 6. Accepted, contributed/invited session papers only, will be allowed up to two additional pages for a charge of $100 per additional page. Illustrations and references are included in the page count. Poster papers will allow for researchers/practitioners to present novel/cutting edge ideas with potential, however, not yet fully developed.

Invited Sessions:
Proposals must be submitted/uploaded electronically. A Summary Statement describing the motivation and relevance of the proposed session, paper titles and author names must be uploaded electronically by February 12, 2019. Authors must also submit full versions of invited papers electronically, 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 12, 2019.

Review Process:
All submitted papers will undergo a peer review process following IEEE rules and standards. Authors will
be notified of results at the latest by April 15, 2019. Accepted papers must be uploaded electronically no later than May 10, 2019. Authors are encouraged to accompany their presentations with multimedia material, which will be included in the Conference Digital Proceedings. Only Contributed or Invited Session papers will be acquired by IEEE and they appear in IEEE Xplore.

Paper presentation:
Contributed/Invited Session papers will be grouped in Technical Sessions and will be allocated 20 minutes for oral presentation, which includes questions from the audience. Poster papers will be grouped based on subject. Presenters are encouraged to supplement the poster with additional slides, video or software demonstrations, etc. All poster paper presentations will be scheduled in one day.

Welcome and look forward to receiving your contributions and attendance to the ICUAS’19! For information about the ICUAS Association, Inc., see www.icuas.com.

ICUAS ASSOCIATION LIAISON
Kimon P. Valavanis, U of Denver, kimon.valavanis@du.edu

GENERAL CHAIRS
Didier Theilliol, U of Lorraine, Didier.theilliol@univ-lorraine.fr
YangQuan Chen, UC Merced, yangquan.chen@ucmerced.edu

PROGRAM CHAIRS
James Morrison, KAIST, Korea, james.morrison@kaist.edu
Antonios Tsourdos, Cranfield Univ., a.tsourdos@cranfield.ac.uk

5.7. IFAC Workshop on Distributed Estimation and Control in Networked Systems
Contributed by: Shreyas Sundaram, sundara2@purdue.edu

8th IFAC Workshop on Distributed Estimation and Control in Networked Systems (NECSYS 2019)
September 16-17, 2019
Chicago, Illinois, United States of America
http://necsys2019.csl.illinois.edu

Invitation:
The Organizing Committee has the pleasure of inviting you to participate in the 8th IFAC Workshop on Distributed Estimation and Control in Networked Systems (NECSYS 2019), which will be held on September 16-17, 2019. The workshop venue will be Wintrust Hall near Downtown Chicago, located a few minutes from the Magnificent Mile, the Loop, and Lake Michigan.

Scope:
Networked systems and complex dynamical systems are composed of a large number of simple systems interacting through a communication medium. These systems arise as natural models in many areas of engineering and science, such as sensor networks, autonomous robots and vehicles, Internet of Things, smart
manufacturing, power networks, biological networks, and animal groups.

The workshop will focus on recent theoretical and experimental developments in the last few years for the analysis, design, identification, estimation, and control of networked systems. The aim of this workshop is to bring together researchers from control, computer science, communication, game theory, statistics, mathematics and other areas, as well as practitioners in the related industrial or educational fields, to discuss emerging topics in networked systems of common interest.

Program & Plenary Speakers:
Following the tradition of previous NECSYS workshops, the workshop will be single track and will feature plenary presentations and poster/interactive sessions of contributed papers. The exciting lineup of plenary speakers includes:
- Domitilla del Vecchio (MIT)
- Emilio Frazzoli (ETH/nuTonomy)
- Fredrik Gustafsson (Linkoeping)
- Maurice Heemels (Eindhoven)
- Mihailo Jovanovic (USC)
- Naomi Leonard (Princeton)
- Ben Recht (Berkeley)
- Sri Sarma (Johns Hopkins)
- Alireza Tahbaz-Salehi (Northwestern)
- Dawn Tilbury (Michigan/NSF)

Important Dates:
* Paper submission deadline: April 30, 2019
* Notification of acceptance: July 9, 2019
* Final paper submission deadline: July 31, 2019

Committees:
Conference Chair
* Geir Dullerud (University of Illinois at Urbana-Champaign, USA)

Conference Co-chairs:
* Mohamed Ali Belabbas (University of Illinois at Urbana-Champaign, USA)
* Shreyas Sundaram (Purdue University, USA)

Program Committee Chair:
* Henrik Sandberg (KTH Royal Institute of Technology, Sweden)

Program Committee Co-chairs:
* Bart Besselink (University of Groningen, Netherlands)
* Dennice Gayme (Johns Hopkins University, USA)
5.8. SHARE Conference: Sharing Economy – Humans, Automation, REsilience
Contributed by: Michael Kane, mi.kane@northeastern.edu

March 21-22, 2019
Northeastern University
https://web.northeastern.edu/rcshare/

Multiple aspects of our 21st century lives are touched by sharing economy platforms, which enable customer-to-customer matching and transactions, more efficient infrastructure utilization, and actively lower market friction. These electronic platforms span a broad spectrum of sectors, practices, and organizational structures. There are inherent tensions and contradictions related to the objectives, boundaries, and environmental and societal impacts of the sharing economy.

This conference brings together leaders from the private sector and researchers from disciplines including engineering, law, computing, business, and public policy to: (1) Identify and compare regulatory and data sharing practices that influence the real-world implementation of sharing economy platforms. (2) Consider emerging technologies and algorithms for optimizing design, operation, incentives, and security. (3) Address the role of sharing economy platforms in working toward socially desirable outcomes, including sustainable growth, social equity and improved resilience.

Specific application areas to be explored at the conference include transportation, cloud computing, energy, and healthcare. We aim to engage researchers, policy makers, and industry thinkers in thoughtful discussions about the social, economic and political context in which sharing economy platforms are emerging, approaches to collecting data and evaluating outcomes, and designing recommendations that that influence the real-world implementation of sharing economy platforms. For more information, please visit the conference webpage https://web.northeastern.edu/rcshare/.

5.9. International Conference on the Internet of Things
Contributed by: Kyriakos G. Vamvoudakis, kyriakos@gatech.edu

The 9th International Conference on the Internet of Things (IoT 2019), building on the success of its predecessors since 2008, is the premier forum to share, discuss and witness cutting edge research in all areas of development for the Internet of Things.

Pervasive connectivity, smart devices and demand for data testify to an IoT that will continue to grow by leaps and bounds. Computing power is dropping in price while new sensors are being developed and incorporated into everyday objects, and as people buy into IoT technology, economies of scale lend themselves to the creation of ever more data-centric businesses and applications. Instrumenting and connecting devices has massive potential to deliver a social and economic value. However, there is need for a coordinated effort when rolling out the next generation of self-reporting paradigms.

The Internet of Things Conference is seeking original, high impact research papers on all topics related to the development of the Internet of Things. Papers will be reviewed and selected based on technical novelty, integrity of the analysis and social-environmental impacts and practical relevance. The topic of this year edition will be the Internet of Things for People which encompasses all the applications and ground-
breaking work that is being done in the IoT field to pave the bridge between citizens and everywhere data produced by pervasive technology.

Paper Submission Key Dates:
Paper submission deadline: Friday, May 3, 2019
Papers camera ready deadline: Thursday, July 4, 2019
Conference: October 22-25, 2019

Conference General Chairs:
Diego López de Ipiña, University of Deusto, Spain
Kyriakos G. Vamvoudakis, Georgia Institute of Technology, USA

Technical Program Chairs:
Karin Anna Hummel, JKU Linz, Austria
David Boyle, Imperial College, UK
Matthias Kovatsch, Huawei, Germany

5.10. IFAC Symposium on Advances in Control Education
Contributed by: J. Anthony Rossiter, j.a.rossiter@sheffield.ac.uk

IFAC Symposium on Advances in Control Education: The deadline for the 2019 has been extended to Feb. 18th. The symposium is being held in the same venue (Philadelphia) as this year’s American Control Conference, but in the 3 days before, from July 7-9 - https://ifac-ace2019.org/.

The 12th Symposium on Advances in Control Education, ACE 2019, is an international forum on recent developments and advances in control education. Academic researchers and lecturers in control, R&D specialists in instrumentation, control and industrial automation, and practicing control engineers from a variety of industrial sectors will find it especially rewarding. As in earlier symposia, the program will include plenary lectures, technical sessions, interactive and panel sessions, and educational tool demonstrations.

5.11. International Conference on System Theory, Control and Computing
Contributed by: Radu-Emil Precup, radu.precup@aut.upt.ro


ICSTCC 2019 aims at bringing together under a unique forum, scientists from academia and industry, to discuss the state of the art and the new trends in System Theory, Control and Computer Engineering, promoting professional interactions and fellowship.

ICSTCC 2019 is technically co-sponsored by the IEEE Control Systems Society. In accordance with the Letter of Acquisition signed with IEEE, the Proceedings of ICSTCC 2019 will be submitted for inclusion in IEEE Xplore Digital Library. The Proceedings will also be submitted for indexing in Clarivate Analytics
Conference Proceedings Citation Index (formerly ISI Proceedings).

ICSTCC 2019 conference will be hosted by the beautiful Palace Hotel, Sinaia. Sinaia is one of the most famous and oldest mountain tourist resorts in Romania, known as “The Carpathian Pearl”. It is best known for being the summer residence of the Romanian Royal family. We are planning a number of field trips: Bran Castle (Dracula’s Castle) and Peles Castle.

Confirmed keynote speakers:
- Maria Elena Valcher (University of Padova, Italy)
- Marios M. Polycarpou (University of Cyprus, Cyprus)
- Marcin Paprzycki (Polish Academy of Sciences, Poland)
- Gianluca Tempesti (University of York, UK)

Important dates:
- April 19, 2019: Submission of proposals for invited sessions
- April 26, 2019: Initial submission of papers
- June 28, 2019: Notification of acceptance for papers
- July 26, 2019: Final camera ready manuscript and registration payment

The main areas of interest are: Automation and Robotics; Computer Science and Engineering; Electronics and Instrumentation. All papers should be submitted via the online submission system at http://controls.papercept.net/conferences/scripts/start.pl#STCC19 For further information please contact the organizing committee at: icstcc2019@cs.upt.ro.

5.12. IEEE Colombian Conference on Automatic Control
Contributed by: Jhon Isaza, jhonisaza@itm.edu.co

4th IEEE Colombian Conference on Automatic Control.
Contributed by: Jhon Isaza, contact@ieeeccac2019.com.

Scope: The 4th IEEE Colombian Conference on Automatic Control (CCAC) will be held on October 15-18, 2019 in Medellin-Colombia. This is the fourth in a series that have been successfully established in the Colombian and Latin American region. The objective of the conference is to gather academics and industrial researchers and practitioners to discuss the state of the art, research, and developments in technological advances and applications of control engineering to encourage technology development in Colombia and the Latin American region. The conference includes all aspects around control engineering, from analysis and design to simulation and hardware. Major topics for the event include, but are not limited to, the following:

Applied control for industrial and non-industrial areas, applied control for robots, hybrid systems, intelligent control, mechatronics, mobile robots, modeling of dynamic systems, multi-robot systems, control of power systems, process control and automation, process optimization, sensing and sensor fusion, system identification, systems and signals, control of biological systems and biochemical processes.
Important Dates:
- Paper submission deadline: (March 17 2019) April 1 2019
- Paper decision notification: June 03 2019
- Camera-ready final manuscripts: July 15 2019

Paper submission: The program committee invites you to submit 4 to 6 pages long papers in English through www.ieeeccac2019.com.

Submitted papers to CCAC must be original, not previously published or accepted for publication elsewhere and must not be submitted to any other event or publisher during the entire review process. IEEE policy regarding plagiarism and duplicate submission/publication will be strictly enforced. Accepted and presented papers will be published in the IEEE CCAC 2019 Conference Proceedings and submitted to IEEE Xplore®. Only English versions will be published in IEEE Xplore®.

Venue: The 4th IEEE CCAC 2019 will be held in Medellin from the 15th to 18th of October 2019. Medellin, the 2nd largest city in Colombia, is a vibrant city that offers a wide variety of tourist, gastronomic and cultural attractions.

Contact: Additional details and Conference updates are available at: www.ieeeccac2019.com
Inquiries about the conference may be addressed to: contact@ieeeccac2019.com

5.13. Quantum Science, Engineering and Technology Conference
Contributed by: Daoyi Dong, daoyidong@gmail.com

The Quantum Science, Engineering and Technology Conference (qSET) aims to bring together leading experts and students in the fields of quantum science, engineering and technology to present their best research and share their knowledge, in the form of plenary talks, keynote talks, invited talks, posters and pre-conference workshops. The conference covers a broad range of topics within quantum science and technology, including quantum computation, quantum communication, quantum control, quantum engineering, quantum sensing, quantum simulation and quantum navigation.

The first conference will take place in Canberra, Australia, 8-11 April 2019. Attendees are strongly encouraged to complete their registration at their earliest convenience. Participants are welcome to submit poster abstracts for reviewing and are also welcome to organize half-day or one-day pre-conference workshops (on 8 April 2019). The conference website is https://www.unsw.adfa.edu.au/conferences/qset. For all enquiries please contact local qSET 2019 organizers at qset2019@gmail.com.

Plenary Speakers
- Professor Michelle Simmons, University of New South Wales, Australia
- Professor Marlan O. Scully, Princeton University, USA
- Professor Franco Nori, RIKEN, Japan and University of Michigan, USA

Keynote Speakers
- Professor David J. Reilly, Microsoft Corporation and University of Sydney, Australia
Contributed by: Driss Mehdi, driss.mehdi@univ-poitiers.fr

The 8th International Conference on Systems and Control (ICSC 2019)
The 8th edition of the International Conference on Systems and Control, technically co-sponsored by IEEE-CSS, will be held on October 23-25, 2019, at the University of Caddi Ayyad, Marrakech, Morocco.

Paper submission: Papers must be submitted electronically via the Web upload system only. The guidelines are given at the ICSC’19 Web site.

Authors are invited to submit the full version of their manuscripts through the online paper submission https://controls.papercept.net/conferences/scripts/start.pl

Important Dates:
Contributed papers, invited session papers: April 15, 2019
Notification of Acceptance / Rejection: June 30, 2019
Final, Camera ready papers due: July 30, 2019
Conference opening: October 23, 2019

Websites:
http://lias.labo.univ-poitiers.fr/icsc/icsc2019/

Program Chairs
Fouad Mesquine, Morocco
Fernando Tadeo, Spain

General Chairs :
Abdellah Benzaouia, Morocco
Mohamed Msaad, France
5.15. Mediterranean Conference on Control & Automation
Contributed by: Daniel Zelazo, dzelazo@technion.ac.il

27th Mediterranean Conference on Control & Automation
July 1 - 4, 2019 Akko, Israel
https://med19.net.technion.ac.il

Dear Friends and Colleagues,
The 27th Mediterranean Conference on Control and Automation (MED 2019) will be held on the 1-4 of July 2019 in Akko, Israel. Akko is situated on the Phoenician northern part of the Mediterranean coast of Israel, with an exceptional history and rich cultural heritage, spanning over 4,000 years. It has been designated by UNESCO as a World Heritage site. MED 2019 will include tutorials and workshops, a technical program of presentations, keynote lectures and social events. It offers a great opportunity for academics, researchers and industrial players working in control and automation to network together, present research progress and address new challenges. The conference will include a wide range of topics on systems, automation, robotics and control including theory, related hardware, software and communication technologies, as well as applications.

All submissions are processed electronically via the PaperCept paper management system. All papers will be peer reviewed. Accepted and presented papers will be published in the digital conference proceedings and made available on IEEE Xplore.

KEYNOTE SPEAKERS
- Amnon Shashua, co-founder, President, and CEO of Mobileye
- Martina Maggio, Lund University
- Florian Dörfler, ETH

IMPORTANT DATES
05 February 2019 (DEADLINE EXTENDED!): Contributed papers, invited sessions, and tutorial proposals are due.

Please visit the conference website for up-to-date details on all conference activities and submission instructions. We look forward to your submissions and participation!

5.16. International Conference on Control, Automation and Systems
Contributed by: Zee Yéon Lee, conference@icros.org

2019 19th International Conference on Control, Automation and Systems (ICCAS 2019), October 15–18, 2019
Call for Papers: http://icros.org/data/download/ICCAS2019/ICCAS2019_CFP.pdf
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.

IMPORTANT DATES
- May 31, 2019: Submission of Regular Papers (3-6 pages)
- June 30, 2019: Submission of Organized Session/Mini-symposium Proposal with Papers and Research Poster Papers (1-2 pages)
- July 31, 2019: Notification of Acceptance
- August 31, 2019: Submission of Final Camera-ready Papers

PAPER SUBMISSION:
Indexed in: IEEE Xplore, EI compendex, and SCOPUS

PLENARY SPEAKERS
- Frank Doyle (Harvard Univ., USA)
- Jun-Ichi Imura (Tokyo Institute of Technology, Japan)
- Eduardo F. Camacho (Univ. of Seville, Spain)
- Tianyou Chai (Northeastern Univ., China)
- Dawn Tilbury (Univ. of Michigan, USA)

ICCAS 2019 will be held on October 15-18, 2019 at ICC Jeju in Jeju, Korea. Jeju is a very beautiful and relaxing island, and selected as the World Natural Heritage. The aim of ICCAS 2019 is to bring together professors, researchers, engineers and students worldwide to present their recent works and discuss the state-of-the-art technologies related to control, automation, robotics and systems.

General Chair: Chung Choo Chung (Hanyang Univ., Korea)
General Co-Chair: Jay H. Lee (KAIST, Korea)
Program Chair: Dong Eui Chang (KAIST, Korea)
Organized by Institute of Control, Robotics and Systems (ICROS)
6 Positions

6.1. PhD: University of Western Ontario, Canada
Contributed by: Jin Jiang, jjiang@eng.uwo.ca

A number of doctoral fellowships are available in the Department of Electrical & Computer Engineering, the University of Western Ontario, Canada for qualified candidates with background or interests in control of electrical power systems, in particular, microgrids with renewable resources, nuclear power plants, including small modular reactors. Ideal candidates will be those with some relevant practical hand-on experience in control and power systems.

Once awarded, the fellowship will be guaranteed for a minimal period of 4 years. The amount of the fellowship is sufficient to cover tuition and living expenses for the candidate to complete the PhD program.

Interested applicants should contact: Dr. Jin Jiang at jjiang@eng.uwo.ca with the following documents.
- detailed CV
- academic transcripts
- description of research interests with justifications of relevant backgrounds.

The positions are available immediately.

6.2. PhD: Newcastle University, UK
Contributed by: Sadegh Soudjani, Sadegh.Soudjani@ncl.ac.uk

A Ph.D. position is available in the area of “Formal Verification and Synthesis of Cyber-Physical Systems” in the School of Computing at Newcastle University, United Kingdom.

Cyber-physical systems (CPS) are systems of collaborating computational elements controlling physical entities. Composition of continuous and discrete models is essential for capturing the behaviour of such systems. Verification and synthesis of CPS are algorithmically studied using abstraction techniques and model checking tools. The goal of this research is to focus on formal verification and controller synthesis of CPS models by addressing robustness and scalability of the algorithms, while taking uncertainty into account, utilising available data from the system and synthesising optimal controllers. Application areas of the research include, among others, smart grids, energy networks and systems biology.

This studentship provides a unique opportunity to perform interdisciplinary, high-impact research within a group of interdisciplinary researchers. The successful candidate will work closely with Dr Soudjani and will join the AMBER group, which gives possibility of collaboration and interaction with scientists in CESI centre on energy applications and in ICOS group on Biosystems. The candidate has an excellent first degree in, e.g., mathematics, engineering, or computer science. For this interdisciplinary research, the candidate is expected to have a strong background in system theory, machine learning, or formal methods.

The School of Computing, including the AMBER group, has recently moved in a new, state-of-the-art, £58 million building which is highly sensorised and can be used as a unique research facility.
Application closing date is 15 February 2019 or until funding a suitable candidate. Expected start date is before September 2019. The appointment will be for 3.5 years. The position is subject to EPSRC regulations and BSc students are eligible to apply. Check the details here (https://bit.ly/2scUbE5) and the conditions here (https://bit.ly/2VFK87I)

Interested individuals should send their detailed curriculum vitae and other supporting documents to Dr Sadegh Soudjani (sadegh.soudjani@ncl.ac.uk). Only potential suitable candidates will be contacted.

6.3. PhD: University of Florida, USA
Contributed by: Warren Dixon, wdixon@ufl.edu

PhD position in the Nonlinear Controls and Robotics Group (http://ncr.mae.ufl.edu/) at the University of Florida.

Applications are being accepted for multiple doctoral student positions focused on Assured Autonomy available for the Fall of 2019. Candidates are expected to conduct theoretical research in formal methods, hybrid systems, stochastic methods, or reinforcement learning for uncertain nonlinear systems with applications in autonomy.

Strong potential exists for summer internships and SMART scholarships at Air Force Research Laboratories (SMART scholarships are available to US citizens only). The compensation will include a competitive salary and the University of Florida benefits package. Interested candidates should contact Warren Dixon by email at wdixon@ufl.edu with information about your academic credentials and a brief statement of research and post education plans.

6.4. PhD: University of Louisiana, USA
Contributed by: Afef Fekih, afeef.fekib@louisiana.edu

The Advanced Controls Laboratory at the University of Louisiana at Lafayette, USA has available funding to support a PhD student in the general area of advanced control design/Fault Tolerant Control with application to dynamic systems. Special considerations will be given to students who have a strong background in power systems such as wind turbines and/or PVs. The successful candidate is expected to have a strong background in control systems theory, and a very good knowledge of power systems. Programming skills in MATLAB/Simulink are required. A genuine interest and curiosity in the subject, excellent oral and written English communication skills are needed.

Applicants shall have a Master’s degree or equivalent in systems and controls, power systems, electrical engineering, mechanical engineering, applied Math or a related discipline. The PhD student is expected to carry out original research and complete coursework throughout the period of appointment. Results will be communicated in the form of journal publications, conference presentations, and the PhD dissertation. The funding covers the cost of full tuition and stipends at a competitive rate and will start in Fall 2019. Interested individuals should send their detailed curriculum vitae, copies of their recent transcripts, a copy of their best publication in English, and if applicable GRE/test scores to Dr. Afeef Fekih (afeef.fekib@louisiana.edu).
6.5. PhD: University College London, UK
Contributed by: Francesca Boem, f.boem@ucl.ac.uk

PhD in Control Engineering, University College London, United Kingdom: A fully funded four-year PhD studentship is available to UK/EU students to develop novel methods for control and monitoring of dynamical network systems.

Starting date: October 2019 (or as soon as possible), Application deadline: until filled. The student will work under the supervision of Dr Francesca Boem within the Department of Electronic and Electrical Engineering, University College London.

The candidate will conduct multi-disciplinary research on complex dynamical systems characterized by i) a large number of states and input points, spatially distributed; ii) an interconnected structure that can be modelled as a network of agents or subsystems; iii) the presence of communication networks at different levels. The PhD student will develop new methods to analyse and control the behaviour of network systems, especially in the case that the presence of unexpected anomalies, such as faults or cyber-attacks, are deviating it from the nominal one. The PhD student will investigate the opportunity to integrate automatic control techniques with statistical and machine learning tools, exploiting the network structure of the systems.

Applicants must hold, or be near completion of a first or upper-second class degree in Engineering, Applied Mathematics, Computer Science, or a related subject, with strong theoretical background and interest in Control Engineering / Automatic Control. The ideal candidate will show understanding of machine learning and optimisation. The candidate must show a strong interest to engage in innovative high-profile research. Fluency in English is also required. For further details: https://bit.ly/2HHv5Yh

Formal applications should be submitted with a CV, a brief statement of motivation and research interests, and with names and email addresses of two referees to f.boem@ucl.ac.uk.

6.6. PhD: Tsinghua University, China
Contributed by: (Samuel) Qing-Shan Jia, jiaqs@tsinghua.edu.cn

The center for intelligent and networked systems (CFINS) at Tsinghua University (Beijing, China) (http://www.cfins.au.tsinghua.edu.cn) invites applications for PhD positions in the field of control and optimization of energy Internet and smart buildings. Potential applicants with knowledge on Markov decision process, power systems, robotic systems, and/or building systems are especially encouraged to apply.

The potential applicant should be expected to receive a Bachelor/MS degree in EE/CS/IE or related areas, or already have a Bachelor/MS degree in these fields. Applications will be reviewed immediately. All applications should be submitted online at http://gradadmission.tsinghua.edu.cn/f/yzlxs/yz_lxs_kstzb/view?id=4939 by 17:00 on Mar. 1, 2019 (Beijing time). Interested applicants, please send an email to (Samuel) Qing-Shan Jia jiaqs@tsinghua.edu.cn to
know more details.

6.7. **PhD: Tallinn University of Technology, Estonia**

Contributed by: Arvo Kaldmae, arvo@cc.ioc.ee

A PhD position is available at Department of Software Science, Tallinn University of Technology, Estonia. The research topic is “Event-based control for differentially flat systems.” More precise topic will be agreed on between the supervisor (Arvo Kaldmäe) and the candidate. The successful candidate must have a master degree and good skills in control theory and/or applied mathematics. The candidate must have excellent English language skills.

If successful, the university will sign an employment contract with the candidate, which guarantees competitive salary for 4 years of studies. The interested candidates should contact Arvo Kaldmäe by email at arvo@cc.ioc.ee with a detailed CV (including a list of publications), the contact information for 1-2 references, and a motivation letter.

6.8. **PhD: KTH Royal Institute of Technology, Sweden**

Contributed by: Håkan Hjalmarsson, hjalmars@kth.se

4 PhDs in Learning of Dynamical Systems.

In this project we study fundamental aspects of learning algorithms for decision and control of dynamical systems, an area having applications in, e.g., robotics, smart buildings, smart grids, and self-driving vehicles. The project is part of the Swedish Research Council funded network of excellence NewLEADS.

A strong background from two or more of the areas control theory, statistical learning, machine learning, signal processing and optimization theory is required. At the time of admission, the applicant must hold a Master of Science degree in Electrical Engineering, Engineering Physics, Mechanical Engineering or Computer Science or equivalent degree. More information of the project and how to apply can be found here: https://www.kth.se/en/om/work-at-kth/lediga-jobb/what:job/jobID:239724/where:4/

6.9. **PhD: Virginia Tech, USA**

Contributed by: Mazen Farhood, farhood@vt.edu

PhD position at Virginia Tech: Aerospace and Ocean Engineering, Virginia Tech, Blacksburg VA 24061, U.S.A.

Application deadline: Interested researchers are encouraged to apply as soon as possible. Applications will be accepted until positions are filled.

Projects:

Applications are invited for PhD positions to work on projects focusing on robustness analysis, cooperative control, and formal verification of cyber-physical systems such as unmanned aircraft systems and autonomous underwater vehicles.
Application:
Please email your application to Dr. Mazen Farhood (farhood@vt.edu). The application should include your CV, a brief statement of research experience and interests, and the names of three references. PhD students are expected to join the graduate program at Virginia Tech in the Fall 2019 semester.

More Information:
Further details may be obtained from Dr. Mazen Farhood (farhood@vt.edu).

6.10. PhD: KU Leuven, Belgium
Contributed by: Jan Swevers, jan.swevers@kuleuven.be

PHD position on at the department of Mechanical Engineering KU Leuven, Belgium: Offline and online linear parameter-varying system identification.

The MECO research team of the Mechanical Engineering Department, KU Leuven (Belgium) is looking for a young, motivated and skilled PhD researcher with a strong background in systems, control, numerical optimization and programming. https://www.mech.kuleuven.be/en/pma/research/meco

In this research project you will develop fast and robust parameter identification methods for linear parameter-varying (LPV) systems. LPV systems are linear systems with parameters that depend on one or several scheduling parameters that are typically variables whose variations are known or measurable. The LPV framework provides mathematically sound modelling and robust control design methods for a broad class of nonlinear systems in a wide variety of application areas, e.g. thermal, vibro-acoustic and mechatronic motion systems. This research builds upon recently developed LPV identification techniques [1,2,3]. In a first stage you will work towards faster and numerically more robust implementations of these offline methods and their full integration into the Linear Control Toolbox developed by MECO [4]. Next, you will develop online LPV system identification methods: recursive implementations and implementations following the framework of Moving Horizon Estimation. In the latter case, the model parameter estimation is formulated as an optimal control problem defined over a finite receding time horizon. Through a finite time horizon formulation, more robustness of the estimation with respect to measurement and system noise and disturbances is expected compared to recursive techniques, but at the cost of longer calculation times. To ease this trade-off, you will research fast solution strategies.

The focus of this research is on development of algorithms and software, and on numerical and experimental validation. For validation, several scenarios will be considered, e.g. a multi-systems learning setting where differences between systems and/or tasks are limited, and in an adaptive Model Predictive Control (MPC) setting, where model updates are used to improve controller performance and estimated model uncertainty is accounted for in the control formulation. The considered class of systems are mechatronic systems.


[2] Turk, D; Singh, T; Swevers, J; 2018. Linear parameter-varying system identification of an industrial ball


Our offer: A fully funded PhD position for four years at KU Leuven, Belgium. To apply: https://www.mech.kuleuven.be/en/pma/research/meco/vacancies

6.11. PhD: Universidad Loyola Andalucía, Spain
Contributed by: Pablo Millan Gata, pmillan@uloyola.es

Open PhD student position at Universidad Loyola Andalucía (Sevilla, Spain)
The Universidad Loyola Andalucía (www.uloyola.es) is looking for candidates to cover 2 PhD scholarships in the Department of Engineering to do the PhD within the following projects:

Control of Autonomous Surface Vehicles fleets for water quality monitoring. Distributed Estimation and Control in Cyber-Physicals Systems with applications to Smart Agriculture.

What we offer:
- The possibility to study in a dynamic research team in close cooperation with industries and advanced universities the world over.
- Work and Study in Sevilla, one of the world’s most appealing cities.
- One-year contract (renewable for 2 years more) to complete the doctoral thesis.
- Possibility of developing teaching competences as Teaching Assistant

Eligibility:
The candidates must have basic eligibility in accordance with the following requirements: Engineering or Computer Science Studies; English Level at least B2
Selection: In the selection of applicants, the following will be assessed:
Ability to independently pursue his or hers work
Teamwork ability/Collaborative profile
High motivation
Work with complex issues
Academic record

Applications must be sent to:
rrhh@uloyola.es, and
pmillan@uloyola.es
including CV, application letter, and a recommendation letter(s).

6.12. Postdoc: University of Western Ontario, Canada
Contributed by: Jin Jiang, jjiang@eng.uwo.ca

A number of postdoctoral fellowships (PDFs) are available in the Department of Electrical & Computer Engineering, the University of Western Ontario, Canada for qualified candidates with background or interests in control of electrical power systems, in particular, microgrids with renewable resources, nuclear power plants, including small modular reactors. Ideal candidates will be those with some relevant practical hand-on experience in control and power systems. The duration of the first contract will be one year and can be renewed depending on mutual agreements.

Interested applicants should contact: Dr. Jin Jiang at jjiang@eng.uwo.ca with the following documents.
- detailed CV
- academic transcripts
- list of publications
- description of research interests with justifications of relevant backgrounds.

The positions are available immediately.

6.13. Postdoc: LAAS CNRS, Toulouse, France
Contributed by: Victor Magron, vmagron@laas.fr

Dear Colleagues,

I am advertising several open Post-doc positions in Toulouse, on certified optimization for nonlinear system verification.

Tremplin COPS (Certified OPtimization for cyber-physical System verification) (2 years Tremplin-ERC Starting Grant research project, 2019-2020) Funded by the French national research agency (ANR).

* Positions. Several Post-doc positions are available in the MAC team at LAAS CNRS, Toulouse. These positions are funded by the Tremplin-COPS project (see above), under the lead of Dr. Victor Magron.

* Summary of the research project. Simple mistakes arising in the design of modern cyber-physical systems can have tragic impacts, from human and economic points of view. In particular, for embedded systems, one tries to avoid incidents such as the Patriot missile crash in 1991, the FDIV Pentium bug in 1994 or more recently the collision of Google’s self-driving car in 2016. To ensure the safety of such systems, modern verification frameworks still have limited capacities of handling nonlinear optimization problems involving polynomials. This leads to either inaccurate bounds or high analysis time. Tremplin-COPS proposes to take up challenges in two different ways: first, by designing, analyzing and implementing new certification algorithms, then by modeling important problems arising in nonlinear system, e.g. cyber-physical systems. The ambition is to design a hybrid numeric/symbolic framework that is expected to handle issues such as ill-conditioning, scalability, complexity, better than traditional approaches.
Overall, the goal of Tremplin-COPS is to implement preliminary theoretical and practical results related to the certification and modeling of polynomial optimization problems.

* Starting dates. At any time during the project.

* Salary. Annual brut salary is 50,000 euros.

* The research environment. The research will be advised by Victor Magron and pursued in collaboration with other researchers from the MAC team. This shall involve potential interactions with Didier Henrion and Jean-Bernard Lasserre.

* Required skills. Motivated candidates should hold a PhD degree in either applied mathematics or computer science, with excellent results. They are expected to have a solid background in either optimization and control, real algebraic geometry or computer algebra. Good programming skills are also required. Knowledge of French does not constitute a per-requisite. The candidates are kindly asked to send an e-mail with “Post-doc candidate” in the title, a CV and publication track record, to victor.magron@laas.fr.

Contributed by: Warren Dixon, wdixon@ufl.edu

Postdoctoral researcher position in the Nonlinear controls and Robotics Group (http://ncr.mae.ufl.edu/) at the University of Florida.

Applications are being accepted for a postdoctoral researcher position focused on Assured Autonomy available immediately and open until filled. Candidates are expected to conduct theoretical research in formal methods, hybrid systems, or stochastic methods for uncertain nonlinear systems with applications in autonomy. They are expected to have background in at least one of these areas with willingness to grow into the others during their postdoctoral research. Desired candidates should have a demonstrated publication record in one of the aforementioned areas. This position is part of a new Center of Excellence in Assured Autonomoy. As such, the candidate will be requested to travel to collaborative universities within the center and Air Force Research Laboratories.

The position offers exposure to a wide range of projects and flexibility for the candidate to shape his/her research portfolio in coordination with the supervisor and with Air Force research staff. The position is on a yearly basis and renewable for multiple years. Strong potential also exists to transition to an Air Force Research Laboratory facility as an National Research Council Fellow (for US Citizens). The compensation will include a competitive salary and the University of Florida postdoctoral scholar benefits package. Interested candidates should contact Warren Dixon by email at wdixon@ufl.edu with a curriculum vitae (including a list of and sample publications), the contact information for 2-3 references, and a brief statement of research accomplishment and plans.

6.15. Postdoc: Arcetri Observatory Adaptive Optics Group, Italy
Contributed by: Guido Agapito, guidoaagapito@inaf.it
Arcetri Observatory Adaptive Optics group (INAF) is ready to open a new position for a postdoctoral researcher. The successful candidate will carry out research activities within the project MAORY (https://www.eso.org/public/italy/teles-instr/elt/elt-instr/maory/), and, in particular, he/she will focus on numerical simulations to support design and optimisation of the Adaptive Optics module. The essential competencies are:
- Control system design
- Numerical simulation
- Signal processing
- Propagation of uncertainty
- Object-oriented programming
- GPGPU programming

The interested candidates should contact Guido Agapito by email at guido.agapito@inaf.it. Other open positions at http://aowiki.arcetri.astro.it/Public/JobOffers.

6.16. Postdoc: INRIA Grenoble, France
Contributed by: Bernard Brogliato, bernard.brogliato@inria.fr

Post-doctoral position at INRIA Grenoble, France: this post-doc will focus on the time-discretization of super-twisting algorithms of sliding-mode control, and exact Levant differentiators. It will consist of a theoretical analysis, followed by a significant application part (implementation and tests on various experimental setups). Candidates must possess a strong background in Systems and Control, and the ability to work experimentally. The duration is 18 months, starting anytime in 2019. French speaking is not necessary. Gross salary: about 2200 euros per month, including social security.

6.17. Postdoc: University of Texas at Dallas, USA
Contributed by: Reza Moheimani, reza.moheimani@utdallas.edu

Postdoctoral Research Associate/Scientist Position at UT Dallas
A postdoctoral research associate/scientist position is available for joining an established interdisciplinary research group based in the Laboratory for Dynamics and Control of Nanosystems at the University of Texas at Dallas. This three-year project is funded by Department of Energy and aims to investigate control problems related to high-throughput atomically precise manufacturing systems. The successful candidate will have the opportunity to participate in a host of theoretical and experimental projects, supervise graduate and undergraduate researchers, write reports and manuscripts, attend international conferences, prepare proposals and work closely with collaborating groups.

The applicant should have (or be close to completing) a Ph.D. in Electrical Engineering, Mechanical Engineering, or a closely related field. They should have a strong analytical background, be familiar with advanced control design methods and have had experience with real-time control implementation for laboratory or full-scale mechatronic systems. The position is available immediately and includes a competitive salary and fringe benefits package. Interested applicants should contact Dr. Reza Moheimani at Reza.Mohiemani@utdallas.edu with a detailed CV including a list of publications and names and contact details of three references.
6.18. Postdoc: Ghent University Global Campus, Incheon, South Korea
Contributed by: Shodhan Rao, Shodhan.Rao@ghent.ac.kr

PostDoc position in Applied Mathematics:
There is a vacancy for a Post Doc position in Applied Mathematics in Ghent University Global Campus (GUGC), Incheon, South Korea (http://www.ugent.be/globalcampus/en). It concerns a 1-year full-time position for a renewable period of maximum 4 years subject to successful annual progress.

The research focus of the candidate is expected to be in the area of mathematical biology particularly in the area of stability analysis of biochemical networks. The candidate is also expected to assist his/her supervisor in teaching undergraduate physics and control courses. The candidate will mainly work under the supervision of Prof. Shodhan Rao at GUGC. We are looking for candidates with the following qualifications and skills:
- The candidate should hold or expect to hold by March 1, 2019, a PhD degree in one of the following disciplines: mathematics, systems and control, electrical /electronics /mechanical/chemical engineering with a specialization in systems and control. Exceptional candidates from other engineering/science backgrounds will also be considered.
- The candidate should have had a rigorous undergraduate mathematics and physics training and in general a strong background in mathematics and physics.
- The candidate should be highly motivated to conduct research in the area of applied mathematics, specifically in the area of mathematical biology/chemistry.
- The candidate should have an excellent academic track record, an excellent command of English and good academic writing and presentation skills.
- Knowledge of biology or chemistry at undergraduate level is preferable although not mandatory.

The remuneration for the job will be commensurate with Korean standards for a PostDoc position. In addition, free accommodation within the campus and a yearly travel budget are foreseen. We provide a stimulating research environment within the Biotech Data Science Center of Ghent University Global Campus (GUGC), which is the first campus of Ghent University outside Belgium. This campus is situated in Songdo International City, Incheon, South Korea. GUGC integrates educational and research facilities in a single building. Ghent University has the ambition to organize a first-rate, truly European education in Asia and to develop excellent research in the fields of Molecular biotechnology, Environmental and Food technology. Its programs are accredited in Flanders and in Korea.

The expected starting date of the PostDoc researcher is April 16, 2019. Interested candidates should send their applications before February 28, 2019 by email to Shodhan.Rao@ghent.ac.kr with a CV, copies of transcripts and degrees and a motivation letter (please merge all the documents in one file).

6.19. Postdoc: University of Science and Technology Beijing, China
Contributed by: Okyay Kaynak, okyay.kaynak@boun.edu.tr

The School of Automation and Electrical Engineering, University of Science and Technology Beijing, China seeks to fill Postdoctoral positions as soon as possible. We are interested in candidates in broad areas of
control engineering, artificial intelligence (AI), unmanned autonomous systems, etc.

Application conditions are as follows:
- PhD degree
- Good experience in theory and/or engineering research
- Good communication skills in English and/or Chinese
- Strong work ethics and passion for research

Salary and other:
- RMB 150-200k each year
- Apartment with very cheap ren
- It is a 2 year position and can be extended to 5 years

Required documents:
- Detailed curriculum vitae and a list of publications
- Supporting materials like certificate of degree

For further information, please contact Prof. Dr. Okyay Kaynak, Email: okyay.kaynak@boun.edu.tr

6.20. Postdoc: Virginia Tech, USA
Contributed by: Mazen Farhood, farhood@vt.edu

Postdoc position at Virginia Tech: Aerospace and Ocean Engineering, Virginia Tech, Blacksburg VA 24061, U.S.A.
Application deadline: Interested researchers are encouraged to apply as soon as possible. Applications will be accepted until positions are filled.

Projects:
Applications are invited for Postdoc position to work on projects focusing on robustness analysis, cooperative control, and formal verification of cyber-physical systems such as unmanned aircraft systems and autonomous underwater vehicles.

Candidates:
For the Postdoc positions, we seek candidates with a strong background in robust control theory, networked control systems, or formal methods applied to cyber-physical systems. Although not required, any experience with unmanned aircraft systems or autonomous underwater vehicles will be highly desirable. Ideally, candidates will hold a PhD or have equivalent experience, though candidates who are close to submitting a PhD dissertation will be considered.

Application:
Please email your application to Dr. Mazen Farhood (farhood@vt.edu). The application should include your CV, a brief statement of research experience and interests, and the names of three references. The appointments for the Postdoc positions start as soon as possible and will be for one year with renewal contingent on performance.
Assistant, Associate or Full Professor – Multidisciplinary Engineering Technology Program (Mechatronics)

The Department of Engineering Technology and Industrial Distribution at Texas A&M University invites applications for a tenured or tenure-track faculty position at the assistant, associate, or full professor level 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. The successful applicant will be required to teach; advise and mentor undergraduate and graduate students; develop an independent, externally funded research program; participate in all aspects of the department’s activities; and serve the profession.

Strong written and verbal communication skills are required. Preference will be given to candidates with recent and relevant hands-on experience with applied research and technology development in robotics and automation, academic leadership experience and/or experience with ABET and accreditation processes. Applicants should consult the department’s website to review our academic and research programs (https://engineering.tamu.edu/etid). Applicants must have an earned doctorate in an appropriate engineering field and/or a closely related engineering or science discipline.

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) to apply for this specific position at www.tamengineeringcareers.org. Full consideration will be given to applications received by February 15, 2019. Applications received after that date may be considered until the position is filled. It is anticipated the appointment will begin Fall 2019.

The members of Texas A&M Engineering are all Equal Opportunity/Affirmative Action/Veterans/Disability employers committed to diversity. It is the policy of these members to recruit, hire, train and promote without regard to race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation or gender identity.

Reza Langari, Ph.D., Professor
JR Thompson Department Head Chair
Engineering Technology and Industrial Distribution (ETID)
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979-845-4949 (office)
979-847-9396 (fax)
979-571-8498 (cell)
rlangari@tamu.edu
Clemson University: College of Engineering, Computing and Applied Sciences: Automotive Engineering
Tenure Track Position in Automotive Engineering: Electrified Vehicle Powertrains, Riggs Hall

Clemson University’s Department of Automotive Engineering seeks outstanding applicants for a tenure-track faculty position, at the Assistant or Associate Professor level, related to electrification of vehicle propulsion systems. Research areas of interest include energy storage systems, power electronics, battery aging and management systems, powertrain design and control, along with vehicle to energy infrastructure interaction. Ideal candidates would combine a mix of experimental research with theoretical and/or computational work. Candidates are expected to establish an internationally-recognized research group and education program around the electrification of automotive powertrains. The position will include a competitive salary and startup package to support the research mission of the Advanced Powertrains Group. Candidates will also interact with existing research groups throughout Clemson University, and participate in interdisciplinary research initiatives.

Leading candidates should possess:
- A Ph.D. or equivalent in a relevant technical discipline (such as Electrical, Mechanical, Automotive Systems, Aerospace, or Computer Science):
- A knowledge and experience base in global automotive and/or aerospace technologies with connections to industry:
- The qualities of an “entrepreneurial scholar.” This means an individual who converts a vision into reality through superior strategic planning and execution skills, while leading the intellectual exploration of new methods related to electrified powertrains.
- The ability to build a research program, produce scholarly publications and have a strong dedication to undergraduate and graduate level teaching

About Clemson University and the Department of Automotive Engineering:
The Department of Automotive Engineering is a fully integrated tenure-granting graduate department within the College of Engineering, Computing and Applied Science at Clemson University. The department offers MS and PhD degrees in Automotive Engineering, and is partially funded with a total of $36 million in endowments. The Department of Automotive Engineering has graduated 438 MS and 52 PhD students since its inception in 2007, and is located on Clemson’s CU-ICAR innovation campus in Greenville, South Carolina. The CU-ICAR campus currently houses 20 companies and has interactions with over 200 industry partners, including top global manufacturers and suppliers. More information about the CU-ICAR campus and the Automotive Engineering Program can be found at http://www.cuicar.com and at http://www.clemson.edu/ces/automotive-engineering/.

Clemson University is a national land grant University, currently ranked by US News and World Report as #23 among US public universities. South Carolina is home to over 300 automotive companies including original equipment manufacturers and suppliers.

Instructions:
Applicants should submit a resume/CV, statement of research, statement of teaching interests, and the name and contact information of at least three references to Interfolio.
Clemson University is an AA/EEO employer and does not discriminate against any person or group on the basis of age, color, disability, gender, pregnancy, national origin, race, religion, sexual orientation, veteran status or genetic information. Clemson University is building a culturally diverse faculty and staff committed to working in a multicultural environment and encourages applications from minorities and women.

Apply Here: http://www.Click2Apply.net/dz9xr2dghwkgvbmt
PI106768578

6.23. Faculty: Clemson University, USA
Contributed by: Ardalan Vahidi, avahidi@clemson.edu

The Department of Mechanical Engineering at Clemson University invites applicants for a tenure-track faculty position at the Assistant or Associate Professor rank in the area of dynamics and control with emphasis on cyber-physical systems, robotics and autonomous systems. Please find more information at the job application link https://bit.ly/2W330Op

6.24. Faculty: Zhejiang University, China
Contributed by: Chao Xu, cxu@zju.edu.cn

International Faculty Recruitment: Faculty Positions in the College of Control Science & Engineering,

The College of Control Science and Engineering at Zhejiang University invites applications for all ranks of professor positions as well as postdoc fellows, in the broad areas including but not limited to:
**Industrial Intelligence and Optimization Control**
**Robotics and Intelligent Unmanned Systems**
**Cyber Security, Safety for Industrial Control Systems**
**Smart Sensing and Measurement**

Applicants are required to earn a PhD degree in an appropriate engineering or science field. For each category of the positions, applicants should send an application package with a cover letter, resume, statement of teaching, statement of research and a list of references (at least three) to the HR office of the College at wangjiaolong@zju.edu.cn (Mr. Jiaolong WANG). Please include postal address, phone number and email address of each reference in the application package. This announcement remains effective until positions are filled. We will provide internationally highly competitive salary and research facilities.

Zhejiang University (ZJU) is one of China’s top higher education institutions, as well as one of its oldest; its roots can be traced back to 1897 and the founding of the Qiushi Academy. ZJU currently ranks among the top three on Chinese mainland and within the top 70 in the Times Higher Education World Reputation Rankings (#67 in 2018) and QS World University Rankings (#68 in 2018). Eighteen disciplines of ZJU have been selected for China’s Double First-class Initiative (3rd in China) and 39 disciplines graded A in the recent national assessment (1st in China). In the engineering field, ZJU is ranked #19 globally in the 2018 ARWU World University Rankings in the field of Automation & Control.
6.25. Faculty: Australian National University, Canberra, Australia
Contributed by: Ian Petersen, ian.petersen@anu.edu.au

Academic Level B (Lecturer) $AUD 98,009–$AUD 111,365, C (Senior Lecturer) $AUD 118,044–$AUD 131,402, and D (Associate Professor) $AUD 141,416–$AUD 150,324 plus 17% superannuation.

We are currently seeking applications from enthusiastic early to mid-career academics who have the potential and deep commitment to help define the future of their discipline. You will have the opportunity to present a ground-breaking vision for your research and education, and their importance to the future of engineering. Applications are particularly invited from researchers whose interests are in the broad area of Electrical Engineering, whose breadth of vision reaches across traditional discipline silos, includes strong links with external organisations and industry, and is synergistic with the existing research groups within the School.

The positions will be located in the Research School of Engineering which is one of two Research Schools within the ANU College of Engineering and Computer Science (CECS). This is an exciting time to join our School and be part of a community that prides itself on solving “wicked problems” in collaboration with the best minds in the world from across a broad range of disciplines. We take pride in pursuing our fundamental mission – discovery and making knowledge matter – to the very highest quality. For further information and to apply please follow the link:

6.26. Faculty: University of Science and Technology Beijing, China
Contributed by: Okyay Kaynak, okyay.kaynak@boun.edu.tr

Young 1000 plan professor position in University of Science and Technology Beijing, China
The School of Automation and Electrical Engineering, University of Science and Technology Beijing, China seeks to fill Young 1000 plan professor positions as soon as possible. We are interested in candidates in broad areas of control engineering, artificial intelligence (AI), unmanned autonomous systems, etc.

Application conditions are as follows:
- Below the age of 40;
- Phd degree, plus over 3 years overseas research experience;
- The applicant is taking a formal teaching/research position in a well-known research institution or the research department of a well-known enterprise, when application is filed;
- The applicant shall work full time in China when successfully selected into the program; If the applicant has already been working in China for some time, the working time is no more than 1 year;
- The applicant has outstanding performance in the field compared to his/her age group, and has the potential to become a field leader;
- Special considerations will be given to the applicant who has already made extraordinary achievements.

Salary and others:
- One-time personal monetary subsidy of RMB 500,000 (tax-free)
- Annual salary of no less than RMB 400,000;
- National research fund of RMB 1M to 3M, plus a 1:1 matching university fund as research start-up;

Required documents
- Detailed curriculum vitae and list of publications;
- Supporting materials like certificate of degree, certificate of employment.

For further information, please contact Prof. Dr. Okyay Kaynak, Email: okyay.kaynak@boun.edu.tr.

6.27. Faculty: Technion, Israel
Contributed by: Leonid Mirkin, mirkin@technion.ac.il

The Faculty of Mechanical Engineering at the Technion – Israel Institute of Technology, Haifa, Israel invites applications for a tenure-track faculty position in the general area of control engineering. Initial appointments will be at the assistant or untenured associate professor level. In special cases, more senior or tenured faculty appointment may be possible. The new faculty is expected to develop an independent and funded research program, to teach at undergraduate and graduate levels (former, eventually in Hebrew), to mentor graduate students and postdocs, to participate in all aspects of department’s activities, and to serve the profession.

Applications, including an academic CV and the names of at least three referees, and inquiries should be submitted to Dean Oleg Gendelman (medean@me.technion.ac.il). Evaluation of the applications starts immediately and continues until the position is filled.

6.28. Research Scientist: Max Planck Institute Stuttgart, Germany
Contributed by: Sebastian Trimpe, trimpe@is.mpg.de

Research Scientist/Engineer: Max Planck Institute Stuttgart, Germany
Mechatronics Scientist / Engineer (m/f/x) for the Central Scientific Facility of Cyber Valley

With over 400 employees distributed between campuses in Stuttgart and Tübingen, the Max Planck Institute for Intelligent Systems (MPI-IS) is conducting cutting-edge research in the fields of micro- and nanorobotics, haptic interfaces, human-robot interaction, bio-hybrid systems, medical robotics, computer vision, control, machine learning, and much more. In addition, our institute is a founding member of Cyber Valley, a research network comprising key players in the fields of artificial intelligence and robotics, including major industry partners.

To provide professional, high-quality scientific and engineering expertise to our diverse and expanding research community, the institute has established a set of central scientific facilities in the areas of robotics, materials, computer vision, medical systems, high-performance computing, and software development. Working alongside some of the most talented researchers in the field, the scientists and engineers of these central facilities have the opportunity to make significant contributions to an incredibly wide variety of projects.
This new position seeks to rapidly expand our team’s capabilities and expertise in the areas of mechatronics, experimental design, instrumentation, compliant mechanisms, novel sensors, and/or embedded systems.

Requirements:
- Masters or doctoral degree in mechanical engineering, electrical engineering, mechatronics, computer science, or related fields
- Significant hands-on experience with mechatronic, embedded, and/or robotic systems (see below for more details)
- Very strong written and oral English communication skills - Ability to work independently on a variety of projects

Desired Experience:
Ideal candidates will have experience with some of the following:
- Proven track record of designing and developing mechatronic, embedded, and/or robotic systems
- Experimental system design & realization – work with scientists to define project requirements; select appropriate components; integrate various systems; calibrate, test, and improve final deliverables
- Mechatronic/embedded system design & programming – develop embedded systems; integrate various subcomponents including microcontrollers, sensors, actuators, and communications; implement and test real-time control systems
- Mechanical design & realization – CAD; component selection; precision design; material selection (especially composites and soft materials); manufacturing processes; design for digital fabrication (3D printing, laser cutting, CNC machining); novel electromechanical systems (e.g. soft/active elastomers)
- Electrical circuit design & fabrication – component selection; fine-pitch SMD; multi-layer design; flexible assemblies; rapid prototyping
- Measurement & instrumentation – modern sensor systems; calibration; data collection & analysis in various domains (physical, biological, etc.)

Application materials:
Interested applicants should submit the following: - English cover letter - CV - academic transcript(s) - contact information for two references - up to 3 relevant papers, reports, portfolios, websites, or other evidence of expertise in the field

Our offer:
Salaries will be based on experience according to TVöD guidelines. An initial contract will be offered for two years, and subsequent extension is possible. This is a full-time position. The Max Planck Society seeks to increase the number of women in areas where they are underrepresented and therefore explicitly encourages women to apply. We are committed to employing more handicapped individuals and especially encourage them to apply. Inquiries should be sent to Jonathan Fiene (fiene@is.mpg.de).

More information about the Max Planck Institute for Intelligent Systems and Cyber Valley can be found at http://www.is.mpg.de/ and at http://cyber-valley.de/. The position is available at the earliest convenience and will be open until February 28th, 2019. Preference will be given to applications received by January 31st, 2019.

To apply please follow this link: https://lotus2.gwdg.de/mpg/msmt/perso/is_w007.nsf/application or send a hardcopy application to: