

E-LETTER on Systems, Control, and Signal Processing

Issue 325

October 2015

Editor: [Maria Prandini](#)

Dipartimento di Elettronica, Informazione e Bioingegneria

Politecnico di Milano

Piazza Leonardo da Vinci, 32

20133 Milano, Italy

Tel: +39 02 2399 3441

Fax: +39 02 2399 3412

Welcome to the October issue of the Eletter, available electronically [here](#).

To submit new articles, go “[Article Submissions](#)” on the Eletter website

To unsubscribe, please [send an email](#) with the subject line “Eletter Unsubscribe”.

The next Eletter will be mailed out in the beginning of November 2015.

Contents

1. IEEE CSS Headlines

- 1.1 IEEE Control Systems Society Video Clip Contest
- 1.2 IEEE Control Systems Society Publications Content Digest
- 1.3 IEEE Transactions on Automatic Control
- 1.4 IEEE Control Systems Society Outreach Fund

2. Misc

- 2.1 European PhD Award on Control for Complex and Heterogeneous Systems
- 2.2 International Graduate School on Control

3. Books

- 3.1 Diagnosis and Fault-Tolerant Control
- 3.2 Decentralized Coverage Control Problems for Mobile Robotic Sensor and Actuator Networks

4. Journals

- 4.1 Contents: Automatica
- 4.2 Contents: Nonlinear Studies
- 4.3 Contents: Mathematics in Engineering, Science and Aerospace
- 4.4 Contents: Journal of Mathematical Control and Information
- 4.5 Contents: International Journal of Control, Automation, and Systems
- 4.6 Contents: Control Engineering Practice
- 4.7 Contents: Journal of Pure and Applied Mathematics
- 4.8 Contents: International Journal of Applied Mathematics and Computer Science
- 4.9 CFP: IEEE Transactions on Industrial Electronics
- 4.10 CFP: Leibniz Transactions on Embedded Systems

5. Conferences

- 5.1 World Congress: Mathematical Problems in Engineering, Aerospace and Sciences
- 5.2 International Conference on Unmanned Aircraft Systems
- 5.3 Mediterranean Conference on Control and Automation
- 5.4 Chinese Control and Decision Conference

- 5.5 Symposium on System Structure and Control and Workshop on Time Delay Systems
- 5.6 IFAC Symposium on Advances in Control Education
- 5.7 Workshop on Adaptation and Learning in Control and Signal Processing and Workshop on Periodic Control Systems

6. Positions

- 6.1 PhD: University of Louisiana at Lafayette, USA
- 6.2 PhD: Oxford University, UK
- 6.3 PhD: Imperial College London, UK
- 6.4 PhD: ETH Zürich, Switzerland
- 6.5 PhD: Monash University, Australia
- 6.6 PhD: Southern Illinois University, USA
- 6.7 PhD: Syracuse University, USA
- 6.8 PhD: Linköping University, Sweden
- 6.9 PhD: Delft University of Technology, The Netherlands
- 6.10 PhD: Instituto Politécnico Nacional, Mexico
- 6.11 PhD: Cleveland State University, USA
- 6.12 PhD: Gyeongsang National University, Republic of Korea
- 6.13 PhD: Instituto de Investigaciones Mariñas, Spain
- 6.14 PhD/Post-Doc: University of North Texas, USA
- 6.15 Post-Doc: Northeastern University, USA
- 6.16 Post-Doc: The Ohio State University, USA
- 6.17 Post-Doc: George Washington University, USA
- 6.18 Research Fellow: Nanyang Technological University, Singapore
- 6.19 Faculty: Harbin Institute of Technology, Shenzhen Graduate School, China
- 6.20 Faculty: Washington University in St. Louis, USA
- 6.21 Faculty: Washington University in St. Louis, USA
- 6.22 Faculty: Boston University, USA
- 6.23 Faculty: University of Houston, USA
- 6.24 Internship: Research Centre in Automatic Control, France
- 6.25 Research Engineer/Scientist: AreteX Engineering, New York, USA

1. IEEE CSS Headlines

1.1. IEEE Control Systems Society Video Clip Contest

Contributed by: Frank Allgöwer, allgower@ist.uni-stuttgart.de

IEEE Control Systems Society Video Clip Contest 2015: Announcement of winners

After a very successful first round in 2014, the IEEE Control Systems Society decided to have a second edition of the public video clip contest in 2015 (<http://www.ieeecss.org/video-contest>).

Participants were again asked to create short video clips explaining or promoting the field of automatic control in some or all of its aspects, including theory and applications.

After the submission deadline in August the winners of the Video Clip Contest 2015 were determined by a jury and officially announced during the CSS Video Clip Contest Awards ceremony that was held during the 2015 IEEE Multi-Conference on Systems and Control (MSC 2015) in Sydney, Australia, on Wednesday, September 23, 2015.

This year's winners are:

1st place for the video clip "Controlling Self-Driving Cars"

by L. Johnson, B. Lopez, S.-Y. Liu, J. Miller and J. How

Aerospace Controls Laboratory Massachusetts Institute of Technology

Link: <https://youtu.be/4Y7zG48uHRo>

2nd place for the video clip "Robot Control Programming"

by A. Dani, P. Thota, H. Ravichandar and G. Yao

Electrical and Computer Engineering department University of Connecticut

Link: <https://youtu.be/OzJ9V3UMnh4>

3rd place for the video clip "Control Theory - Autonomous Blimp"

by Q. Tao, M. King-Smith, A.D. Muni, V. Mishra, S. Cho, J.P. Varnell and F. Zhang

The Georgia Tech Systems Research Lab Georgia Institute of Technology

Link: <https://youtu.be/5M-V4GOFNDA>

Congratulations to the winning teams!

[Back to the contents](#)

1.2. IEEE Control Systems Society Publications Content Digest

Contributed by: Elizabeth Kovacs, ekovacs2@nd.edu

CSS Publications Content Digest The IEEE Control Systems Society Publications Content Digest is a novel and convenient guide that helps readers keep track of the latest published articles. The CSS Publications Content Digest, available at <http://ieeecss.org/publications-content-digest> provides lists of current tables of contents of the periodicals sponsored by the Control Systems Society.

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

[Back to the contents](#)

1.3. IEEE Transactions on Automatic Control

Contributed by: Elizabeth Kovacs, ekovacs2@nd.edu

Table of Contents

IEEE Transactions on Automatic Control

Volume 60 (2015), Issue 10 (October)

Please note that the contents of the IEEE Transactions on Automatic Control, together with links to the abstracts of the papers may be found at the TAC web site: <http://www.nd.edu/ieeetac/contents.html>

- Scanning-the-Issue p. 2565

Papers

- Robust Distributed Linear Programming. D. Richert, J. Cortes p. 2567
- A Systematization of the Unscented Kalman Filter Theory. H. M. T. Menegaz, J. Y. Ishihara, G. A. Borges, A. do N. Vargas p. 2583
- Linear Quadratic Regulation and Stabilization of Discrete-time Systems with Delay and Multiplicative Noise. H. Zhang, L. Li, J. Xu, M. Fu p. 2599
- H-Infinity and H-Two Norms of 2D Mixed Continuous-Discrete-Time Systems via Rationally-Dependent Complex Lyapunov Functions. G. Chesi, R. H. Middleton p. 2614
- Model Reduction Near Periodic Orbits of Hybrid Dynamical Systems. S. A. Burden, S. Revzen, S. S. Sastry p. 2626
- A Stochastic Maximum Principle for Risk-Sensitive Mean-Field-Type Control. B. Djehiche, H. Tembine, R. Tempone p. 2640
- Worst-Case Optimal Battery Filling Policies with Constrained Adjustable Service. J-Y. LeBoudec, D-C. Tomozei p. 2650
- Stochastic Event-Triggered Sensor Schedule for Remote State Estimation. D. Han, Y. Mo, J. Wu, S. Weerakkody, B. Sinopoli, L. Shi p. 2661
- Information Relaxation and Dual Formulation of Controlled Markov Diffusions. F. Ye, E. Zhou p. 2676

Technical Notes and Correspondence

- An Optimal Compensation Framework for Linear Quadratic Gaussian Control over Lossy Networks. J-T. Yu, L-C. Fu p. 2692
- A Compartmental Model for Traffic Networks and its Dynamical Behavior. S. Coogan, M. Arcak p. 2698
- Direct Synthesis of Fixed-Order H-infinity Controllers. M. Babazadeh, A. Nobakhti p. 2704
- Cone Schedules for Processing Systems in Fluctuating Environments. K. Ross, N. Bambos, G. Michailidis p. 2710
- On the Connection Between Compression Learning and Scenario Based Single-Stage and Cascading Optimization Problems. K. Margellos, M. Prandini, J. Lygeros p. 2716
- Realization of Three-port Spring Networks with Inerter for Effective Mechanical Control. M. Z. Q. Chen, K. Wang, Y. Zou, G. Chen p. 2722
- Adaptive Output Feedback based on Closed-loop Reference Models. T. E. Gibson, Z. Qu, A. M. Annaswamy, E. Lavretsky p. 2728
- Fault Detection Analysis of Boolean Control Networks. E. Fornasini, M. E. Valcher p. 2734

- Stability of Discrete-Time Systems with Time-Varying Delays via a Novel Summation Inequality. A. Seuret, F. Gouaisbaut, E. Fridman p. 2740
- A Note on Sampled-Data Stabilization of LTI Systems with Aperiodic Sampling. D. H. Lee, Y. H. Joo p. 2746
- Sensor Networks Localization: Extending Trilateration via Shadow Edges. G. Oliva, S. Panzneri, F. Pascucci, R. Setola p. 2752
- Cyclic Queueing Networks with Subexponential Service Times and Finite Buffers. J-K. Kim, H. Ayhan p. 2756
- Geometric Controllability and Stabilization of Spherical Robot Dynamics. V. Muralidharan, A. D. Mahindrakar p. 2762
- Free-Matrix-Based Integral Inequality for Stability Analysis of Systems With Time-Varying Delay. H-B. Zeng, Y. He, M. Wu, J. She p. 2768
- A Geometric Transversals Approach to Sensor Motion Planning for Tracking Maneuvering Targets. H. Wei, S. Ferrari p. 2773
- Self-Triggered Consensus for Multi-Agent Systems with Zeno-Free Triggers. Y. Fan, L. Liu, G. Feng, Y. Wang p. 2779
- Selecting the Best Simulated Design with the Expected Opportunity Cost Bound. S. Gao, L. Shi p. 2785
- Low-Rank Second-Order Splitting of Large-Scale Differential Riccati Equations. T. Stillfjord p. 2791
- Polynomial Input-Output Stability for Linear Systems. L. Paunonen, P. Laakkonen p. 2797
- Accelerated Twisting Algorithm. Y. Dvir, A. Levant p. 2803
- Linear Consensus Algorithms Based on Balanced Asymmetric Chains. S. Bolouki, R. P. Malhame p. 2808
- Convex Necessary and Sufficient Conditions for Density Safety Constraints in Markov Chain Synthesis. B. Acikmese, N. Demir, M. W. Harris p. 2813
- Direct Design of Discrete-Time LPV Feedback Controllers. C. Novara p. 2819
- On Invariant-Based Monitors that Enforce Liveness in a Class of Partially Controlled General Petri Nets. E. Salimi, R. S. Sreenivas p. 2825
- Jamming Attacks on Remote State Estimation in Cyber-Physical Systems: A Game-Theoretic Approach. Y. Li, L. Shi, P. Cheng, J. Chen, D. E. Quevedo p. 2831
- Global Exponential Attitude Tracking Controls on $SO(3)$. T. Lee p. 2837

[Back to the contents](#)

1.4. IEEE Control Systems Society Outreach Fund

Contributed by: Daniel E. Rivera, daniel.rivera@asu.edu

The IEEE CSS Outreach Task Force will be holding its fall proposal submission window from October 1 through 12, 2015.

General information regarding the program can be found in:

<http://www.ieeecss.org/general/control-systems-society-outreach-fund>

Inquiries regarding project suitability for the Outreach Fund, as well as requests for application materials, should be made directly to Daniel E. Rivera, Outreach Task Force Chair, at daniel.rivera@asu.edu.

[Back to the contents](#)

2. Misc

2.1. European PhD Award on Control for Complex and Heterogeneous Systems

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

2015 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 Euros. It will be delivered during the annual European Control Conference.

Deadline for application: 31st December 2015

To be eligible for the award, the thesis must be in English and have been defended in Europe between 15/07/2014 and 14/07/2015

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/>

[Back to the contents](#)

2.2. International Graduate School on Control

Contributed by: Françoise Lamnabhi-Lagarigue, lamnabhi@l2s.centralesupelec.fr

EECI-IGSC-2016

2016 International Graduate School on Control

<http://www.eeci-institute.eu/IGSC2016>

- 28 Independent Graduate Modules - one 21 hours module per week, taught in English
- Deadline for advance registration to each module: 31/12/2015
- Eligible for 2nd Year Master Degree credits (3 ECTS) and Scientific modules for PhD's students training portfolio
- Partial financial support for selected PhD Students worldwide

Locations: Belgrade (1); Berlin (3); Bombay (1); Istanbul (3); L'Aquila (2); Paris-Saclay (16); St Petersburg (1); Zurich (1)

Pre-Programme and Summaries of the courses, see [here](#)

Contact: admin-eeci@lss.supelec.fr

[Back to the contents](#)

3. Books

3.1. Diagnosis and Fault-Tolerant Control

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

Diagnosis and Fault-Tolerant Control

M. Blanke, M. Kinnaert, J. Lunze, M. Staroswiecki

Springer-Verlag, 2016, ISBN:3-662-47943-8

3rd. ed., 2016, XVII, 699 p., 270 illus.

The book presents effective model-based analysis and design methods for fault diagnosis and fault-tolerant control. Architectural and structural models are used to analyse the propagation of the fault through the process, to test the fault detectability and to find the redundancies in the process that can be used to ensure fault tolerance. Design methods for diagnostic systems and for fault-tolerant controllers are presented for continuous processes described by analytical models for discrete-event systems represented by automata. The theoretical results are illustrated by two running examples used throughout the book.

The third edition resulted from a major re-structuring and re-writing of the former edition, which has been used for a decade by numerous research groups. New material includes distributed diagnosis of continuous and discrete-event systems, method for the reconfigurability analysis, and extensions of the structural methods towards fault-tolerant control. The bibliographical notes at the end of all chapters have been up-dated. The chapters end with exercises to be used in lectures.

See also: <http://www.atp.ruhr-uni-bochum.de/n/buch/ftcbook.html>

[Back to the contents](#)

3.2. Decentralized Coverage Control Problems for Mobile Robotic Sensor and Actuator Networks

Contributed by: Andrey V. Savkin, a.savkin@unsw.edu.au

New book:

Decentralized Coverage Control Problems for Mobile Robotic Sensor and Actuator Networks

A.V. Savkin, T.M. Cheng, Z. Xi, F. Javed, A.S. Matveev, H. Nguyen

Wiley, IEEE Press, 2015, ISBN: 978-1-119-02522-1. Hardcover, 208 pp.

<http://www.wiley.com/WileyCDA/WileyTitle/productCd-1119025222.html>

Description:

This book introduces various coverage control problems for mobile sensor networks including barrier, sweep, blanket and encircling. Unlike many existing algorithms, all of the robotic sensor and actuator motion algorithms developed in the book are fully decentralized or distributed, computationally efficient, easily implementable in engineering practice and based only on information on the closest neighbours of each mobile sensor and actuator and local information about the environment. Moreover, the mobile robotic sensors have no prior information about the environment in which they operation. These various types of coverage problems have never been covered before by a single book in a systematic way.

Another topic of this book is the study of mobile robotic sensor/actuator networks. Many modern engineering applications include the use of sensor/actuator networks to provide efficient and effective monitoring and control of industrial and environmental processes. Such mobile sensor/actuator networks are able to achieve improved performance and efficient monitoring together with reduction in power consumption and production cost.

This book offers accessible but precise development of important mathematical models and results. All the presented results have mathematically rigorous proofs.

Table of Contents:

1. Introduction
2. Barrier Coverage between Two Landmarks
3. Multi-level Barrier Coverage
4. Problems of Barrier and Sweep Coverage in Corridor Environments
5. Sweep Coverage along a Line

6. Optimal Distributed Blanket Coverage Problem
7. Distributed Self-Deployment for Forming a Desired Geometric Shape
8. Mobile Sensor and Actuator Networks: Encircling, Termination and Hannibal's Battle of Cannae Maneuver
9. Asymptotically Optimal Blanket Coverage between Two Boundaries
10. Distributed Navigation for Swarming with a Given Geometric Pattern

[Back to the contents](#)

4. Journals

4.1. Contents: Automatica

Contributed by: Elisa Capello, automatica@polito.it

Table of Contents

Automatica

Vol. 60, October 2015

<http://www.sciencedirect.com/science/journal/00051098/60>

- A stopping rule for stochastic approximation, Takayuki Wada, Yasumasa Fujisaki, pages 1-6
- Two globally convergent adaptive speed observers for mechanical systems, Jose Guadalupe Romero, Romeo Ortega, pages 7-11
- Probability-guaranteed set-membership filtering for systems with incomplete measurements, Guoliang Wei, Shuai Liu, Yan Song, Yurong Liu, pages 12-16
- Coordinated path following for unicycles: A nested invariant sets approach, Alireza Doosthoseini, Christopher Nielsen, pages 17-29
- Robust periodic economic MPC for linear systems, Timothy J. Broomhead, Chris Manzie, Rohan C. Shekhar, Peter Hield, pages 30-37
- Observability conservation by output feedback and observability Gramian bounds, Liangquan Zhang, Qinghua Zhang, pages 38-42
- Robust and ultrafast response compensator for unstable invertible plants, David Bensoussan, pages 43-47
- Parameter estimation for nonlinear time-delay systems with noisy output measurements, Qun Lin, Ryan Loxton, Chao Xu, Kok Lay Teo, pages 48-56
- Stabilization of a second order ODE-heat system coupling at intermediate point, Zhongcheng Zhou, Chao Xu, pages 57-64
- Non-asymptotic model quality assessment of transfer functions at multiple frequency points, Sangho Ko, Erik Weyer, Marco Claudio Campi, pages 65-78
- Interval observer design for LPV systems with parametric uncertainty, Yan Wang, David M. Bevly, Rajesh Rajamani, pages 79-85
- Robust finite-time output feedback control of perturbed double integrator, Yuxin Su, Chunhong Zheng, pages 86-91
- Adaptive actuator fault tolerant control for uncertain nonlinear systems with multiple actuators, Qinmin Yang, Shuzhi Sam Ge, Youxian Sun, pages 92-99
- Identification of linear continuous-time systems under irregular and random output sampling, Biqiang Mu, Jin Guo, Le Yi Wang, George Yin, Lijian Xu, Wei Xing Zheng, pages 100-114

- Minimum switching control for systems of coupled double integrators, Andrea Garulli, Antonio Giannitrapani, Mirko Leomanni, pages 115-121
- Gaussian filter for nonlinear systems with correlated noises at the same epoch, Yulong Huang, Yonggang Zhang, Xiaoxu Wang, Lin Zhao, pages 122-126
- Optimal path planning and sensor placement for mobile target detection, Bomin Jiang, Adrian N. Bishop, Brian D.O. Anderson, Samuel P. Drake, pages 127-139
- Second-order counterexamples to the discrete-time Kalman conjecture, William Paul Heath, Joaquin Carrasco, Manuel de la Sen, pages 140-144
- Global stabilization of periodic linear systems by bounded controls with applications to spacecraft magnetic attitude control, Bin Zhou, pages 145-154
- Invertibility and nonsingularity of Boolean control networks, Kuize Zhang, Lijun Zhang, Lihua Xie, pages 155-164
- Recursive identification of FIR systems with binary-valued outputs and communication channels, Jin Guo, Yanlong Zhao, Chang-Yin Sun, Yao Yu, pages 165-172
- Spatio-temporal multi-robot routing, Smriti Chopra, Magnus Egerstedt, pages 173-181
- On the sample size of random convex programs with structured dependence on the uncertainty, Xiaojing Zhang, Sergio Grammatico, Georg Schildbach, Paul Goulart, John Lygeros, pages 182-188
- New results on stability analysis for systems with discrete distributed delay, Hong-Bing Zeng, Yong He, Min Wu, Jinhua She, pages 189-192
- Adaptive tracking control for switched stochastic nonlinear systems with unknown actuator dead-zone, Xudong Zhao, Peng Shi, Xiaolong Zheng, Lixian Zhang, pages 193-200
- Initial estimates for Wiener-Hammerstein models using phase-coupled multisines, Koen Tiels, Maarten Schoukens, Johan Schoukens, pages 201-209
- Quantifying the unstable in linearized nonlinear systems, Graziano Chesi, pages 210-218
- Consensus-based decentralized real-time identification of large-scale systems, Miloš S. Stanković, Srdjan S. Stanković, Dušan M. Stipanović, pages 219-226
- A randomized algorithm for nonlinear model structure selection, Alessandro Falsone, Luigi Piroddi, Maria Prandini, pages 227-238
- Compensation of disturbances for MIMO systems with quantized output, Igor B. Furtat, Alexander L. Fradkov, Daniel Liberzon, pages 239-244
- An implicit sequential algorithm for solving coupled Lyapunov equations of continuous-time Markovian jump systems, Yang-Yang Qian, Wen-Jie Pang, pages 245-250

[Back to the contents](#)

4.2. Contents: Nonlinear Studies

Contributed by: Seenith Sivasundaram, seenithi@gmail.com

Table of Contents

Nonlinear Studies

Vol 22, No 3 (2015)

<http://www.nonlinearstudies.com/index.php/nonlinear/issue/current>

- On volatility variation in ARCH(1) and GARCH(1;1) continuous limits. Julien Riposo, Carlo Bianca 359-371
- Existence of nonnegative solutions for a class of fractional p-Laplacian problems. Abdeljabbar Ghanmi 373-379
- Almost automorphic mild solutions for some semilinear abstract dynamic equations on time scales. G. M. N'Guérékata, Gisèle Mophou, Aril Milcé 381-395
- A new monotone iteration principle in the theory of nonlinear first order integro-differential equations. Bapurao C. Dhage 397-417
- Eigenvalue Intervals for Iterative Systems of Nonlinear Three-point Boundary value problems on Time Scales. Kapula Rajendra Prasad, Sreedhar N, M A S Srinivas 419-431
- Escape dynamics in a Hamiltonian system with four exit channels. Euaggelos E. Zotos 433-452
- Delay Induced Oscillation in a Biochemical Model and Its Control. Fahad Al Basir, Rupa Bhattacharyya, Priti Kumar Roy 453-472
- Lie symmetry analysis to generalized fifth-order time-fractional KdV equation. Y.W Zhang 473-484
- Solutions of a fractional functional integrodifferential equations with interval impulses and infinite delay. A Anguraj, M Lathamaheswari, Y. K. Chang 485-494
- Method of Upper Lower Solutions for Fractional Integro Diffusion Equation. Dnyanoba Bhaurao Dhaigude, Chandradeepa P.Chitalkar Dhaigude 495-502
- Effect of delay on growth function of zooplankton in plankton ecosystem model and its consequence on the formation of plankton bloom. Anal Chatterjee, Samares Pal 503-523
- Characterization of optimality for controlled jump diffusion processes. Farid Chighoub 525-541
- A new approach to find approximate solutions of system of NLPDEs arising in physics. Mahmoud Saleh Rawashdeh, Ghada Mohammed Alsmadi 543-559

[Back to the contents](#)

4.3. Contents: Mathematics in Engineering, Science and Aerospace

Contributed by: Seenith Sivasundaramseenithi@gmail.com

Table of Contents

Mathematics in Engineering, Science and Aerospace (MESA)

Vol 6, No 3 (2015)

<http://nonlinearstudies.com/index.php/mesa/issue/current>

- Preface: Developments in understanding the dynamical behavior of mechanical, civil, aerospace and naval structures and their applications. José M. Balthazar, Reyolando M. L. R. F. Brasil, Angelo M. Tusset, Vinicius Picirillo, Paulo B. Gonçalves 341-343
- Vector method applied to multi body coupled rotations. Katica R. (Stevanović) Hedrih, Marija B. Stamenković 345-364
- Models of real system nonlinear dynamics abstractions. Katica R. (Stevanović) Hedrih 365-381
- Rotational Motion of a Satellite With Viscous Fluid Under the Action of the External Resistance Torque. Dmytro Leshchenko, Leonid Akulenko, Alla Rachinskaya, Yulia Shchetinina 383-390
- Effects of asymmetrical damping ratio and damper inclination on vertical dynamics of a suspension system. Julio Cesar de Moraes Fernandes, Marcos Silveira, Bento Rodrigues Pontes Jr, José Manoel Balthazar 391-398

- Insights on Aeroelastic Bifurcation Phenomena in Airfoils with Structural Nonlinearities. Daniel A. Pereira, Rui M. G. Vasconcellos, Muhammad R. Hajj, Flavio D. Marques 399-424
- Nonlocal elastic beam models in small size structures. Julio R. Claeysen, L. Tonetto, D. Tolfo, R.D. Copetti 425-452
- Robust control of a variable speed control moment gyroscope. Diego Colòn, Bruno Augusto Angelico, José Manoel Balthazar 453-474
- Resonance Behavior of the limited power-supply system coupled with the nonlinear absorber. K.Y. Plakhsy, Yuri V. Mikhlin 475-495
- The Dynamic Behavior Analysis of Spring-Mass-Damper Systems Jumping on Ground: Free and Forced Motion. Paulo J. P. Gonçalves, Lucas de Haro Silva, Marcos Silveira 497-506
- Thermal-hydraulic analysis of a plate-type fuel surrounded by two water channels by using Relap5. Itamar Iliuk, José Manoel Balthazar, Angelo Marcelo Tusset, José Roberto Castilho Piqueira 507-517
- The new theorem of stability - Direct extension of Lyapunov theorem. Itzhak Barkana 519-550
- Crack impedance-Dirichlet boundary value problems of diffraction in a half-plane. Luis Filipe Pinheiro de Castro, D. Kapanadze 551-566
- Analysis and simulation of adaptive control strategies for uncertain bio-inspired sensor systems. Carsten Behn, Peter Loepelmann, Joachim Steigenberger 567-588
- Quasi-periodic galloping of a wind-excited tower under fast excitation and parametric damping. Ilham Kirrou, Lahcen Mokni, Mohamed Belhaq 589-598

[Back to the contents](#)

4.4. Contents: Journal of Mathematical Control and Information

Contributed by: Suzanne Eves, suzie.eves@oup.com

Table of Contents

IMA Journal of Mathematical Control and Information

Volume 32 Issue 3 September 2015

A new issue of IMA Journal of Mathematical Control and Information is now available online.

The Table of Contents below can be viewed at: <http://www.oxfordjournals.org/page/6616/1>

- Patricio Ordaz and Alex Poznyak. 'KL'-gain adaptation for attractive ellipsoid method.
- T. Binazadeh and M. H. Shafiei. Sub-optimal stabilizing controller design for non-linear slowly varying systems: application in a benchmark system.
- J. L. Chang. Static output feedback sliding mode controller design for minimum phase uncertain systems.
- Ali Boutoulout, Hamid Bourray, and Fatima-Zahrae El Alaoui. Regional boundary observability of semi-linear hyperbolic systems: sectorial approach.
- Jia Liu, Zengqiang Chen, Zhongxin Liu, and Xinghui Zhang. Distributed robust consensus control for nonlinear multi-agent systems by using output regulation approach.
- Xia Chen, Fei Hao, and Mingyuan Shao. Event-triggered consensus of multi-agent systems under jointly connected topology.
- Dongyi Liu, Liping Zhang, Genqi Xu, and Zhongjie Han. Stabilization of one-dimensional wave equations coupled with an ODE system on general tree-shaped networks.
- Yuebing Hu, Ping Li, and James Lam. On the synthesis of H_∞ consensus for multi-agent systems.

- Pan Xiong, Feng Wang, and Xibin Cao. D-stability performance analysis and stabilization of Sun-Earth L2 formation flying system.
- Alireza Nazemi and Mohammad Mehdi Shabani. Numerical solution of the time-delayed optimal control problems with hybrid functions.
- G. Arthi and Ju H. Park. On controllability of second-order impulsive neutral integrodifferential systems with infinite delay.
- Xiaomei Liu, Kanjian Zhang, Shengtao Li, Shumin Fei, and Haikun Wei. Optimal timing control of switched stochastic systems.

[Back to the contents](#)

4.5. Contents: International Journal of Control, Automation, and Systems

Contributed by: Young Hoon Joo, journal@ijcas.com

Table of contents

International Journal of Control, Automation, and Systems (IJCAS)

Vol. 13, No. 5, October 2015

ISSN: 1598-6446

<http://www.springer.com/engineering/robotics/journal/12555>

- Robust Sliding-mode Observer-based Sensor Fault Estimation, Actuator Fault Detection and Isolation for Uncertain Nonlinear Systems. Junqi Yang, Fanglai Zhu, Xin Wang, and Xuhui Bu 1037-1046
- FIR-type Robust H_2 and H_∞ Control of Discrete Linear Time-invariant Polytopic Systems via Memory State-feedback Control Laws. Dong Hwan Lee, Young Hoon Joo, and Sung Kwan Kim 1047-1056
- Sampled-data Collective Rotating Consensus for Second-order Networks under Directed Interaction. Yintao Wang and Qi Sun 1057-1066
- Leader-following Consensus of Heterogeneous Multi-agent Systems with Packet Dropout. Zhixin Liu, Xiu You, Hongjiu Yang, and Ling Zhao 1067-1075
- Distributed Adaptive Control of Pinning Synchronization in Complex Dynamical Networks with Non-delayed and Delayed Coupling. Shaolin Li and Jinde Cao 1076-1085
- Iterative LMI Approach to Design Robust State-feedback Controllers for Lur'e Systems with Time-invariant Delays. Thapana Nampradit and David Banjerdpongchai 1086-1096
- Higher Degree Cubature Quadrature Kalman Filter. Abhinoy Kumar Singh and Shovan Bhaumik 1097-1105
- High Gain Adaptive Observer Design for Sensorless State and Parameter Estimation of Induction Motors. Abdelaziz Maouche, Mohammed M'Saad, Bachir Bensaker, and Mondher Farza 1106-1117
- Distributed Robust Control for Nonlinear Systems using Wireless Neural Control. Wen Ren and Bu-Gong Xu 1118-1130
- Step Reference Tracking in Signal-to-noise Ratio Constrained Feedback Control. Alejandro J. Rojas 1131-1139
- Further Results on Robust Delay-range-dependent Stability Criteria for Uncertain Neural Networks with Interval Time-varying Delay. Pin-Lin Liu 1140-1149
- Front-view Car Detection and Counting with Occlusion in Dense Traffic Flow. Van Huy Pham and Byung-Ryong Lee 1150-1160

- Discrete time Adaptive Controller for Suppression of Resonance in Hard Disk Drive Servo System. Md. Arifur Rahman, Abdullah Al Mamun, and Kui Yao 1161-1172
- Improvement of Terrain Referenced Navigation using a Point Mass Filter with Grid Adaptation. Young Min Yoo and Chan Gook Park 1173-1181
- Gaussian Mixture Approach to Decision Making for Automotive Collision Warning Systems. Seul-Ki Han, Won-Sang Ra, Ick-Ho Whang, and Jin Bae Park 1182-1192
- Use of Chebyshev Polynomial Kalman Filter for Pseudo-blind Demodulation of CD3S Signals. Moussa Yahia, Davide Radi, Laura Gardini, and Valerio Freschi 1193-1200
- Realization of Stabilization using Feed-forward and Feedback Controller Composition Method for a Mobile Robot. Ill-Woo Park, Jin-Oh Kim, Myung-Hwan Oh, and Woosung Yang 1201-1211
- An Autonomous Underwater Vehicle as an Underwater Glider and Its Depth Control. Moon G. Joo and Zhihua Qu 1212-1220
- A Full Error Dynamics Switching Modeling and Control Scheme for an Articulated Vehicle. Thaker Nayl, George Nikolakopoulos, and Thomas Gustafsson 1221-1232
- Speed Optimization in Automated Microinjection of Zebrafish Embryos. Peter C. Y. Chen, Shengfeng Zhou, Zhe Lu, Joo-Hoo Nam, Hong Luo, Ruowen Ge, Chong-Jin Ong, and Wei Lin 1233-1241
- Novel Inverse Kinematic Approaches for Robot Manipulators with Pieper-criterion based Geometry. Huashan Liu, Yang Zhang, and Shiqiang Zhu 1242-1250
- The Impact of Cross-correlation on Mobile Robot Localization. Hamzah Ahmad and Nur Aqilah Othman 1251-1261
- Dual-layer Fuzzy Control Architecture for the CAS Rover Arm. Hongwei Gao, Jinguo Liu, Yangmin Li, Kun Hong, and Yang Zhang 1262-1271
- Improved Algorithm for the Extrinsic Calibration of a Camera and Laser Range Finder using 3D-3D Correspondences. Jong-Eun Ha 1272-1276
- Encoding Selection for a Class of Fitness Functions based on Locus Interdependency. Hongqiang Mo, Zhong Li, Jin Bae Park, Young Hoon Joo, and Qiliang Du 1277-1285
- A Dynamic Portrait Segmentation by Merging Colors and Depth Information. Li-Hong Juang, Ming-Ni Wu, and Feng-Mao Tsou 1286-1293
- Robust Fuzzy Controller Design for Dynamic Positioning System of Ships. Werneld Egno Ngongi, Jialu Du, and Rui Wang 1294-1305
- Stochastic Analysis of Dead-time Systems using a Hybrid Spectral Method. Pham Luu Trung Duong and Moonyong Lee 1306-1312

[Back to the contents](#)

4.6. Contents: Control Engineering Practice

Contributed by: Tobias Glück, cep@acin.tuwien.ac.at

Table of Contents

Control Engineering Practice

Volume 43, October 2015

- M. Schuh, M. Zgorzelski, J. Lunze, Experimental evaluation of an active fault-tolerant control method, Pages 1-11

- G.A. de Andrade, J.D. Álvarez, D.J. Pagano, M. Berenguel, Nonlinear controllers for solar thermal plants: A comparative study, Pages 12-20
- Byeong-Yeon Kim, Kwang-Kyo Oh, Hyo-Sung Ahn, Coordination and control for energy distribution in distributed grid networks: Theory and application to power dispatch problem, Pages 21-38
- Lei Xie, Jiusun Zeng, Uwe Kruger, Xun Wang, Jaap Geluk, Fault detection in dynamic systems using the Kullback-Leibler divergence, Pages 39-48
- Quansheng Zhang, Marcello Canova, Fault Detection and Isolation of automotive Air Conditioning systems using first principle models, Pages 49-58
- M. Yousefi, R.B. Gopaluni, P.D. Loewen, M.G. Forbes, G.A. Dumont, J. Backstrom, Impact of model plant mismatch on performance of control systems: An application to paper machine control, Pages 59-68
- Fei Sun, Xuhui Huang, Joachim Rudolph, Kostyantyn Lolenko, Vehicle state estimation for anti-lock control with nonlinear observer, Pages 69-84
- Ivan Markovsky, An application of system identification in metrology, Pages 85-93
- Lisandro J. Puglisi, Roque J. Saltaren, Cecilia Garcia, Ilka A. Banfield, Robustness analysis of a PI controller for a hydraulic actuator, Pages 94-108
- Rafael Cisneros, Matteo Pirro, Gilbert Bergna, Romeo Ortega, Gianluca Ippoliti, Marta Molinas, Global tracking passivity-based PI control of bilinear systems: Application to the interleaved boost and modular multilevel converters, Pages 109-119

[Back to the contents](#)

4.7. Contents: Journal of Pure and Applied Mathematics

Contributed by: Aliev Fikret, f.aliev@hotmail.com

- A Survey of Results in the Theory of Fractional Spaces Generated by Positive Operators. A.Ashyralyev
- Numerical-Analytical Method for Solving of the First Order Partial Quasi-Linear Equations. Fikret A. Aliev, N.A.Aliev, K.G.Hasanov, A.K.Turarov, G.V.Isaeva
- On Uniform Topology and its Applications. A.A. Borubaev, A.A. Chekeev
- Coefficient Bounds for a Subclass of Bi-Univalent Functions. Ş. Altinkaya, S. Yalçın
- On a Hybrid Numerical Algorithm for the Solutions of Higher Order Ordinary Differential Equations. T. A. Anake, S.A. Bishop, O.O. Agboola
- Some Results on Uniformly Lipschitzian Mappings in Metric Spaces and Applications. A.Aghajani, A.M. Tehrani
- On the Theory of Infinite Systems of Linear Algebraic Equations. F.M. Fedorov
- Common Fixed Point Theorem for Six Mappings on Fuzzy Metric Spaces. B. Deshpande, R. Pathak
- Generalized Quaternion and Rotation in 3-Space E. M. Jafari, Y. Yayli
- Constrained Quadratic Stochastic Operators. R.T. Mukhitdinov
- Equi-Affine Differential Invariants of a Pair of Curves. Y. Sagirolu
- Necessary Conditions of Optimality for the Quasi-Singular Relative to the Component Controls in the Goursat-Darboux Systems. Sh. Yusubov
- Brief Paper. Banach Frames Generated by Compact Operators Associated with a Boundary Value Problem. L. K. Vashisht
- Erratum

- Events

[Back to the contents](#)

4.8. Contents: International Journal of Applied Mathematics and Computer Science

Contributed by: AMCS, amcs@uz.zgora.pl

Table of Contents

International Journal of Applied Mathematics and Computer Science (AMCS)

2015, Volume 25, Number 3 (September)

Special section: Agents in Intelligent Computing and Simulation Systems

Editors: Aleksander Byrski, Marek Kisiel-Dorohinicki, Grzegorz Dobrowolski

Special section

- Pham T.P., Rabah M. and Estraillier P. A situation-based multi-agent architecture for handling misunderstandings in interactions 439
- Pilotti P., Casali A. and Chesõevan C. A belief revision approach for argumentation-based negotiation agents 455
- Śnieżyński B. A strategy learning model for autonomous agents based on classification 471
- Smolka M., Schaefer R., Paszyński M., Pardo D. and Álvarez-Aramberri J. An agent-oriented hierarchic strategy for solving inverse problems 483
- Nogueras R. and Cotta C. A study on meme propagation in multimemetic algorithms 499
- Veloso B., Malheiro B. and Burguillo J.C. A multi-agent brokerage platform for media content recommendation 513

Regular section

- Costa R., Machado G.J. and Clain S. A sixth-order finite volume method for the 1D biharmonic operator: Application to intramedullary nail simulation 529
- Kaczorek T. Analysis of the descriptor Roesser model with the use of the Drazin inverse 539
- Ben Brahim A., Dhahri S., Ben Hmida F. and Sellami A. An H_∞ sliding mode observer for Takagi-Sugeno nonlinear systems with simultaneous actuator and sensor faults 547
- Merheb A.R., Noura H. and Bateman F. Design of passive fault-tolerant controllers of a quadrotor based on sliding mode theory 561
- Góngora P.A. and Rosenblueth D.A. A symbolic shortest path algorithm for computing subgame-perfect Nash equilibria 577
- Itoh H., Fukumoto H., Wakuya H. and Furukawa T. Bottom-up learning of hierarchical models in a class of deterministic POMDP environments 597
- Villacorta P.J. and Pelta D.A. A repeated imitation model with dependence between stages: Decision strategies and rewards 617
- Panek D., Skalski A., Gajda J. and Tadeusiewicz R. Acoustic analysis assessment in speech pathology detection 631
- Paradowski M. On the order equivalence relation of binary association measures 645
- Putz-Leszczynska J. Signature verification: A comprehensive study of the hidden signature method 659

- Piegat A. and Pluciński M. Computing with words with the use of inverse RDM models of membership functions 675
- Zok T., Antczak M., Riedel M., Nebel D., Villmann T., Lukasiak P., Blazewicz J. and Szachniuk M. Building the library of RNA 3D nucleotide conformations using the clustering approach 689

Publisher: University of Zielona Góra and Lubuskie Scientific Society, Poland

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

Frequency: Quarterly

Editor-in-Chief: Józef Korbicz

Website: www.amcs.uz.zgora.pl

[Back to the contents](#)

4.9. CFP: IEEE Transactions on Industrial Electronics

Contributed by: Zhongsheng Hou, zhshhou@bjtu.edu.cn

IEEE Transactions on Industrial Electronics Special Section

Data Driven Control and Learning Systems

Guest Editors: Zhongsheng Hou, Huijun Gao, Frank L. Lewis

Call for Papers

With the development of information sciences and technologies, practical processes, such as chemical industry, metallurgy, machinery, electronics, transportation, and logistics, pose enormous research and technical challenges for control engineering and management due to their size, distributed and multi-domain nature, safety and quality requirements, complex dynamics and performance evaluation, maintenance and diagnosis. Modeling these processes accurately using first principles or identification is almost impossible although these plants produce and store huge amount of impersonal valuable data on the plant and equipment operations in every moment during production. This challenges the existing control theory and technology, and meanwhile urgently pushes scientists and engineers to develop new data driven control and methodology to solve control and optimization issues for these complex practical plants. The high-tech hard/software and the cloud computing enable us to have ability to perform a complex computation real time, which makes the implementation of data driven control and methodology in practice possible. Thus, it would be very significant if we can learning the systems' behaviors, discovering the correlation relationship of system variables by making full use of those on-line or off-line process data, to directly design controller, predict and assess system states, evaluate performance, make decisions, perform real-time optimization, and conduct fault diagnosis. For this reason, the establishment and development of data-driven control theory and methodology are urgent issues in both the theory and applications.

This Special Section is to provide a forum for researchers and practitioners to exchange their latest achievements and to identify critical points and challenges for future investigation on modeling, control and learning of complex practical systems in a data driven manner. The papers to be published in this issue are expected to provide latest advances of data driven approaches, particularly the novel theoretical-supported ideas and algorithms with practical applications. Topics include, but are not limited to, the following research areas:

- Model-free or data-driven control approaches and applications.
- Data driven modeling approaches for complex industrial processes.
- Data driven learning and control approaches and applications.
- Data driven optimization methods and applications.

- Data driven decisions, performance evaluation, fault diagnosis, etc. and applications.
- Robustness on the data driven control
- Complementary controller design approaches and applications between data driven and model - based control methods.
- Neural network and reinforcement learning control and practical applications in model-free environment

For more information on this special section please contact : Zhongsheng Hou zhshhou@bjtu.edu.cn

Deadline for manuscript submissions: February 29, 2016

Information about manuscript acceptance: Summer, 2016

Publication date: Winter, 2016

Submission Instructions:

Please submit your manuscript in electronic form through: <https://mc.manuscriptcentral.com/tie-ieee/>. On the submitting page, in pop-up menu of manuscript type, select: “SS on Data Driven Control and Learning Systems”, then upload all your manuscript files following the instructions given on the screen. For detailed submission guidelines, please consult the Journal’s Instructions for authors.

[Back to the contents](#)

4.10. CFP: Leibniz Transactions on Embedded Systems

Contributed by: Alessandro Abate, aabate@cs.ox.ac.uk

Call for Papers - LITES: Leibniz Transactions on Embedded Systems

Special Issue on Quantitative Evaluation of Systems (QEST)

Scope and Topics:

For 12 years now, QEST has been the leading forum on quantitative evaluation and verification of computer systems and networks, through stochastic models and measurements. QEST supports a broad range of topics - the common thread is that the evaluation be quantitative. The range of performance metrics of interest spans classical measures involving performance, energy and reliability, as well as quantification of properties that are classically qualitative, such as safety, correctness, and security. QEST welcomes diversity in the model formalisms and methodologies employed (including measurement), as well as development of new formalisms and methodologies. QEST is keenly interested in case studies highlighting the role of quantitative evaluation in the design of systems, where the notion of system is broad. Systems of interest include computer hardware and software architectures, communication systems, embedded systems, infrastructural systems, and biological systems. Moreover, tools for supporting the practical application of research results in all of the above areas are of special interest, and therefore tool papers are sought.

This is an open call for papers related to the themes of the QEST conference series. We welcome extended versions (at least 30% new material) of recent QEST conference publications, but also welcome new submissions related to the QEST themes, for publication in an upcoming special issue of LITES, the Leibniz Transactions on Embedded System, a relatively new open-access journal.

Evaluation of Papers:

All submitted papers will be evaluated by at least three reviewers on the basis of originality, technical quality, scientific or practical contribution to the state of the art, methodology, clarity, and adequacy of references. We welcome submissions in the following categories:

1. Theoretical: aim to advance our understanding of quantitative evaluation, apply to non-trivial problems and be mathematically rigorous.

2. Methodological and technical: describe situations that require the development and proposal of new analysis processes and techniques. Process structure and the individual steps should be clearly described. If the methodology has already been evaluated with applications, a brief description of the lessons learned would be very helpful.
3. Application: describe and evaluate a novel application (field or system), and compare with previous results (if any).
4. Tools: should motivate the development of the new tools and the formalisms they support. Tool papers need neither discuss their theoretical underpinnings nor their algorithms. Instead, they should focus on the software architecture and discuss its practical capabilities with particular reference to the size and type of model it can handle within reasonable time and space limits.

Important Dates:

Full paper submission: December 1, 2015

First editorial notice: March 15, 2016

Revised submission: April 15, 2016

Final decision: June 15, 2016

Guest Editors:

Javier Campos, University of Zaragoza, jcampos@unizar.es Boudewijn Haverkort, University of Twente, b.r.h.m.haverkort@utwente.nl Martin Fränzle, University Oldenburg, fraenzle@informatik.uni-oldenburg.de
Instruction for Submissions <http://www.dagstuhl.de/en/publications/lites>

[Back to the contents](#)

5. Conferences

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

Contributed by: Seenith Sivasundaram, seenithi@gmail.com

World Congress: Mathematical Problems in Engineering, Aerospace and Sciences

05-08 July 2016

La Rochelle, France, University of La Rochelle

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

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

ICNPAA's aim

Mathematical Problems in Engineering, Aerospace and Science have stimulated cooperation among scientists from a variety of disciplines. Developments in computer technology have additionally allowed for solutions of mathematical problems. This international forum will extend scholarly cooperation and collaboration, encouraging the dissemination of ideas and information.

The conference will have a pool of active researchers, with a proper balance between academia and industry, as well as between senior and junior researchers, including graduate students and post-doctoral fellows. It is anticipated that such a balance will provide both senior and junior researchers an opportunity to interact and to have a wider picture of recent advances in their respective fields. The conference, especially, enables the setting up of new interdisciplinary research directions among its participants by establishing links with world renowned researchers, making possible joint international projects that will no doubt bring about fresh and innovative ideas and technologies in engineering, aerospace and sciences Co-Sponsored by: AIAA: American Institute of Aeronautics and Astronautics IFIP: International Federation of Information Processing La Rochelle, France, University of La Rochelle The proceedings will be published by the American Institute of

5.2. International Conference on Unmanned Aircraft Systems

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

Call-for-Papers:

2016 International Conference on Unmanned Aircraft Systems (ICUAS'16)

<http://www.uasconferences.com>

On behalf of the ICUAS'16 Organizing Committee, this is to invite you to submit your contributions to the 2016 International Conference on Unmanned Aircraft Systems, ICUAS'16, <http://www.uasconferences.com>, to be held in Key Bridge Marriott, Arlington, VA, USA during June 7-10, 2016. The conference is co-sponsored by the IEEE CSS and RAS, and several other organizations.

It will be the first time for the ICUAS to be held in the Nation's capital, in the Washington area. The conference venue is the Key Bridge Marriott, <http://www.marriott.com/hotels/travel/waskb-key-bridge-marriott/>, located just across the Key Bridge from Washington, D.C. and Georgetown, and two blocks from the Rosslyn Metro Station, on the Orange and Blue Line trains. June 7 will be a Workshop/Tutorial day, followed by a three-day technical Conference on June 8-10. Judging from the interest ICUAS has drawn over the past eight years and its growth, ICUAS'16 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 rapidly evolving and expanding field. Details may be found at <http://www.uasconferences.com> and related links.

ICUAS'16 is fully sponsored by the ICUAS Association, a non-profit organization; Information about the organization may be found at www.icuas.com. The theme of ICUAS'16 will focus on the very challenging and timely topic of 'designing high-confidence autonomous unmanned systems'. National and international organizations, agencies, industry, military and civilian authorities are working towards defining roadmaps of UAS 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 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 with manned aviation and into the respective national airspace.

ICUAS'16 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 UAS advances, and the roadmap to their full utilization in civilian and public domains. Special emphasis will be given to current and future research opportunities, and to 'what comes next' in terms of the essential technologies that need to be utilized to advance further UAS.

Conference topics include:

Airspace Control Integration See-and-Avoid Systems; Airspace Management Interoperability Security; Airworthiness Levels of Safety Sensor Fusion; Air Vehicle Operations Manned/Unmanned Aviation Simulation;

Autonomy Micro - and Mini - UAS Smart Sensors; Biologically Inspired UAS Navigation Standardization; Certification Networked Swarms Swarms; Control Architectures Payloads Technology Challenges; Energy Efficient UAS Path Planning Training; Environmental Issues Regulations UAS Applications; Fail-Safe Systems Reliability of UAS UAS Communications; Frequency Management Risk Analysis UAS Testbeds

Unmanned system collaboration and coordination, formation control, validation and verification and unmanned system design for assured autonomy, are topics of great interest to ICUAS'16.

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

Important Dates:

February 5, 2016: Full Papers/ Invited Papers/Tutorial Proposals Due

April 15, 2016: Acceptance/Rejection Notification

May 6, 2016: Upload Final, Camera Ready Papers

April 15 - May 6, 2016: Early Registration

Paper Submission:

All papers must be submitted and uploaded electronically. Go to <https://contols.papercept.net>. Click on the link "Submit a Contribution to ICUAS'16" and follow the steps.

General Chairs:

Anibal Ollero, Universidad de Sevilla, aollero@us.es

Paul Oh, University of Nevada Las Vegas, paul.oh@unlv.edu

Kimon Valavanis, University of Denver, kimon.valavanis@du.edu

Program Chairs:

Antonios Tsourdos, Cranfield Univ., a.tsourdos@cranfield.ac.uk

YangQuan Chen, UC Merced, yangquan.chen@ucmerced.edu

Ivan Maza, Universidad de Sevilla, imaza@us.es

[Back to the contents](#)

5.3. Mediterranean Conference on Control and Automation

Contributed by: George Nikolakopoulos, geonik@ltu.se

24th Mediterranean Conference on Control and Automation - MED'16

Athens, Greece

June 21-24, 2016

<http://www.med2016.org>

The theme of MED'16 centers on control and automation challenges and opportunities in the 21st century and on control of autonomous systems. MED'16 spans four full days. June 21 is devoted to Tutorials and Workshops, followed by the three day technical conference on June 22-24. The conference, through its technical program and keynote presentations, will provide a unique opportunity for the academic, research and industrial community to address new challenges, share solutions and discuss future research directions. A broad range of topics is proposed, following current trends of combining control and systems theory with hardware/software and communication technologies, as well as new developments in robotics and mechatronics, autonomous systems, unmanned systems, cyber physical systems, network controlled systems, with the goal of strengthening cooperation of control and automation scientists with industry.

For topics of interest please visit the conference website.

Paper Submission:

The Program Chairs are soliciting contributed technical papers for presentation at the Conference and publication in the Conference Digital Proceedings. All papers must be submitted and uploaded electronically. Go to <https://contols.papercept.net>. Click on the link “Submit a Contribution to MED’16” and follow the steps. The paper format must follow IEEE paper submission rules, two-column format using 12 point fonts, Times New Roman. The maximum number of pages per submitted paper is 6. Up to two additional pages will be permitted for a charge of 100 Euros per additional page. Illustrations and references are included in the page count.

Invited and Special Sessions:

Proposals for invited and special sessions by topic of interest must be submitted and uploaded electronically. A Summary Statement describing the motivation and relevance of the proposed session, invited paper titles and author names must be uploaded electronically by February 1, 2016. In addition, authors must submit full versions of invited papers electronically, through <https://controls.papercept.net>. Each such paper must be marked as ‘Invited Session Paper’.

Workshops - Tutorials:

Proposals for workshops - tutorials should contain the title of the session, the list of speakers, and extended summaries (2000 words) of their presentations.

Proposals must be sent by e-mail to the Tutorial and Workshop Chair by February 1, 2016.

Paper Review Process:

All submitted papers will undergo a peer review process coordinated by the Program Chairs, Advisory Committee Members, IPC members and qualified reviewers.

Authors are encouraged to accompany their presentations with multimedia material (i.e., videos), which will be included in the Conference Digital Proceedings.

Conference Proceedings will be acquired by IEEE and they appear in IEEE Xplore.

For information and details about the Conference, contact by e-mail the General or Program Chairs.

Important Dates/Deadlines:

Full Papers / Invited Sessions / Tutorial Proposals: February 1, 2016

Acceptance / Rejection Notification: April 15, 2016

Upload Final, Camera Ready Papers: May 6, 2016

Early Registration: April 15 - May 6, 2016

[Back to the contents](#)

5.4. Chinese Control and Decision Conference

Contributed by: Changyun Wen, ecywen@ntu.edu.sg

The 28th Chinese Control and Decision Conference (2016CCDC)

<http://www.ccdc.neu.edu.cn>

Chinese Control and Decision Conference (CCDC) is an annual international conference. The 28th Chinese Control and Decision Conference (2016CCDC) will be held in Yinchuan, China during May 28 - 30, 2016. Its purpose is to create a forum for scientists, engineers and practitioners from all over the world to present the latest advancement in Control, Decision, Automation, Robotics and Emerging Technologies. A special session on Control and Management of Smart City is also organized with details available in the conference website.

Conference content will be submitted for inclusion into IEEE Xplore as well as other Abstracting and Indexing (A&I) databases. Note that conference content of 2015 CCDC has been included in IEEE Xplore database, and indexed by Inspec. High-quality papers in 2016 CCDC will be recommended for submission to the Journal of Control and Decision published quarterly by TAYLOR & FRANCIS GROUP.

There will be keynote addresses and distinguished lectures covering the State-of-the-Art in both theory and applications of Systems, Control and Decision.

Invited Keynote Addresses will be delivered by

Francis J. Doyle III, University of California, Santa Barbara, USA; Jonathan How, Massachusetts Institute of Technology, USA; Jie Huang, The Chinese University of Hong Kong, Hong Kong, China; Tianyou Chai, Northeastern University, China.

Invited Distinguished Lectures will be delivered by

Francesco Bullo, University of California at Santa Barbara, USA; Hong Chen, Jilin University, China; Zhongsheng Hou, Beijing Jiaotong University, China; Shaoyuan Li, Shanghai Jiao Tong University, China; Guoping Liu, University of South Wales, UK; Peng Shi, University of Adelaide, Australia; Paulo Tabuada, University of California at Los Angeles, USA; Yaonan Wang, Hunan University, China.

Important Dates:

Deadline for Full Paper Submission 31 October 2015

Deadline for Invited Session Proposals 31 October 2015

Notification of Acceptance/Rejection 10 February 2016

Deadline for Camera Ready Manuscript Submission 10 March 2016

Deadline for Advance Registration 10 March 2016

For further information, please refer to

Website - <http://www.ccdc.neu.edu.cn>, E-mail secretary_ccdc@ise.neu.edu.cn.

The Call for Papers of 2016CCDC can be downloaded from the website [here](#)

The Call for Papers of a special session on Control and Management of Smart City can be downloaded from the website [here](#)

[Back to the contents](#)

5.5. Symposium on System Structure and Control and Workshop on Time Delay Systems

Contributed by: Ibrahim Beklan Kucukdemiral, beklan@yildiz.edu.tr

Joint IFAC Meeting 6th Symposium on System Structure and Control (SSSC2016) and 13th Workshop on Time Delay Systems (TDS2016)

The organizing committee extends a cordial invitation to you to join us in Istanbul on June 22-24, 2016 for Joint IFAC Meeting 6th Symposium on System Structure and Control (SSSC2016) and 13th Workshop on Time Delay Systems (TDS2016).

The origins of the IFAC Symposium on System, Structure and Control goes back to the IFAC workshops held in Prague, Czech Republic in 1989 and the 5th was held in Grenoble, France jointly with TDS and FDA. The interest of the scientific community in the control of delay systems, and its applications was conveyed through a series of the workshops on Linear Time Delay Systems since July 1998 (Grenoble, France). This 13th workshop carries the same tradition and will be held jointly with SSSC in Istanbul June 22-24, 2016.

Istanbul is one of the most attractive cities of the world as a unique city established on two continents, which are separated by a narrow strait Bosphorus. It has been the capital of the Roman, Byzantine and Ottoman

empires for nearly 1600 years, from 330 to 1923. It is easily accessible by its two international airports (IST and SAW) with direct flights from more than 100 countries.

Program and Topics

The joint conference will be held in three parallel tracks as follows:

Track A (Theory Under SSSC): Linear systems, structural properties, multivariable systems, decoupling problems, decentralized control, regulation, disturbance rejection, model matching, model reduction, time-varying systems, LPV systems, switched linear systems, multidimensional systems, output feedback control, observers for linear systems, linearization based control of nonlinear systems, input constrained systems, uncertain systems, robust control and analysis, complex systems, positive systems, descriptor systems, diagnosis and fault tolerant control.

Track B (Applications Under SSSC): Automotive systems, aerospace, biological systems, chemical processes, energy and nuclear systems, mechanical systems, mechatronics, network controlled systems, numerical issues in control, power systems, process control, robotics, transportation systems, vibration and control, and other emerging control applications where recently developed theoretical methods are applied.

Track C (Under TDS): Time-delay systems modelling and identification, stability and stabilization, robustness issues, filtering and estimation, control design, output feedback control under I/O delays, predictor based control, non-linear time-delay systems, distributed parameter systems, Infinite dimensional systems, numerical methods, algebraic methods, sampled-data control, hybrid systems with time delays, applications of time-delay systems.

Registration:

There will be a single conference registration fee for the SSSC and TDS attendees: Euros 450 for early registration (by April 20, 2016) and Euros 550 for late registrations. The student registration fee will be Euros 225 by April 20, 2016, and Euros 275 after the early registration date. The regular registration fee includes welcome reception, gala dinner on a cruise boat on the Bosphorus, and farewell reception. A participant's guest attending social events will be charged a student registration fee.

Paper Submission and Publication:

Prospective participants are invited to electronically submit full papers of their work following the instructions on the conference website. Paper submissions will be handled via the online system PaperCept. The system will open for submissions of invited session proposals and contributed papers on September 15, 2015. Conference proceedings will be published online at the website of IFAC - PapersOnLine and will receive an ISBN number and the ISSN number of the series. The presented papers will be further screened for possible publication in IFAC Journals.

Important Dates:

Submission site opens: September 15, 2015

Submission of contributed papers and invited session proposals closes: December 15, 2015

Decision letters are sent: March 15, 2016

Registration opens: March 20, 2016

Early registration and final paper upload: April 20, 2016

[Back to the contents](#)

5.6. IFAC Symposium on Advances in Control Education

Contributed by: Anthony Rossiter, j.a.rossiter@sheffield.ac.uk

The Organizing Committee has the pleasure of inviting you to participate in the 11th IFAC Symposium on Advances in Control Education to be held in Bratislava, Slovakia, June 1-3, 2016.

<http://www.ace2016.sk/>

The Symposium on Advances in Control Education is an international forum on recent developments and advances in control education. The goal of the symposium is to bring together experts from the field of control and education that will contribute to: Demonstrating, discussing, evaluating and linking existing resources in the control education area; Increasing awareness of the automatic control importance in our society; Linking different sources and authors active in development and provision of open educational resources; Enhancing control education in interdisciplinary areas; Evaluating historical contributions to the control engineering development and education.

Topics of the Symposium include, but are not limited to the following: Teaching aids for control engineering, Virtual and remote labs, Open educational resources, E-learning & blended learning in control engineering, Tele-operation, Independent learning, Centralized Internet repository for control education, Virtual reality in control education, continuing control education in industry, University-industry co-operation in control engineering education, International programs in control engineering education, Teacher and student exchange programs between control labs, Cultural and social issues of control education, Challenges for control engineering curricula, Internet-based control systems materials, Embedded systems, Control education using laboratory equipment.

Provisional deadline for paper submission is Nov 30 2015

Special sessions: Invited and special sessions are welcome. Proposers who wish to organise an invited session should contact the chair of the IPC (j.a.rossiter@sheffield.ac.uk) in the first instance to discuss their ideas.

Interactive demo session: This is being co-ordinated by Teresa Restivo (trestivo@fe.up.pt) and Alberto Cardoso. The main intention is that authors give live demonstrations of their activities.

[Back to the contents](#)

5.7. Workshop on Adaptation and Learning in Control and Signal Processing and Workshop on Periodic Control Systems

Contributed by: Alexander Pogromsky, a.pogromsky@tue.nl

IFAC International Workshop on Adaptation and Learning in Control and Signal Processing and IFAC International Workshop on Periodic Control Systems

Joint IFAC workshops:

12th IFAC International Workshop on Adaptation and Learning in Control and Signal Processing (ALCOSP)

6th IFAC International Workshop on Periodic Control Systems (PSYCO)

When: June 29 - July 1, 2016

Where: Eindhoven University of Technology, The Netherlands

Websites: <http://alcosp2016.wtb.tue.nl/> <http://psyco2016.wtb.tue.nl/> Invited session proposal: December 7, 2015

Paper submission (Full length, IFAC style): December 15, 2015

These workshops have the goal of bringing together researchers and practitioners interested in adaptation, learning, identification, observation and control providing them with a forum for presentation of recent developments and assessment of the most promising trends for future research.

The scope of the workshops covers all aspects of adaptive/learning systems, oscillatory systems theory e.g. modelling and analysis and signals and dynamics, repetitive control design etc. All participants of

PSYCO 2016 may attend ALCOSP 2016's sessions. For more information visit the workshops webpages <http://alcosp2016.wtb.tue.nl/> and <http://psyco2016.wtb.tue.nl/>

NOC Chairs Henk Nijmeijer, Alexander Pogromsky

[Back to the contents](#)

6. Positions

6.1. PhD: University of Louisiana at Lafayette, USA

Contributed by: Afef Fekih, afef.fekih@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 design/Fault Detection and Identification with application to dynamic systems. The successful candidate is expected to have a strong background in control systems theory, fault tolerant control, robust control, and adaptive control. 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, electrical engineering, power systems, 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 Spring 2016. 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. Afef Fekih (afef.fekih@louisiana.edu).

[Back to the contents](#)

6.2. PhD: Oxford University, UK

Contributed by: Alessandro Abate, aabate@cs.ox.ac.uk

PhD positions at Oxford University and EPSRC Centre for Doctoral Training in AIMS

* PhD at Oxford University

Aggregation of large populations of Markov models - verification, control, and applications on the power grid
Description:

The Automated Verification Research Group is offering one fully-funded DPhil studentship in Oxford University's Department of Computer Science, under the supervision of Prof. Alessandro Abate.

The studentship is for home/EU students, and includes provision for travel funds and related research/educational expenses. The studentships will be funded for four years and will start as early as possible.

Broadly, we are interested to work on problems of formal aggregation of large-scale populations of Markov models, with the goal to provide new computational algorithms for the optimal policy synthesis over such a population. The project has an applicative side: aggregating and controlling large populations of photovoltaic panels over the power grid. The project is jointly coordinated with engineers from the R&D department of RTE, the French grid operator. The end goal is the robust, reliable control of such heterogeneous and large-scale engineering systems, attaining global stability features and reliability requirements. The location of the DPhil will be at the University of Oxford (UK), and will benefit from visit periods at RTE R&D department, located in Versailles (FR).

We are interested in using techniques from formal methods and performance analysis (such as probabilistic model checking, SMT, and other deductive approaches) from Computer Science, as well as modern approaches from control theory (correct-by-design synthesis, abstraction-based synthesis, compositional analysis) and applied probability (stochastic analysis and control).

We thus look for an applicant with a profile in any of these areas: suitable candidates need to have a strong background in mathematics, with an expertise on power systems applications that is a plus.

Candidates must also have good writing, communication, presentation, and organisation skills - collaborative aspects will be an emphasis of this DPhil. Applicants must in addition satisfy the usual requirements for studying for a doctorate at Oxford:

<http://www.cs.ox.ac.uk/admissions/dphil/dphil-criteria.pdf>

Applicants should include a clear research statement, elucidating how they plan to contribute to the above goals with their expertise and interests. To apply candidates should send their CV, a transcript with a list of courses and grades, and the statement above, to Julie.sheppard@cs.ox.ac.uk

There is no deadline for applying: we will continue to process applications until a suitable candidate is found, and candidates are therefore recommended to apply as soon as possible.

If you have any questions about the application process or how to apply, please email:

Julie.sheppard@cs.ox.ac.uk If you have any technical questions about the DPhil studentship, please email:

Alessandro.Abate@cs.ox.ac.uk

* PhD at EPSRC Centre for Doctoral Training in AIMS

EPSRC Centre for Doctoral Training in Autonomous Intelligent Machines & Systems (AIMS)

We welcome PhD candidates with a strong interest in autonomous, intelligent systems from Engineering, Computer Science and related areas, such as Physics, Mathematics & Statistics. This is a joint programme between Information Engineering and Computer Science.

Application Deadlines for aims:

20th November 2015

22nd January 2016

11th March 2016

Email: aims-cdt@robots.ox.ac.uk Tel: +44 1865 283155

<http://aims.robots.ox.ac.uk/>

[Back to the contents](#)

6.3. PhD: Imperial College London, UK

Contributed by: Diego Oyarzún, d.oyarzun@imperial.ac.uk

PhD position in Systems & Synthetic Biology at the Department of Mathematics, Imperial College London

We have a fully funded 3 year studentship for a doctoral student to join Dr Diego Oyarzún (Biomathematics, Imperial College London) in an exciting project at the interface between Mathematics, Systems Biology and Synthetic Biology. There is no formal application deadline; the position is available immediately and applications will be reviewed on a rolling basis. Please note that due to funding regulations the position is available to UK or EU nationals only.

Description:

The primary goal of the project is to develop mathematical methods to predict and analyze the dynamics of metabolic networks under feedback regulation. The interplay between gene regulation and metabolism

controls how cells adapt to environmental perturbations. Some of the key topics in the area are: to understand how asymptotic dynamics depend on feedback architecture and parameters, and to quantify the propagation of intracellular noise between gene expression and metabolism.

Cutting-edge progress in genetic engineering now allows synthetic biologists to build intracellular feedback systems in microbes. This makes the study of metabolic regulation ever more important, with diverse applications such as the design of self-adaptive systems for chemical production or the identification of regulatory weak spots for future therapeutics. The project is part of a multidisciplinary collaboration with Dr Fuzhong Zhang's Synthetic Biology lab at the U Washington in St Louis.

Through our collaboration we will integrate theory and experiment to predict, measure and modify the responses of *E. coli* to nutritional shocks.

Background Required:

The ideal candidate should have a strong interest in Mathematical Biology, Systems & Synthetic Biology or Control Theory for Biological Systems. We seek someone open-minded, creative and willing to explore new ideas as part of a multidisciplinary team. The candidate should have excellent theoretical and computational skills, and hold (or be near completion of) a Masters-level degree in an area relevant to the project. Experience with biochemical models would be advantageous.

Candidates must meet Imperial College's entry requirements

<http://www.imperial.ac.uk/study/pg/apply/requirements/>.

To apply or for more information please contact Dr Diego Oyarzún (d.oyarzun@imperial.ac.uk) or visit <http://www.imperial.ac.uk/people/d.oyarzun>. Applications should include a CV and the names of two referees.

[Back to the contents](#)

6.4. PhD: ETH Zürich, Switzerland

Contributed by: Melanie Zeilinger, [Melanie Zeilinger](#)

PhD Positions in Intelligent Control Systems, ETH Zürich

Safe Learning-based and Distributed Control for Human in the Loop Systems

We invite applications for three PhD positions that are part of a larger research program with the goal of enabling high performance control with safety guarantees for control systems that are in direct interaction with humans.

The successful candidates will join the Institute for Dynamic Systems and Control at the Department of Mechanical and Process Engineering at ETH Zürich under the supervision of Prof. Melanie Zeilinger.

Description:

As modern applications drive automation outside of isolated industrial spaces into the safety-critical systems of our daily lives, human factors are becoming an essential element of control systems. Neglecting human interaction can here not only become a performance bottleneck, but also a safety risk.

Our research will focus on interactions that are highly complex, large-scale and distributed, affecting the controller and/or the dynamics of a single system as well as of a network of systems. We develop new control methods addressing these challenges in three main projects:

- Safe Learning-Based Control - Develop new techniques that enable online learning from data while providing guarantees on the closed-loop behavior of the system.
- Next Generation Active Safety Systems - Develop personalized safety systems for semi-autonomous cars that address more complex scenarios and improve threat assessment.

- Distributed Control of Complex System Networks With Uncertainty - Derive controllers with partial system knowledge that can deal with varying topologies and limited computation.

Each PhD project involves a mix of theory, computational tools and demonstrating applications, with individual emphasis.

Qualifications:

We are looking for a candidate with a Master's degree from a recognized university; a strong theoretical background in systems and control (prior knowledge in optimization and/or machine learning is a plus) and proficient oral and written English skills.

Application:

Candidates should include the following documents in their application: CV; short statement of motivation and research interests (1-2 pages); transcripts of all obtained degrees (in English), names and contact information of three references; one publication (e.g. thesis, conference/ journal publication).

Please email your application to Prof. Melanie Zeilinger, e-mail: mzeilinger@ethz.ch

For more information, see <http://www.idsc.ethz.ch/research-zeilinger/open-positions.html>

[Back to the contents](#)

6.5. PhD: Monash University, Australia

Contributed by: Mohsen Ramezani, mohsen.ramezani@monash.edu

1 PhD position in Mining Big Data for understanding and modeling public transport travel patterns using smart card data, at Monash University starting January 2016.

Specific Eligibility Requirements:

Meet Monash University's minimum English language proficiency requirements for entry into a higher degree by research program.

An H1 (first class) or H1 equivalent honours degree and/or a Master's Degree in Transport Engineering, Machine Learning, or Applied Mathematics (applicants with a master's degree are strongly preferred)

Research and/or practical experience relevant to transport engineering, big data, machine learning, pattern recognition, clustering, or data visualization.

Applicants should have strong quantitative, analytical, and programming skills. Knowing Matlab, C++, Python, or GIS is a plus.

Applicants should have strong communication (both oral and written) skills. Applicants with at least one ISI journal publication are preferred.

Scholarship: \$25,849 p.a. (tax free, indexed annually) over 3 years (plus a 6 month extension option).

Deadline for expressions of interest: Thursday, October 15th, 2015

Supervised by:

Dr. Meead Saberi (meead.saberi@monash.edu); Director Monash City Sciences Group

Dr. Mohsen Ramezani (mohsen.ramezani@monash.edu)

[Back to the contents](#)

6.6. PhD: Southern Illinois University, USA

Contributed by: Arash Komaei, akomaei@siu.edu

We are searching for three exceptional PhD students to work on funded research assistant positions in the Department of Electrical and Computer Engineering at Southern Illinois University (SIU), Carbondale. The

positions are available as early as Spring 2016 and contingent on satisfactory performance and fulfillment of the department requirements can be extended to four years.

The first two positions are in the general area of dynamical systems and control applied to magnetic control of micro-robots. For these positions, a BS degree in electrical, mechanical, or aerospace engineering or applied physics is required. Applicants must demonstrate strong courage for independent experimental work in the lab, in addition to interest in theory development.

The third position is in the general area of data science and requires strong background in applied mathematics and statistics in addition to advanced programming skills. For this position, applicants with a BS degree in electrical/computer engineering, computer science, applied mathematics, statistics, or operations research are considered.

For both areas, a relevant MS degree is a definite advantage.

Interested applicants may send their application package or inquiries to Dr. Arash Komaee at (akomaee@siu.edu). A complete application package must include a detailed Curriculum Vitae, name and contact information of at least three references, and a brief description of the applicant's research interests.

[Back to the contents](#)

6.7. PhD: Syracuse University, USA

Contributed by: Amit Sanyal, aksanyal@syr.edu

Two research assistantships are available for doctoral level studies in the Department of Mechanical and Aerospace Engineering at Syracuse University for Spring or Fall 2016.

Specific research areas of interest are: (1) nonlinear motion estimation for relative motion between unmanned aerial vehicles in indoor environments; (2) robust attitude and position control of maneuverable aerial vehicles; and (3) real-time onboard implementation of estimation and control algorithms on small quadcopter UAVs.

Applicants are expected to have strong background in mathematical control theory and estimation theory, evidenced by prior MS research and/or research publications in these areas. Ample opportunities exist for collaboration with industry, the Syracuse Center of Excellence, and government labs in the greater Syracuse area of central New York state.

For more information, please contact: Prof. Amit Sanyal, Mechanical and Aerospace Engineering, Syracuse University, Syracuse, NY 13244, Email: aksanyal@syr.edu.

[Back to the contents](#)

6.8. PhD: Linköping University, Sweden

Contributed by: Anders Hansson, anders.g.hansson@liu.se

PhD Positions available starting Jan 2016 in Automatic Control with focus on Distributed optimization for scalable computations in control

Research will be conducted at Division of Automatic Control, Dept. of Electrical Engineering, Linköping University (LIU), Sweden, under the supervision of Prof. Anders Hansson.

Position Description:

We are looking for a motivated, talented student, who wish to undertake PhD research at the cutting edge of automatic control; and optimization. Provided that the applicant is admitted to candidacy in the Ph.D. program at LIU, the appointment will be for up to 5 years.

Who should apply:

The desired candidate holds a M.S. degree in engineering (preferably in electrical engineering, computer science, mechanical engineering, aerospace engineering), or a related field, and has:

a strong academic record showing excellent analytical skills; a strong mathematical background including systems and control theory; proficiency in Matlab; proficiency in oral and written English.

Expression of interest:

If interested in the position please send an email to anders.g.hansson@liu.se with subject “VR PhD-student last-name” including:

a one page cover letter describing your research interests and early achievements; a detailed CV; B.S. and M.S. transcripts; the names and email addresses of at least 2 referees.

Contact: Prof. Anders Hansson, anders.g.hansson@liu.se, +46 13 28 1681

[Back to the contents](#)

6.9. PhD: Delft University of Technology, The Netherlands

Contributed by: Bart De Schutter, b.deschutter@tudelft.nl

PhD position: “Robust multi-agent control of large-scale smart energy systems”

Delft University of Technology

The Delft Center for Systems and Control (<http://www.dsc.tudelft.nl>) of Delft University of Technology, The Netherlands has a vacancy for a PhD position on “Robust multi-agent control of large-scale smart multi-carrier energy systems”.

In this project we will develop novel robust control methods for large-scale systems. As application, we will focus on balancing demand, supply, and in particular storage and conversion in smart mixed electricity/gas networks. The central idea in such smart multi-carrier energy systems is to install small to medium-size local energy storage systems (based on batteries, capacitor banks, or flywheels) and conversion units (based on natural gas and/or hydrogen) at the street, district, and city level. In order to deal with the large-scale nature of such systems, we will adopt a multi-level and distributed control approach, where local control agents act and interact at each control level to jointly reach the best possible performance.

In particular, the aim is to develop robust multi-level and distributed control methods that guarantee convergence of the local control agents to a set of consistent control actions in the presence of various kinds of disturbances. In addition, we will develop algorithms that provide a balanced trade-off between computational efficiency and optimality. This will then result in fast and efficient robust control methods for balancing demand, supply, storage and conversion in smart multi-carrier energy systems, that will enhance the flexibility, efficiency, and sustainability of smart grids.

We are looking for a candidate with an MSc degree in systems and control, applied mathematics, electrical engineering, or a related field, and with a strong background or interest in control and/or optimization. The candidate is expected to work on the boundary of several research domains. A good command of the English language is required.

We offer the opportunity to do scientifically challenging research in a multi-disciplinary research group. The appointment will be for up to 4 years. The PhD student will also be able to participate in the research school DISC (<http://www.disc.tudelft.nl>). As an employee of the university you will receive a competitive salary, as well as excellent secondary benefits. Assistance with accommodation can be arranged.

More information on this position and on how to apply can be found at

http://www.dsc.tudelft.nl/bdeschutter/vac/vacancy_phd_incite.pdf

or by contacting Bart De Schutter (b.deschutter@tudelft.nl).

6.10. PhD: Instituto Politécnico Nacional, Mexico

Contributed by: Konstantin Starkov, konstarkov@hotmail.com

Two PhD positions are available starting Jan. 2016 in the cutting edge of mathematical medicine, applied mathematics and nonlinear dynamics: dynamical analysis and control problems for cancer tumor growth models.

Research will be conducted under the supervision of Prof. Dr. Konstantin Starkov (konst@citedi.mx, konstarkov@hotmail.com).

It is assumed that the proposed PhD students will take part in the realization of the CONACYT project N 219614 with the title “Análisis de sistemas con dinámica compleja en las áreas de medicina matemática y física utilizando los métodos de localización de conjuntos compactos invariantes” (2015-2018), Mexico.

Financial support for studying in this PhD program will be provided by CONACYT in accordance with national standards. An additional income from resources of IPN projects will be also available. The PhD program period is 3-4 years.

Who should apply:

Students with background in Control Systems or Engineering disciplines are welcome to apply. Preferences are given for students with a strong background in Applied Mathematics / Nonlinear Dynamics or Mathematical Medicine / Biology.

The desired candidates hold a Master degree (or equivalent, giving access to doctoral studies) in the mentioned areas and have:

An excellent academic record showing analytical skills; A strong mathematical background in the mentioned areas; Strong interest to work in the proposed area; Proficiency in oral and written English.

Working language is English/Spanish.

If you have interest to this position please send an email to Prof. Konstantin Starkov (konst@citedi.mx, konstarkov@hotmail.com) including:

One page cover letter describing your skills and plans; Your current CV; Bachelor and master transcripts (list of courses with corresponding grades); A summary of your master thesis; Name and email of two referees.

[Back to the contents](#)

6.11. PhD: Cleveland State University, USA

Contributed by: Hanz Richter, h.richter@csuohio.edu

Doctoral student positions starting January 2016.

Position 1:

Design, optimization and control of cyber-physical systems involving exercise and rehabilitation. This NSF-funded research will be conducted at Cleveland State University under the supervision of Prof. Hanz Richter (Mechanical Engineering) in close collaboration with other faculty from the departments of Mechanical Engineering, Electrical and Computer Engineering and Human Performance.

The project seeks to develop exercise machines that adapt to their users with the objective of maximizing objectives related to exercise effectiveness. It involves biomechanical modeling, estimation theory, machine design, optimization and control theory, with a focus on passivity-based techniques, stable adaptation, interaction (impedance) control and extremum-seeking control.

Position 2:

Optimization and control of robots with energy regeneration: This NSF-funded research will be conducted

under the supervision of Prof. Hanz Richter.

The project investigates methods to design, model, control and optimize robots with regenerative drive systems, particularly those based on emergent ultracapacitor technologies. It involves robot control theory, electromechanical systems, system modeling and mechanical design.

Position 3:

System identification of human motion control. This NSF-funded research will be conducted under the supervision of Dr. Ton van den Bogert.

The aim of the project is to identify the feedback control laws that human subjects use while walking. The methods include: human movement analysis during random perturbations, musculoskeletal dynamic modeling, control system modeling, and large-scale optimization.

Position 4:

Predictive simulation of human movement. This NSF-funded research will be conducted under the supervision of Dr. Ton van den Bogert.

The first aim of the project is to predict how human subjects perform exercise, when provided with a specific mechanical environment (i.e. an exercise machine) and a task (i.e. motion amplitude and repetition rate). The second aim is to optimize the design of the exercise machine for specific exercise goals. The work includes human movement analysis, musculoskeletal modeling, and optimization.

For all positions, we seek open-minded, imaginative and skilled students with a solid background in dynamics and controls, from theory to computation and design. For positions 1 and 2, rapid control prototyping and experience or skills in machine design and mechatronic system integration are a plus. For positions 3 and 4, experience in human biomechanics and musculoskeletal modeling are desired.

The successful candidate will receive a full tuition waiver and a yearly stipend, and will receive full support to attend technical conferences where he/she has a paper. Support is available for up to four years, as long as the student maintains good academic performance and makes progress in research.

A master's degree and a bachelor's degree in Mechanical Engineering are required, as well as evidence of strong academic credentials and excellent English written and oral communication skills. To apply, send the following by email to Prof. Richter (subject line: CPS CSU Pos 1 or 2) or Prof van den Bogert (subject line: CPS CSU Pos 3 or 4) by Oct. 30:

Unofficial transcript for bachelor's and master's degrees in Mechanical Engineering; CV including publications or presentations; a statement of research interests; two letters of reference from past employers or academic advisors.

Note: Upon selection, the successful candidate will be instructed to apply for Spring 2016 admission into CSU's Doctor of Engineering program, for which a Graduate Record Examination score and proof of English proficiency could be required.

[Back to the contents](#)

6.12. PhD: Gyeongsang National University, Republic of Korea

Contributed by: Yoonsoo Kim, yunsoo@gnu.ac.kr

A PhD position is available to work on control of networks of aerospace systems such as UAVs, spacecraft. The PhD student will work on fundamental challenges in controlling a large-scale network of under-actuated and nonlinear aerospace systems equipped with small computational power, and also the demonstration of existing and newly proposed solutions to those challenges via a formation flight test platform available at the institution.

Candidates must hold a MEng/MSc in mechanical, aerospace engineering or related fields, preferably with strong mathematical background, and should be able to start his/her study from March 2016.

The position shall remain open until October 31, 2015. The three-year tuition fees and basic living expenses shall be fully covered by a funding source from the National Research Foundation of Korea.

Some information on Gyeongsang National University (<http://eng.gnu.ac.kr/main/>) may be found at http://en.wikipedia.org/wiki/Gyeongsang_National_University

The applicants should email their CVs, brief statement of their background and interests and contact information to Prof. Yoonsoo Kim, Department of Aerospace and Software Engineering, Gyeongsang National University, Jinju 660-701, Republic of Korea (Email: yunsoo@gnu.ac.kr).

Prof. Y. Kim's research papers may be found at

<https://scholar.google.co.kr/scholar?hl=ko&q=Yoonsoo+Kim&btnG=&lr=>

[Back to the contents](#)

6.13. PhD: Instituto de Investigaci3n Mariñas, Spain

Contributed by: Julio R. Banga, julio@iim.csic.es

Two Marie-Curie PhD positions at IIM-CSIC
(Spanish Council for Scientific Research), Vigo (Spain)

Topic: Optimization and Control in Computational Systems Biology.

<https://goo.gl/85Op8t>

Job Description:

Applications are invited for two Early Stage Researcher Positions in computational systems biology under the supervision of Prof. Julio R. Banga, IIM-CSIC (Spain), starting in early 2016.

Position ESR6: novel optimization methods for systematic development of dynamic models of biological systems.

Position ESR7: optimal control methods to explain and predict operating principles in biochemical pathways.

Duration: 36 months. These Early Stage Researchers (ESRs) will be hired for 36 months each and will be expected to pursue a PhD. Candidates must be in possession of a relevant Masters degree (or very close to obtaining it) at the time of appointment.

Salary will be excellent, in the range of 33-36 kEuros gross/year, according to EU regulations (Marie Curie ITN Early Stage Researcher conditions).

Other benefits: the ESRs will be involved in a Marie-Curie network with excellent opportunities for scientific and personal development, including funding for short stays at top-class research groups in Germany and the UK, plus regular training events and meetings across Europe.

Further Information (including how to apply): <https://goo.gl/85Op8t>

[Back to the contents](#)

6.14. PhD/Post-Doc: University of North Texas, USA

Contributed by: Yan Wan, yan.wan@unt.edu

Multiple fully funded Ph.D. and Postdoctoral positions available in the Department of Electrical Engineering at the University of North Texas.

The Postdoctoral positions are multiple-year positions that start immediately. We offer competitive salaries, access to laboratories, and funds for travels to conferences.

The research areas of these positions are generally related to network control, wireless networking, cyber-physical systems, and their applications to unmanned aerial vehicles and air traffic management applications. Applicants for the Postdoctoral positions are required to have received a Ph.D. degree in related engineering field with a strong background in at least one of the following areas: control, stochastic systems, optimization, big data, software development, wireless communication, and implementation of embedded systems. Previous research experience in unmanned aerial vehicles and/or traffic management is a plus. Depending on the candidate's expertise, the position can involve fundamental theoretical development, software development, and implementation and fabrication of real systems. The candidates are also expected to gain experience in project management. Excellent writing and communication skills are expected.

Applications for the Ph.D. positions are required to have received a Bachelor's degree in engineering field related to control and/or wireless communication. Self-motivated students with strong theoretical background and/or hands-on experience are encouraged to apply. Excellent writing and communication skills are expected.

Previous research experience with a good publication record will be highly valued.

Interested applicants for the Ph.D. and Postdoctoral positions please send the application to Dr. Yan Wan by email: yan.wan@unt.edu. Please send one pdf document that includes a 1-page cover letter that states their qualifications and career plans, detailed CV, and a list of professional references. Applications will be received by November 30 or until the positions are filled.

UNT is a major research university with rapidly growing engineering research and educational programs. As the nation's 24th largest public university and the largest, most comprehensive in the Dallas-Fort Worth area, UNT is dedicated to providing an excellent educational experience to its 36,000 students through 99 bachelor's, 83 master's, and 36 doctoral degree programs in its 12 colleges and schools, many nationally and internationally recognized. UNT is strategically located in Denton, Texas, a vibrant city with a lively arts and music culture, at the northern end of the Dallas-Fort Worth metropolitan area. The DFW area has more than six million people, with significant economic growth, numerous industrial establishments, and excellent school districts.

The Electrical Engineering Department offers BS, MS, and Ph.D. degrees in electrical engineering. It is home to over 400 undergraduate and graduate students.

Additional information about the department is available at the website: <http://engineering.unt.edu/electrical/>.
[Back to the contents](#)

6.15. Post-Doc: Northeastern University, USA

Contributed by: Rifat Sipahi, rifat@coe.neu.edu

Postdoctoral Position in System Dynamics Modeling of Spinal Cord Regeneration

A Postdoctoral Research Associate position is available for joining an interdisciplinary research team established by the Laboratory of Neurobiology (PI: Professor Günther K.H. Zupanc; Department of Biology) and the Complex Dynamical Systems & Control Laboratory (PI: Professor Rifat Sipahi; Department of Mechanical and Industrial Engineering) at Northeastern University, Boston, Massachusetts, USA.

Funded by the National Science Foundation, the postdoctoral researcher will work on a project at the intersection of neuroscience, regenerative biology, applied mathematics, and system dynamics, involving computational and mathematical modeling of regeneration after spinal cord injury in regeneration-competent organisms. The successful candidate will have genuine interest in biological systems, and will hold a Ph.D.

in a relevant discipline with strong background in modeling of dynamical systems, e.g., using agent-based modeling, partial differential equations, and/or a mix of similar techniques.

The appointed candidate will also have the opportunity to become involved in the writing of manuscripts, preparing grant proposals, supervising graduate and undergraduate students, and participating in outreach activities.

This position is available immediately for one year, with the possibility of extension for two more years. A competitive salary and fringe-benefits package will be offered. Please combine the following documents into a single PDF and send the PDF by e-mail to both principal investigators, Professor Günther K.H. Zupanc (email: g.zupanc@neu.edu) and Professor Rifat Sipahi (email: g.zupanc@neu.edu):

Motivation letter (no more than 2 pages); Curriculum vitae (as detailed as possible; please present your journal publications separately from conference publications); Names of at least three references, including contact details (one of which must be the PhD advisor of the candidate); pdfs of possible publications.

[Back to the contents](#)

6.16. Post-Doc: The Ohio State University, USA

Contributed by: Xinghua Jia, jia.243@osu.edu

Post-doc Position on Extended Kalman Filter for Applied Neuroscience at The Ohio State University

This position is immediately available and sponsored by air force. It is a basic science research position. Non-classified. Open to any scholars.

The Nano Bio-systems and Bio-inspired Engineering Laboratory at The Ohio State University (OSU) has an immediate opening for a post-doctoral researcher interested in Kalman Filter for quantitative biology. The focus of the position is on developing a new theory for extended Kalman filtering for applications in applied neuroscience and cognitive engineering. The research results are expected to be implemented in a wearable multi-sensor integrated system for monitoring cognitive behaviors with a long-term interest on closed-loop feedback control of a multi-loop decentralized optimal control system for human performance and medical practices. The successful candidate will work closely with Dr. Scott Galster (Chief for Applied Neuroscience at the Air Force Research Laboratory) and Dr. Mingjun Zhang at The Ohio State University. The position is in the Biomedical Engineering Department at OSU.

This is a basic science and applied engineering research position. We welcome any recent PhD graduates, who are interested in pursuing future careers in quantitative cognitive and neuroscience fields to apply. A solid mathematics background and former experience with Kalman filters are expected. Additional background in systems and control are a plus. While having a clear goal for applications, this position is specifically designed to support basic science research related to applied mathematics and systems science/engineering. The initial appointment is for one year. Notable theoretical contributions is a must for renewing this multi-year position as measured by high quality publications. Strong writing skills for journal papers is highly expected.

To apply, please send CV along with 2-3 publications to:

Mingjun Zhang, PhD & D.Sc. Professor
Department of Biomedical Engineering
Investigator, Davis Heart and Lung Research Institute
Faculty Mentor, Interdisciplinary Biophysics Graduate Program
Member, Center for Regenerative Medicine and Cell Based Therapies
The Ohio State University

318 Biomedical Research Tower
OSU Medical Center
Columbus, OH 43210-1002
Email: zhang.4882@osu.edu
Tel: 614-292-3181
<https://bme.osu.edu/people/zhang.4882>
http://mjzhanglab.org.ohio-state.edu/about_pi.html

[Back to the contents](#)

6.17. Post-Doc: George Washington University, USA

Contributed by: Taeyoung Lee, tylee@gwu.edu

Post-Doc: Autonomous Aerial Exploration (GWU)

Flight Dynamics and Control Lab at the Department of Mechanical and Aerospace Engineering, George Washington University invites applications for one post-doctoral scientist position.

The main objective of the research is to develop motion planning and control of multiple aerial vehicles exploring an unknown area autonomously and cooperatively. The desired paths of the vehicles should be developed in an optimal fashion to maximize the information gain from the sensor measurements on those paths, while explicitly considering the sensor limitations such as the maximum sensing range and viewing angle. These will be illustrated by both numerical simulations and indoor flight tests with multirotor unmanned aerial vehicles.

Required qualification

Ph. D in control system engineering, computer science or relevant fields; Backgrounds in control, estimation, motion planning, mapping, and SLAM; Experiences in flight experiments of multirotor UAV; Expertise in C/C++, ROS, and multithread programming

The appointment will be for a period of 1 year, starting no later than Fall 2015, and it will be extended for another year based on the evaluations.

The application should consist of

A motivation letter stating why the applicant is qualified to the research; A complete CV with a full publication list; List of three references

These documents should be combined into a single pdf file and sent to Prof. Taeyoung Lee (tylee@gwu.edu)

[Back to the contents](#)

6.18. Research Fellow: Nanyang Technological University, Singapore

Contributed by: Jianliang Wang, ejlwang@ntu.edu.sg

A Research Fellow position is available in the School of Electrical & Electronic Engineering, Nanyang Technological University, working on the project on Aerobridge Auto-docking system for Passenger Aircraft.

Aerobridge is widely used for passengers to board/disembark commercial passenger aircraft. The goal of the project is to develop a control system to help a human operator to drive an aerobridge to precisely dock an aircraft. Errors during the docking process must be avoided as damage to the aircraft is very costly and causes flight delays. Sensors (including vision, laser sensors, etc.) will be used to determine the position of the aircraft and the aerobridge. Appropriate docking algorithms will be developed to guide the aerobridge based on optimal path planning and real-time feedback of the sensor measurement data. The system must be able to operate in all weather conditions, including day and night, rain or shine. So a suitable suite of

sensors must be selected to ensure the safe operation of the system, in addition to reliable and robust control algorithms.

The salary range for the research fellow is S\$4000 - S\$5000 per month (commensurate with qualification credentials and experience), with additional performance bonus payable at the end of academic year. The position is available immediately and is for a period of 2 years.

The requirements are:

A Ph.D degree in relevant areas of the project; Demonstrated technical knowledge and capabilities (in the form of publication records) pertaining to intelligent vision systems and vision-based control systems; Experiences in algorithm development and implementation for intelligent vision systems and vision-based control under various operational conditions.

Interested candidates please email CV/resume to Prof Jianliang Wang through email address: ejlwang@ntu.edu.sg.

[Back to the contents](#)

6.19. Faculty: Harbin Institute of Technology, Shenzhen Graduate School, China

Contributed by: Ms. Zhao, scc.hitsz@gmail.com

Faculty Positions in Systems and Control

Organization/Institution: Harbin Institute of Technology, Shenzhen Graduate School, Shenzhen, China

Department: School of Mechanical Engineering and Automation

The Division of Control and Mechatronics Engineering at Harbin Institute of Technology, Shenzhen Graduate School (HITSZ) invites applications for several faculty positions at all ranks. We are seeking candidates with excellent credentials in the areas of systems and control, wind energy, power systems and smart grids.

Applicants must have a Ph.D. or equivalent in electrical, mechanical and power systems engineering and need to show strong research record and potential. Successful candidates will be received a joint appointment in the Center of Systems and Control. The Division currently has 11 full-time faculty members, and is expected to grow to 20 faculties in the next few years.

HITSZ offers a competitive salary and the salary levels at HITSZ for these positions are substantially higher than those provided by most universities in China, with full professor in the range of RMB 170K to 230K per year, associate professor in the range of RMB130K to 160K per year, and assistant professor in the range of RMB 90K to 110K per year. Bonus is a plus for all levels, subject to faculty's performance.

Interested candidates can send detailed CV, list of publications, statement of research (no more than 3 pages), teaching interests (no more than 2 pages), and a cover letter including contact information of three references to:

Ms. Zhao

School of Mechanical Engineering and Automation

HIT Campus Shenzhen University Town

Xili, Shenzhen

Guangdong

P. R. China 518055

or email the documents to scc.hitsz@gmail.com

[Back to the contents](#)

6.20. Faculty: Washington University in St. Louis, USA

Contributed by: Kim Leahy, Leahyk@wustl.edu and Hiro Mukai, facsearch@ese.wustl.edu

Tenured/Tenure-Track Faculty

The Preston M. Green Department of Electrical & Systems Engineering at Washington University in St. Louis invites applications for faculty positions at all levels, for fall 2016. The Electrical & Systems Engineering department moved to a new building, Preston M. Green Hall, with state-of-the-art facilities.

Candidates should be exceptionally strong, possess novel and creative visions of research, and commit gladly to teaching at both the undergraduate and graduate levels. They should have an earned doctorate in Electrical Engineering, Computer Engineering, Computer Science, Applied Physics, Systems Engineering, Mathematics, Statistics, Operations Research or related fields.

Technical areas of interest include, but are not limited to, signal processing, machine learning, imaging, information theory, network science, applied physics, electronics, control systems, operations research, optimization, applied mathematics, and applied statistics. Applications include biomedicine, energy, the environment, robotics, financial engineering, and modeling of physical and complex systems. Successful candidates are expected to conduct high-quality research and teaching, publish in peer-reviewed journals, and participate in department and university service. Applications will be accepted immediately, and interviews will begin after January 1, 2016. Applications received by December 1, 2015, will receive full consideration.

The details of the application process and necessary documents are found at

<http://ese.wustl.edu/aboutthedepartment/Pages/faculty-openings.aspx>.

Washington University in St. Louis is a medium-size private university, which is 14th in U.S. News & World Report's national university ranking. Washington University in St. Louis is an Equal Opportunity and Affirmative Action employer, and invites applications from all qualified candidates. Employment eligibility verification required upon employment.

[Back to the contents](#)

6.21. Faculty: Washington University in St. Louis, USA

Contributed by: Hiro Mukai, facsearch@ese.wustl.edu

The Preston M. Green Department of Electrical and Systems Engineering at Washington University, St. Louis, Missouri invites applications for a full-time faculty position as a Lecturer. This non-tenure-track position will start in January 2016.

Candidates should have a doctorate in Electrical Engineering or related fields or industrial experience of more than 5 years with a strong commitment to excellence in teaching at the undergraduate level. The department is interested in candidates who can teach lecture courses as well as laboratory courses. Applicants in all areas of electrical engineering will be considered; however our current needs are greatest in electric and electronic circuits.

Applications will be accepted immediately, and interviews will begin any time. Applicants should prepare in electronic format (PDF) a letter of interest, a curriculum vitae, a list of at least three academic or professional references (names, affiliations and electronic addresses, please), a statement of teaching philosophy and a list of courses taught when applicable with clarification for your role as TA or instructor in charge as well as any teaching evaluations. Complete details can be found at:

<http://ese.wustl.edu/aboutthedepartment/Pages/faculty-openings.aspx>

Washington University in St. Louis is a medium-size private university, which is 14th in U.S. News & World Report's national university ranking.

Washington University in St. Louis is an Equal Opportunity and Affirmative Action employer, and invites applications from all qualified candidates. Women and minority candidates are encouraged to apply. Employment eligibility verification required upon employment.

6.22. Faculty: Boston University, USA

Contributed by: Sean Andersson, sanderss@bu.edu

Boston University

Department of Mechanical Engineering

Division of Systems Engineering

Open Faculty Positions

The Department of Mechanical Engineering (ME) and the Division of Systems Engineering (SE) invite applications for two tenure track positions at the Assistant Professor level, beginning Fall 2016. The positions are nominally “Mechatronics” and “Cyber-physical Systems” although the distinction is not sharp, and candidates applying to either one will automatically be considered for the other. The ME department is multi-disciplinary with expertise in systems and control, nanotechnology, materials, fluid dynamics, and computational methods in engineering. The multidisciplinary expertise of the SE Division includes systems and control, information, computational biology, and production, service and energy systems. Both are further strengthened by their affiliation with the Center for Information and Systems Engineering. In collaboration with the College of Engineering, ME and SE are implementing ambitious ten-year plans, in line with Boston University’s commitment as a top tier research university engaged in substantial growth in the coming years. As part of this commitment, the College of Engineering and ME department has recently constructed a collaborative laboratory space for ground-based and flying robots

Interested candidates interested should have a Ph.D. degree in a relevant field of engineering or applied science, and should be able to show strong potential for attracting external research funding. The applicant should be able to contribute to the graduate and undergraduate programs in ME and SE.

For additional information and instructions on how to apply, please go to <https://academicjobsonline.org/ajo/jobs/6240>

Application deadline is January 1, 2016; however, review of applications will begin immediately so applicants are encouraged to apply early.

We are an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability status, protected veteran status, or any other characteristic protected by law. We are also a VEVRAA Federal Contractor

[Back to the contents](#)

6.23. Faculty: University of Houston, USA

Contributed by: Pradeep Sharma, psharma@uh.edu

The Department of Mechanical Engineering at the University of Houston (UH) invites applications for an open rank faculty position at the Assistant/Associate/Full Professor level beginning Fall 2016. Successful candidates are expected to establish an internationally recognized dynamic research program in the broad areas of solid mechanics or control systems.

As part of a major drive for excellence, including the recent designation of UH as a Tier One university, the Cullen College of Engineering has a strong commitment to expand, as well as, advance the quality of our engineering research programs. UH is Texas’ premier public metropolitan research and teaching institution with more than 40,000 students. Houston is home to the Texas Medical Center, the largest medical center

in the world, the NASA Johnson Space Center, and multiple high-tech companies offering excellent local collaboration opportunities.

Applicants must have earned a PhD in a relevant area of physical sciences or engineering. Successful applicants must demonstrate a strong record of scholarship, and external funding, as well as a commitment to teaching. Candidates should send a cover letter, statement of teaching and research interests, goals and accomplishments, curriculum vitae and a list of five references in a single pdf to [ykulkarni \[at\] uh \[dot\] edu](mailto:ykulkarni@uh.edu). You will also need to apply through the University website at <https://jobs.uh.edu/postings/26893>. The position(s) will be filled contingent upon the availability of funds.

The University of Houston is an equal opportunity/affirmative action employer. Minorities, women, veterans and persons with disabilities are encouraged to apply.

[Back to the contents](#)

6.24. Internship: Research Centre in Automatic Control, France

Contributed by: Samuel Martin, samuel.martin@univ-lorraine.fr

Internship position in signal processing - statistics entitled “Modeling of opinion dynamics in on-line social networks”, in the Research Centre in Automatic Control, Nancy, France.

The candidate should be finishing his/her Masters or engineer degree, majoring in computer sciences, statistics, signal processing, applied mathematics or equivalent.

Required skills

Matlab / R programing; data mining; dynamical systems; signal processing

Duration: 3 to 6 months

Starting between January and April 2016

Presentation of the internship:

Due to the emergence of the Internet and smart-phones, the amount of personal data available has skyrocketed. The largest international companies such as Facebook, Microsoft or Google use these data as main source of revenue.

From a scientific viewpoint, these data provide the opportunity to better understand human behavior at a large scale, using modern statistics and data mining. The project aims at modeling and analyzing how social interactions influence opinions through time.

To do so, the intern will work on a dataset coming from on-line collective decision processes gathering more than 800 individuals. The intern will analyze the dataset using signal processing tools, data mining and statistics.

For further information, please contact the advisor, Samuel Martin samuel.martin@univ-lorraine.fr

Salary: 523,26 Euros

[Back to the contents](#)

6.25. Research Engineer/Scientist: AreteX Engineering, New York, USA

Contributed by: Behnood Gholami, bgholami@aretexeng.com

Research Engineer/Scientist, Mathematical Modeling and Control Systems

AreteX Engineering - New York, NY

AreteX Engineering, a medical technology startup company accelerating the use of information technology in healthcare, has an immediate opening for a Research Engineer/Scientist in its office located in New York

City, SoHo district. AreteX is a former resident of the Harvard Innovation Lab (ilab) and a current resident of the NYU Incubator.

The position involves developing mathematical algorithms for innovative biomedical technologies involving mathematical modeling, physiological signal processing, and control systems design. We are looking for a self-motivated, highly talented individual with an excellent background in signal processing, control systems, and machine learning. The successful candidate will work closely with a team of physicians, nurses, engineers, and scientists in designing new clinical decision support systems.

Minimum Requirements:

- * MS or PhD in computer science, electrical engineering, biomedical engineering, applied mathematics, or a similar discipline.
- * Expertise in mathematical modeling and dynamical systems and control. Knowledge of adaptive control is a plus.
- * Expertise in applied signal processing techniques.
- * Expertise in theory and application of machine learning with a broad understanding of methodological approaches and proficiency in practice.
- * Strong interest in research and learning new technologies.
- * Proficient at writing technical papers/reports/presentations.
- * Experience with Python.

[Back to the contents](#)