

E-LETTER ON SYSTEMS, CONTROL, & SIGNAL PROCESSING ISSUE 368, APRIL 2019

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



Welcome to Issue 368 of the CSS E-letter available [here](#).

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

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

Contents

1. IEEE CSS Headlines

- 1.1 CSS Social Media Accounts
- 1.2 CSS Technically Cosponsored Events
- 1.3 IEEE Control Systems Society Publications Content Digest
- 1.4 IEEE Transactions on Automatic Control
- 1.5 IEEE Control Systems Letters
- 1.6 IEEE CSS Awards
- 1.7 IEEE CSS Outreach Fund

2. Miscellaneous

- 2.1 Online Seminars from University of South Florida
- 2.2 Testbed for Control of Flight Dynamics
- 2.3 Call for Nominations: Roberto Tempo Best CDC Paper Award
- 2.4 Summer School: When Game Theory Meets Systems and Control

3. Books

- 3.1 Mechatronic Components: Roadmap to Design
- 3.2 Robust and Fault-Tolerant Control

4. Journals

- 4.1 Journal of Pure and Applied Mathematics
- 4.2 Asian Journal of Control
- 4.3 International Journal of Control, Automation, and Systems
- 4.4 Systems and Control Letters

- 4.5 IET Control Theory & Applications
- 4.6 International Journal of Applied Mathematics and Computer Science
- 4.7 CFP: International Journal of Control, Automation, and Systems
- 4.8 CFP: Frontiers in Neurorobotics

5. Conferences & Workshops

- 5.1 International Workshop on Numerical Software Verification, USA
- 5.2 IEEE Connected and Automated Vehicles Symposium, USA
- 5.3 Allerton Conference on Communication, Control, and Computing, USA
- 5.4 International Conference on System Theory, Control and Computing, Romania
- 5.5 International Conference on Systems and Control, Morocco
- 5.6 Indian Control Conference, India
- 5.7 Midwest Workshop on Control and Game Theory, USA
- 5.8 International Conference on Methods & Models in Automation, Poland
- 5.9 International Conference on Control, Automation and Systems, South Korea
- 5.10 Learning for Dynamics and Control Conference, USA
- 5.11 International Conference of Intelligent Unmanned System, China

6. Positions

- 6.1 PhD: George Washington University, USA
- 6.2 PhD: Norwegian University of Science and Technology, Norway
- 6.3 PhD: Western University, Canada
- 6.4 PhD: Technische Universität (TU) Berlin, Germany
- 6.5 PhD: Dalhousie University, Canada
- 6.6 PhD: Bundeswehr University Munich, Germany
- 6.7 PhD: University of Groningen, The Netherlands
- 6.8 PhD: University of Alberta, Canada
- 6.9 PhD: Grenoble University, France
- 6.10 PhD: Gipsa-lab & Grenoble University, France
- 6.11 PhD: Arizona State University, USA
- 6.12 Postdoc: North Carolina A&T State University, USA
- 6.13 Postdoc: Nazarbayev University, Kazakhstan
- 6.14 Postdoc: Nanyang Technological University, Singapore
- 6.15 Postdoc: Dalhousie University, Canada
- 6.16 Postdoc: University of Groningen, the Netherlands
- 6.17 Faculty: Eindhoven University of Technology, Netherlands
- 6.18 Faculty: La Pontificia Universidad Javeriana, Colombia
- 6.19 Faculty: University of Sheffield, UK
- 6.20 Faculty: Norwegian University of Science and Technology, Norway
- 6.21 Associate Director: Curtin University, Australia
- 6.22 Research Associate: Curtin University, Australia

1 IEEE CSS Headlines

1.1. CSS Social Media Accounts

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

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

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

[Back to the contents](#)

1.2. CSS Technically Cosponsored Events

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

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

- 57th Allerton Conference on Communication, Control, and Computing. Monticello, United States. Sep 24–Sep 27, 2019. <https://allerton.csl.illinois.edu/>

- 24th International Conference on Methods and Models in Automation and Robotics (MMAR 2019). Miedzysz-droje, Poland. Aug 26 - Aug 29, 2019. <http://mmar.edu.pl/>

- 8th International Conference on Systems and Control (ICSC'19). Marrakech, Morocco. Oct 23 - Oct 25, 2019. <http://lias.labo.univ-poitiers.fr/icsc/icsc2019/>

- 23rd International Conference on System Theory, Control and Computing - ICSTCC 2019. Sinaia, Romania. Oct 9 - Oct 11, 2019. <http://icstcc2019.cs.upt.ro/>

- 27th Mediterranean Conference on Control and Automation. Akko, Israel. Jul 1 - Jul 4, 2019. <https://med19.net.technion.ac.il/>

For a full listing of CSS technically cosponsored conferences, please visit

<http://ieeecss.org/conferences/technically-cosponsored> and for a list of the upcoming and past CSS main conferences please visit <http://ieeecss.org/conferences>

[Back to the contents](#)

1.3. IEEE Control Systems Society Publications Content Digest

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

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

The CSS Publications Content Digest, available at

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

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

Each issue offers readers a rapid means to survey and access the latest peer-reviewed papers of the IEEE

Control Systems Society. We also include links to the Society's sponsored Conferences to give readers a preview of upcoming meetings.

[Back to the contents](#)

1.4. IEEE Transactions on Automatic Control

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

IEEE Transactions on Automatic Control

Volume 64 (2019), Issue 3 (March)

Table of Contents

Papers

- Distributed Algorithms for Robust Convex Optimization via the Scenario Approach Keyou You, Roberto Tempo, Pei Xie, p. 880
- Automatic Generation of Optimal Reductions of Distributions Liyong Lin, Tomas Masopust, W. Murray Wonham, Rong Su, p. 896
- Relationship Between Granger Non-Causality and Network Graph of State-Space Representations Monika Jozsa, Mihaly Petreczky, M. Kanat Camlibel, p. 912
- Interacting Multiple Model Estimator for Networked Control Systems: Stability, Convergence, and Performance Hong Lin, James Lam, Michael Z. Q. Chen, Zhan Shu, Zheng-Guang Wu, p. 928
- A Dual to Lyapunov's Second Method for Linear Systems with Multiple Delays and Implementation using SOS Matthew M. Peet, p. 944
- K4SID: Large-Scale Subspace Identification with Kronecker modeling Baptiste Siquin, Michel Verhaegen, p. 960
- Fault Tolerant Control of Descriptor Systems with Disturbances Jovan Stefanovski, p. 976
- Potential Formulation for Charge or Current-Controlled Piezoelectric Smart Composites and Stabilization Results: Electrostatic vs. Quasi-Static vs. Fully-Dynamic Approaches Ahmet Ozkan Ozer, p. 989
- Controlled Markov Processes with Safety State Constraints Mahmoud El Chamie, Yue Yu, Behcet Acikmese, Masahiro Ono, p. 1003
- Push Sum with Transmission Failures Balázs Gerencsér, Julien M. Hendrickx, p. 1019
- Design of Symbolic Controllers for Networked Control Systems Alessandro Borri, Giordano Pola, M. Domenica Di Benedetto, p. 1034
- Secure Estimation and Zero-Error Secrecy Capacity Moritz Wiese, Tobias J. Oechtering, Karl H. Johansson, Panos Papadimitratos, Henrik Sandberg, Mikael Skoglund, p. 1047
- Distributed Optimization Under Adversarial Nodes Shreyas Sundaram, Bahman Gharesifard, p. 1063
- A Passivity-Based Approach to Nash Equilibrium Seeking over Networks Dian Gadjov, Lăcrășă Pavel, p. 1077
- Analysis of a Stochastic Switching Model of Freeway Traffic Incidents Li Jin, Saurabh Amin, p. 1093
- Design and Stability of Moving Horizon Estimator for Markov Jump Linear Systems Qing Sun, Cheng-Chew Lim, Peng Shi, Fei Liu, p. 1109
- Optimal Stabilization Control for Discrete-time Mean-field Stochastic Systems Huanshui Zhang, Qingyuan Qi, Minyue Fu, p. 1125
- On the Distance to Singular Descriptor Dynamical Systems with Impulsive Initial Conditions Ashish Kothari, Biswajit Das, Shreemayee Bora, Madhu N. Belur, p. 1137

Technical Notes and Correspondence

- Bounded Confidence Gossip Algorithms for Opinion Formation and Data Clustering Thi Hoai Linh Nguyen, Takayuki Wada, Izumi Masubuchi, Toru Asai, Yasumasa Fujisaki, p. 1150
- Leader-Following Output Consensus for High Order Nonlinear Multiagent Systems Chang-Chun Hua, Kuo Li, Xin-Ping Guan, p. 1156
- Detection of Sensor Attack and Resilient State Estimation for Uniformly Observable Nonlinear Systems having Redundant Sensors Junsoo Kim, Chanhwa Lee, Hyungbo Shim, Yongsoon Eun, Jin H. Seo, p. 1162
- Power Gain Bounds of MIMO Networked Control Systems: An Entropy Perspective Song Fang, Jie Chen, Hideaki Ishii, p. 1170
- Distributed Average Tracking of Physical Second-order Agents with Heterogeneous Unknown Nonlinear Dynamics Without Constraint on Input Signals Sheida Ghapani, Salar Rahili, Wei Ren, p. 1178
- Consensusability of Discrete-Time Multi-Agent Systems with Communication Delay and Packet Dropouts Jianying Zheng, Liang Xu, Lihua Xie, Keyou You, p. 1185
- On State Observers for Nonlinear Systems: A New Design and a Unifying Framework Bowen Yi, Romeo Ortega, Weidong Zhang, p. 1193
- Regional Analysis of Slope Restricted Lur'e Systems Giorgio Valmorbida, S. Ross Drummond, Stephen Duncan, p. 1201
- Global Stabilization of Lotka-Volterra Systems with Interval Uncertainty Vahid Badri, Mohammad Javad Yazdanpanah, Mohammad Saleh Tavazoei, p. 1209
- Structure Preserving Observer Design for Port-Hamiltonian Systems Abolfazl Yaghmaei, Mohammad Javad Yazdanpanah, p. 1214
- A Distributed Observer for a Class of Nonlinear Systems and Its Application to a Leader-Following Consensus Problem Tao Liu, Jie Huang, p. 1221
- Combining Prescribed Tracking Performance and Controller Simplicity for a class of Uncertain MIMO Nonlinear Systems with Input Quantization Lampros N. Bikas, George A. Rovithakis, p. 1228
- Containment Control for Multi-Agent Systems Under Two Intermittent Control Schemes Qiang Xiao, Frank L. Lewis, Zhigang Zeng, p. 1236
- Positive Edge-consensus for Nodal Networks via Output Feedback Housheng Su, Han Wu, James Lam, p. 1244
- Asynchronous Control of Continuous-Time Nonlinear Markov Jump Systems Subject to Strict Dissipativity Shanling Dong, Zheng-Guang Wu, Hongye Su, Peng Shi, Hamidreza Karimi, p. 1250
- Regional Stabilization for Discrete Time-Delay Systems with Actuator Saturations via A Delay-Dependent Polytopic Approach Yonggang Chen, Zidong Wang, Shumin Fei, Qing-Long Han, p. 1257
- Removing the Feasibility Conditions Imposed on Tracking Control Designs for State-Constrained Strict-feedback Systems Kai Zhao, Yongduan Song, p. 1265
- Event-triggered Control with Self-triggered Sampling for Discrete-time Uncertain Systems Masako Kishida, p. 1273
- Optimizing Leader Influence in Networks through Selection of Direct Followers Eyad H. Abed, Van Sy Mai, p. 1280
- Discrete-Time Selfish Routing Converging to the Wardrop Equilibrium Antonio Pietrabissa, Lorenzo Ricciardi Celsi, p. 1288
- An IOS Small-Gain Theorem for Large-Scale Hybrid Systems Adiya Bao, Tengfei Liu, Zhong-Ping Jiang, p. 1295

- A New Approach to Linear/Nonlinear Distributed Fusion Estimation Problem Bo Chen, Guoqiang Hu, Daniel W. C. Ho, Li Yu, p. 1301
- Distributed Projection Subgradient Algorithm over Time-Varying General Unbalanced Directed Graphs Huaqing Li, Qingguo Lu, Tingwen Huang, p. 1309
- Event-Triggered Cooperative Output Regulation of Linear Multi-Agent Systems under Jointly Connected Topologies Wenfeng Hu, Lu Liu, Gang Feng, p. 1317

[Back to the contents](#)

1.5. IEEE Control Systems Letters

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

Table of Contents

IEEE Control Systems Letters

Volume 3 (2019), Issue 2 (April)

Please note that IEEE Control Systems Letters is accessible in IEEE Xplore through the web page:

<http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=7782633>

Guest Editorial

- Editorial to the Special Issue of L-CSS on Control and Network Theory for Biological Systems, M. Arcak, F. Blanchini, and M. Vidyasagar - p. 228

Special Issue Papers

Guest Editors: M. Arcak, F. Blanchini, and M. Vidyasagar

Guest Associate Editors: S.-i. Azuma, G. Chesi, E. Franco, G. Giordano, M. Gomez, B. Ingalls

- Postprandial Glucose Regulation via KNN Meal Classification in Type 1 Diabetes, E. M. Aiello, C. Toffanin, M. Messori, C. Cobelli, and L. Magni - p. 230
- A Singular Singular Perturbation Problem Arising From a Class of Biomolecular Feedback Controllers, Y. Qian and D. Del Vecchio - p. 236
- Dynamic Density Estimation in Heterogeneous Cell Populations, A. Küper, R. Dürr, and S. Waldherr - p. 242
- Modeling Enzyme Controlled Metabolic Networks in Rapidly Changing Environments by Robust Optimization, H. Lindhorst, S. Lucia, R. Findeisen, and S. Waldherr - p. 248
- Evolutionary Dynamics of Two Communities Under Environmental Feedback, Y. Kawano, L. Gong, B. D. O. Anderson, and M. Cao - p. 254
- BDC-Decomposition for Global Influence Analysis, F. Blanchini and G. Giordano - p. 260
- Robustness Analysis of a Synthetic Translational Resource Allocation Controller, A. P. S. Darlington, J. Kim, and D. G. Bates - p. 266
- Input-Dependent Structural Identifiability of Nonlinear Systems, A. F. Villaverde, N. D. Evans, M. J. Chappell, and J. R. Banga - p. 272
- Analysis and Control of Genetic Toggle Switches Subject to Periodic Multi-Input Stimulation, D. Fiore, A. Guarino, and M. di Bernardo - p. 278

- A Linear Formulation of Asynchronous Boolean Networks, H. Das, A. Deshpande, and R. K. Layek - p. 284
- Bounding Transient Moments of Stochastic Chemical Reactions, Y. Sakurai and Y. Hori - p. 290
- Ensemble Controllability of Cellular Oscillators, K. Kuritz, S. Zeng, and F. Allgöwer - p. 296
- Analysis of a Minimal Gene Regulatory Network for Cell Differentiation, I. Zorzan, S. Del Favero, B. Di Camillo, and L. Schenato - p. 302
- Sharing Resources Can Lead to Monostability in a Network of Bistable Toggle Switches, A. Gyorgy - p. 308
- Control of Generalized Discrete-Time SIS Epidemics via Submodular Function Minimization, N. J. Watkins and G. J. Pappas - p. 314
- A Dynamic Neural Network Designed Using Analytical Methods Produces Dynamic Control Properties Similar to an Analogous Classical Controller, W. W. Hiltz, N. S. Szczecinski, R. D. Quinn, and A. J. Hunt - p. 320
- Improving Orthogonality in Two-Component Biological Signalling Systems Using Feedback Control, H. Steel, A. Sootla, B. Smart, N. Delalez, and A. Papachristodoulou - p. 326
- Identifying Disease Network Dysregulation Through Expression Mean, Variance, and Distribution Changes, K. R. Dean and F. J. Doyle, III - p. 332

Regular Issue Papers

- A New Design of Asynchronous Observer-Based Output-Feedback Control for Piecewise-Affine Systems, Y. Wei, X. Jing, W. X. Zheng, J. Qiu, and H. R. Karimi - p. 338
- Consensus of Multi-Agent Systems With Nonholonomic Restrictions via Lyapunov's Direct Method, M. Maghenem, A. Bautista, E. Nuño, A. Loria, and E. Panteley - p. 344
- Passivity-Based Bilateral Tele-Driving System With Parametric Uncertainty and Communication Delays, Y. Dong and N. Chopra - p. 350
- High-Gain Dead-Zone Observers for Linear and Nonlinear Plants, M. Cocetti, S. Tarbouriech, and L. Zaccarian - p. 356
- Stability Analysis for Switched Uncertain Nonlinear Systems With Dwell Time and Delay in the Active Mode Detection, L. Etienne, K. M. D. Motchon, and S. Lecoeuche - p. 362
- Scattering-Based Stabilization of Complex Interconnections of (Q,S,R)-Dissipative Systems With Time Delays, A. A. Usova, I. G. Polushin, and R. V. Patel - p. 368
- Bifurcation-Based Control Law for Pattern Generation, A. Parayil and A. Ratnoo - p. 374
- Differential Linear Matrix Inequalities Optimization, T. R. Gonçalves, G. W. Gabriel, and J. C. Geromel - p. 380
- Hybrid Zero Dynamics of Bipedal Robots Under Nonholonomic Virtual Constraints, J. C. Horn, A. Mohammadi, K. A. Hamed, and R. D. Gregg, IV - p. 386
- Nonlinear Observer on SO(3) for Attitude Estimation on Rotating Earth Using Single Vector Measurements, J. Reis, P. Batista, P. Oliveira, and C. Silvestre - p. 392
- Efficient Data-Driven Estimation of Passivity Properties, M. Tanemura and S.-i. Azuma - p. 398
- A Distributed Method for Linear Programming Problems With Box Constraints and Time-Varying Inequalities, M. Hosseinzadeh, E. Garone, and L. Schenato - p. 404
- A Class of L1-to-L1 and L Infinity-to-L Infinity Interval Observers for (Delayed) Markov Jump Linear Systems, C. Briat - p. 410

- Backstepping for Partially Unknown Nonlinear Systems Using Gaussian Processes, A. Capone and S. Hirche - p. 416
- Classical Formation Patterns and Flanking Strategies as a Result of Utility Maximization, E. Scukins and P. Ögren - p. 422
- Stabilization and Robustness Analysis for a Chain of Saturating Integrators With Imprecise Measurements, F. Mazenc, L. Burlion, and M. Malisoff - p. 428
- Consensus of Heterogeneous Multi-Agent Systems With Diffusive Couplings via Passivity Indices, M. Li, L. Su, and G. Chesi - p. 434
- “Weak” Control for Human-in-the-Loop Systems, M. Inoue and V. Gupta - p. 440
- Positive Definiteness in Linear Matrix Inequality Problem for H-Infinity Output Feedback Control Problem, H. Waki - p. 446
- Almost Every Single-Input LQR Optimal Control Problem Admits a PD Feedback Solution, C. Bhawal and D. Pal - p. 452
- On the Relation Between Detectability and Strict Dissipativity for Nonlinear Discrete Time Systems, M. Höger and L. Grüne - p. 458
- DeGroot-Friedkin Map in Opinion Dynamics Is Mirror Descent, A. Halder - p. 463
- A Simple Architecture for Arbitrary Interpolation of State Feedback, S. R. Friedrich and M. Buss - p. 469
- A New Continuous-Time Stability Perspective of Time-Delay Control: Introducing a State-Dependent UpperBound Structure, S. Roy, J. Lee, and S. Baldi - p. 475
- Distributed Consensus Control for a Network of Incommensurate Fractional-Order Systems, M. Shahvali, M.-B. Naghibi-Sistani, and H. Modares - p. 481

[Back to the contents](#)

1.6. IEEE CSS Awards

Contributed by: Tryphon T. Georgiou, tryphon@uci.edu

The IEEE Control Systems Society (CSS) presents several awards annually for technical achievements in the areas of interest to the society, as well as awards for service. General information and links are provided at <http://ieeecss.org/awards/awards-program>

Please note that this year the society instituted the following two new awards:

- 1) Roberto Tempo Best CDC paper award with Thomas Parisini (<http://ieeecss.org/contacts/thomas-parisini>) serving as the Selection Committee Chair,
- 2) IEEE CSL outstanding paper award with George Pappas (<http://ieeecss.org/contacts/george-j-pappas>) serving as the Selection Committee Chair.

See also:

<http://ieeecss.org/awards/ieee-control-systems-society-call-nominations-2019-awards>

Nominations and reference letters are due by May 15 and must be submitted using the CSS Awards Nomination system at css.paperplaza.net

[Back to the contents](#)

1.7. IEEE CSS Outreach Fund

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

The IEEE Control Systems Society (CSS) Outreach Fund provides grants for projects that will benefit CSS members and the controls community in general. Since its inception in 2011, the Fund has funded over 60 grants on behalf of a diverse group of CSS member-led activities.

The CSS Outreach Task Force is pleased to announce that the window for proposal submission for its 2019 spring solicitation will be held from May 1 to 24, 2019. Because of inherent delays in proposal evaluation and processing, any CSS members interested in pursuing an Outreach-funded project during 2020 need to apply during this solicitation. Information regarding the program, which includes proposal requirements and descriptions of current and past funded projects, can be found in:

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

Potential applicants are encouraged to watch a 10-minute video describing the CSS Outreach Fund that is available from IEEE.tv:

<https://ieeetv.ieee.org/conference-highlights/daniel-e-rivera-the-css-outreach-program-providing-community-service-studio-tech-talks-sections-congress-2017?>

Inquiries, notices of intent, and requests for application materials must be made directly to Daniel E. Rivera, Outreach Task Force Chair, at daniel.rivera@asu.edu.

[Back to the contents](#)

2 Miscellaneous

2.1. Online Seminars from University of South Florida

Contributed by: Tansel Yucelen, yucelen@usf.edu

Dear Robotics and Control Engineering Communities,
University of South Florida (USF) Forum on Robotics & Control Engineering is pleased to announce 3 upcoming online seminars (USF FoRCE, <http://force.eng.usf.edu/>):

#1

Cyber-physical Control Of Automated Transport Systems

Dr. Karl Henrik Johansson (KTH Royal Institute of Technology)

April 12, 2019, 12:00 PM Eastern Time

<https://force.my.webex.com/force.my/j.php?MTID=m05d7211adac6c526ffe680d50505645d> (WebEx Link)

#2

Distributed Optimization Over Networks With Application To Energy Systems

Dr. Maria Prandini (Politecnico di Milano)

May 3, 2019, 12:00 PM Eastern Time

<https://force.my.webex.com/force.my/j.php?MTID=m42fad459424a02161af415445c255470> (WebEx Link)

#3

Socio-technical Modeling, Control, And Optimization For Urban Mobility

Dr. Anuradha Annaswamy (MIT)

May 24, 2019, 12:00 PM Eastern Time

<https://force.my.webex.com/force.my/j.php?MTID=mb582ed65b29c40d9436f135ad09a27b2> (WebEx Link)

You can find abstracts of each online seminar as well as biographies of the speakers at the USF FoRCE website: <http://force.eng.usf.edu/>. In addition, you can participate live on these online seminars just by clicking to above WebEx links (at the time or 30 minutes before each online seminar). We hope that you will make plans to participate on these free online seminars.

The mission of the USF FoRCE is simple: Provide free, high-quality outreach events and online seminars to reach broader robotics and control engineering communities around the globe. To support our mission, we periodically invite distinguished lecturers to the USF FoRCE to give talks on recent research and/or education results related to robotics and control engineering. As a consequence, the USF FoRCE aims in connecting academicians and government/industry researchers/practitioners with each other through crosscutting basic and applied research and education discussions. We cordially hope that you will enjoy the USF FoRCE events and find them highly-valuable to your own research and education interests.

Visit <http://force.eng.usf.edu/> for more information and to access previously recorded events. For any questions, email the USF FoRCE director, Dr. Tansel Yucelen (yucelen@usf.edu).

Dr. Tansel Yucelen

Department of Mechanical Engineering; Assistant Professor

Lab. for Autonomy, Control, Information, and Systems; Director
Univ. of South Florida, Tampa, Florida 33620, United States of America
813-974-5656; lacis.eng.usf.edu (Research); force.eng.usf.edu (Education)
Tansel.Yucelen (Skype); twitter.com/TanselYucelen; youtube.com/c/tyucelen

[Back to the contents](#)

2.2. Testbed for Control of Flight Dynamics

Contributed by: Rogelio Robles, rogelio@eurekodynamics.com

The FFT GYRO system is a safe testbed that helps to understand, develop and implement control laws for flight dynamics of vertical take-off and landing vehicles without putting at risk the equipment. It can be connected to MATLAB/Simulink to accelerate the test and implementation of the algorithms. Thanks to the safe structure, the system can be installed in a classroom or a lab, where students can get a closer look and get a deep understanding of the vehicles dynamics and control.

The system is a platform with 3 DOF. A multi-rotor can be attached to a plate, which can hold different types and sizes and align the geometric center to the center of rotation of the FFT GYRO, letting the vehicle move about its real geometric center, and not eccentrically. The structure is designed to allow free rotation about the main axes. The gimbals are equipped with slip rings, so there is no limitation in the rotation of the parts and the connections. The system has three encoders and DC motors (optional). To measure the true roll, pitch and yaw angles of the drone, high-resolution magnetic absolute multi-turn encoders are used. And the DC motors can simulate external forces as disturbances, to perform validations of the robustness for the control laws. The gimbals are made of high-quality carbon fiber, to reduce the inertia that might be added to the system and maintain the properties of a rigid structure. Please visit this link to learn more <https://eurekodynamics.com/fft-gyro/>

[Back to the contents](#)

2.3. Call for Nominations: Roberto Tempo Best CDC Paper Award

Contributed by: Thomas Parisini, t.parisini@gmail.com

The IEEE Control Systems Society recently established the “Roberto Tempo Best CDC Paper Award” to recognise the best paper presented at the IEEE Conference on Decision and Control (CDC). Details about this award can be found visiting

<http://www.ieeecss.org/awards/roberto-tempo-best-cdc-paper-award>

Nominations are solicited. A nomination letter describing the excellence of the nominated paper should be submitted on the IEEE CSS Awards nomination system, css.paperplaza.net by May 15, 2019.

The first award will be presented in December 2019 during the Award Ceremony of the 2019 CDC for papers presented in the 2018 IEEE Conference on Decision and Control held in Miami, USA.

[Back to the contents](#)

2.4. Summer School: When Game Theory Meets Systems and Control

Contributed by: Martha Otte, m.w.otte@tudelft.nl

From June 17–20, 2019 the DISC Summer School “When Game Theory meets Systems and Control” will take place at NH Leeuwenhorst, Noordwijkerhout, The Netherlands.

This summer school aims to provide on the one hand an overview of types of different modeling approaches and tools which have been developed in game theory for various kind of coordination and allocation problems. On the other hand the aim is to show the ways in which, within different areas of control engineering, multi-actor problems are dealt with.

The class will be a mix of lectures and tutorials. The Summer School ends with a project on consensus and opinion dynamics. Students may hand in a report on this project for an informative assessment. The lectures will include examples of applications, demonstrations and hands on exercises, wherever possible. Participants will have ample opportunity to discuss their own research with the speakers and amongst each other.

Keynote lectures will be given by:

- Tamer Basar, University of Illinois, USA
- Fabio Fagnani, Politecnico di Torino, IT
- Herbert Hamers, Tilburg University, NL
- Ming Cao, University of Groningen, NL
- Dario Bauso, University of Groningen, NL

For more information please visit:

<http://disc.tudelft.nl/education/summer-school/disc-summer-school-2019/>

[Back to the contents](#)

3 Books

3.1. Mechatronic Components: Roadmap to Design

Contributed by: Sonnini Ruiz Yura, s.yura@elsevier.com

Mechatronic Components: Roadmap to Design by Faruk Kececi

ISBN: 9780128141267

November 2018; Butterworth-Heinemann

Paperback, 248 pages, \$140

<https://www.elsevier.com/books/mechatronic-components/kececi/978-0-12-814126-7>

Mechatronic Components: Roadmap to Design explains the practical application of mechatronics, including sections on adaptive structures, robotics and other areas where mechanics and electronics converge. Professional engineers in a variety of areas will find this textbook to be extremely helpful with its in-depth use of flow diagrams and schemes that help readers understand the logic behind the design of such systems. Using approximately 130 different components with diagrams and flowcharts that help engineers from different fields understand the general properties and selection criteria of a component, this book presents a comprehensive resource on mechatronic components.

Key Features

- Presents different concepts from the cross-disciplinary field of mechatronics, including discussions from mechanical engineering, electrical engineering and computer science
- Explains the decision-making process for components with visually appealing flow diagrams
- Provides detailed guidance on the selection of materials and components for building mechatronic systems
- Includes specific cases studies that illustrate applied concepts

Table of Contents

Chapter 1.Mechatronics: A Brief History
Chapter 2.Use of This Book: Roadmap to Design
Chapter 3.Calculation of Mechanical Properties
Chapter 4.Mechanical Failure Modes
Chapter 5.Materials Properties
Chapter 6.Manufacturing Processes
Chapter 7.Machine Elements
Chapter 8.Design and Analysis Programs
Chapter 9.Assembly Processes
Chapter 10.Electronic Components
Chapter 11.Actuators
Chapter 12.Sensors
Chapter 13.Signal Processing
Chapter 14.Controls Theory and Applications
Chapter 15.Design and Simulation Software
Chapter 16.Case Studies
Chapter 17.Index

[Back to the contents](#)

3.2. Robust and Fault-Tolerant Control

Contributed by: Laura Burgess, laura.burgess@springer.com

Robust and Fault-Tolerant Control by Krzysztof Patan

ISBN: 978-3-030-11868-6

April 2019, Springer

Hardcover, 209 pages, \$169.99/€145.59

<https://www.springer.com/gb/book/9783030118686>

Robust and Fault-Tolerant Control proposes novel automatic control strategies for nonlinear systems developed by means of artificial neural networks and pays special attention to robust and fault-tolerant approaches. The book discusses robustness and fault tolerance in the context of model predictive control, fault accommodation and reconfiguration, and iterative learning control strategies. Expanding on its theoretical deliberations the monograph includes many case studies demonstrating how the proposed approaches work in practice. The most important features of the book include:

- a comprehensive review of neural network architectures with possible applications in system modelling and control;
- a concise introduction to robust and fault-tolerant control;
- step-by-step presentation of the control approaches proposed;
- an abundance of case studies illustrating the important steps in designing robust and fault-tolerant control; and
- a large number of figures and tables facilitating the performance analysis of the control approaches described.

The material presented in this book will be useful for researchers and engineers who wish to avoid spending excessive time in searching neural-network-based control solutions. It is written for electrical, computer science and automatic control engineers interested in control theory and their applications. This monograph will also interest postgraduate students engaged in self-study of nonlinear robust and fault-tolerant control.

Contents

1. Introduction
2. Neural Networks
3. Robust and Fault-Tolerant Control
4. Model Predictive Control
5. Control Reconfiguration
6. Iterative Learning Control
7. Concluding Remarks and Further Research Directions

[Back to the contents](#)

4 Journals

4.1. Journal of Pure and Applied Mathematics

Contributed by: Gamar Mammadova, twms.aliev@gmail.com

TWMS Journal of Pure and Applied Mathematics

Vol. 10, No.1, 2019

ISSN 2076-2585

- A Survey for Paranormed Sequence Spaces Generated by Infinite Matrices F. Basar, M. Yesilkayagil
- Fuzzy Model and Algorithm for Solving of E-Shop Income Maximization F.A. Aliev, E.R. Shafizadeh, R.M. Aliev, N. Hajiev, U.M. Galandarova
- Measure Problem on Conjugation Logics M. Matvejchuk
- Higher Order Riesz Transforms Related to Schrödinger Type Operator on Local Generalized Morrey Spaces V.S. Guliyev, A. Akbulut, S. Celik, M.N. Omarova
- Fixed Point Results for Locally Hardy Rogers-Type Contractive Mappings for Dislocated Cone Metric Space T. Rasham, A. Shoaib, M. Arshad
- On Completeness of a Part of Eigen and Associated Vectors of a Quadratic Operator Pencil for a Double-Point Boundary Value Problem S.S. Mirzoyev, S.F. Babayeva
- Existence and Stability Results for Differential Equations with Complex Order Involving Hilfer Fractional Derivative S. Harikrishnan, K. Kanagarajan, E.M. Elsayed
- Hilfer and Hadamard Fractional Differential Equations in Fréchet Spaces S. Abbas, M. Benchohra, N. Hamidi, J.J. Nieto
- Numerical Approximation of Time Fractional Advection - Dispersion Model Arising from Solute Transport in Rivers A. Golbabai, O. Nikan, M. Molavi-Arabshahi
- A New Approach for Two-Dimensional Nonlinear Mixed Volterra-Fredholm Integral Equations and its Convergence Analysis N. Mahmoodi Darani, Kh. Maleknejad, H. Mesgarani

[Back to the contents](#)

4.2. Asian Journal of Control

Contributed by: Li-Chen Fu, lichen@ntu.edu.tw

Asian Journal of Control

Vol. 21, No. 2, March 2019

<https://onlinelibrary.wiley.com/toc/19346093/2019/21/2>

Content

Regular Papers

1. Paper Title: Linear Generalized Synchronization of Spatial Chaotic Systems (Pages: 649-659)
Authors: Quan Hai, Shutang Liu, Changquan Hu
2. Paper Title: NNs-Based Event-Triggered Consensus Control of a Class of Uncertain Nonlinear Multi-Agent Systems (Pages: 660-673)
Authors: Yang Yang, Dong Yue

3. Paper Title: Synchronization and Tracking Control for Dual-motor Driving Servo Systems with Friction Compensation (Pages: 674-685)
Authors: Wei Zhao, Xuemei Ren, Linwei Li
4. Paper Title: Simultaneous Achievement of Open and Closed Loop Diagonal Dominance Through Constant Feedback (Pages: 686-701)
Authors: Leopoldo Jetto, Valentina Orsini, Raffaele Romagnoli
5. Paper Title: Active Disturbance Rejection Control for Teleoperation Systems with Actuator Saturation (Pages: 702-713)
Authors: Ling Zhao, Lei Liu, Yingjie Wang, Hongjiu Yang
6. Paper Title: Dynamics and Noncollocated Model-Free Position Control for a Space Robot with Multi-Link Flexible Manipulators (Pages: 714-724)
Authors: Xinxin Yang, Shuzhi Sam Ge, Jinkun Liu
7. Paper Title: Existence of Optimal Mild Solutions and Controllability of Fractional Impulsive Stochastic Partial Integro-Differential Equations with Infinite Delay (Pages: 725-748)
Authors: Zuomao Yan, Xiumei Jia
8. Paper Title: Semi-Global Output Feedback Tracking to Reference System with Input for a Benchmark Nonlinear System (Pages: 749-758)
Authors: Shaomin He, Haibo Ji, Kaihong Yang
9. Paper Title: Eigenstructure Assignment for Linear Descriptor Systems Via Output Feedback (Pages: 759-769)
Author: Biao Zhang
10. Paper Title: Modeling of Maglev Yaw System of Wind Turbines and its Robust Trajectory Tracking Control in the Levitating and Landing Process Based on Ndob (Pages: 770-782)
Authors: Yang Li, Bin Cai, Xiaoyu Song, Xiaoguang Chu, Baili Su
11. Paper Title: Model Predictive Control for Constrained Image-Based Visual Servoing in Uncalibrated Environments (Pages: 783-799)
Authors: Zhoujingzi Qiu, Shiqiang Hu, Xinwu Liang
12. Paper Title: Optimal non-blocking decentralized supervisory control with unobservable controllable events (Pages: 800-808)
Authors: Vahid Saeidi, Ali A. Afzalian, Davood Gharavian
13. Paper Title: Linear-Quadratic Optimal Control Problems for Mean-Field Stochastic Differential Equations with Jumps (Pages: 809-823)
Authors: Maoning Tang, Qingxin Meng
14. Paper Title: Uncertain Method for Optimal Control Problems With Uncertainties Using Chebyshev Inclusion Functions (Pages: 824-831)
Authors: Navid Razmjoooy, Mehdi Ramezani
15. Paper Title: Synchronization and Tracking of Multi-Spacecraft Formation Attitude Control Using Adaptive Sliding Mode (Pages: 832-846)
Authors: Chengxi Zhang, Jihe Wang, Dexin Zhang, Xiaowei Shao
16. Paper Title: Active Vibration Control for a Flexible-Link Manipulator with Input Constraint Based on a Disturbance Observer (Pages: 847-855)
Authors: Hongjun Yang, Jinkun Liu
17. Paper Title: Robust Wind Speed Estimation and Control of Variable Speed Wind Turbines (Pages: 856-867)
Author: Oscar Barambones

18. Paper Title: Multi-Step Control Set-Based Nonlinear Model Predictive Control with Persistent Disturbances (Pages: 868-878)
Authors: Donglin Shi, Zhizhong Mao
19. Paper Title: Algebraic Conditions for Stability Analysis of Linear Time-Invariant Distributed Order Dynamic Systems: A Lagrange Inversion Theorem Approach (Pages: 879-890)
Authors: Hamed Taghavian, Mohammad Saleh Tavazoei
20. Paper Title: Data-Driven Performance Monitoring for Model Predictive Control Using a mahalanobis distance based overall index (Pages: 891-907)
Authors: Yanting Xu, Guangming Zhang, Ning Li, Jing Zhang, Shaoyuan Li, Lu Wang
21. Paper Title: Adaptive Chattering Free Neural Network Based Sliding Mode Control for Trajectory Tracking of Redundant Parallel Manipulators (Pages: 908-923)
Authors: Van-Truong Nguyen, Chyi-Yeu Lin, Shun-Feng Su, Quoc-Viet Tran
22. Paper Title: Predictive Consensus for Networked Multi-Agent Systems with Switching Topology and Variable Delay (Pages: 924-933)
Authors: Chang-Jiang Li, Guo-Ping Liu
23. Paper Title: State-Feedback Control for a Class of Timed Petri Nets Subject to Marking Constraints (Pages: 934-951)
Authors: Karima Tebani, Said Amari, Redouane Kara
24. Paper Title: Unknown Input Reduced-order Observer Design for One-Sided Lipschitz Nonlinear Descriptor Markovian Jump Systems (Pages: 952-964)
Authors: Jiaming Tian, Shuping Ma, Chenghui Zhang
25. Paper Title: A Constructive Globally Convergent Adaptive Speed Observer For Port-Hamiltonian Mechanical Systems with Non-Holonomic Constraints (Pages: 965-976)
Authors: Ammar Touati Brahim, Madjid Kidouche
26. Paper Title: A Partially Observed Nonzero-Sum Stochastic Differential Game with Delays and its Application to Finance (Pages: 977-988)
Authors: Bixuan Yang, Tiexin Guo, Jinbiao Wu

Brief Papers

1. Paper Title: Nonlinear and Adaptive Intelligent Control Techniques for Quadrotor UAV - A Survey (Pages: 989-1008)
Authors: Hongwei Mo, Ghulam Farid
2. Paper Title: Pinning Cluster Synchronization of Coupled Nonidentical Harmonic Oscillators Under Directed Topology (Pages: 1009-1016)
Authors: Liyun Zhao, Quanjun Wu, Rui Wang
3. Paper Title: Finite-Time H-Infinity Filtering for Nonlinear Continuous-Time Singular Semi-Markov Jump Systems (Pages: 1017-1027)
Authors: Jimin Wang, Shuping Ma, Chenghui Zhang
4. Paper Title: Introduction of Feedback Linearization to Robust LQR and LQI Control - Analysis of Results from an Unmanned Bicycle Robot with Reaction Wheel (Pages: 1028-1040)
Authors: Adam Owczarkowski, Dariusz Horla, Joanna Zietkiewicz

[Back to the contents](#)

4.3. International Journal of Control, Automation, and Systems

Contributed by: Keum-Shik Hong, journal@ijcas.com

Keum-Shik Hong, Editor-in-Chief

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

ISSN: 1598-6446

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

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

Table of contents

Vol. 17, No. 4, April 2019

- Guaranteed Cost Control of Networked Control Systems with DoS Attack and Time-varying Delay Yeping Shen, Wen-an Zhang, Hongjie Ni, Dan Zhang*, and Li Yu 811-821
- On-orbit Reconfiguration Using Adaptive Dynamic Programming for Multi-mission-constrained Spacecraft Attitude Control System Yue-Hua Cheng, Bin Jiang*, Huan Li, and Xiao-dong Han 822-835
- Event-triggered Finite-time Consensus with Fully Continuous Communication Free for Second-order Multi-agent Systems An Zhang, Ding Zhou*, Pan Yang, and Mi Yang 836-846
- Iterative LMI Approach to Robust State-feedback Control of Polynomial Systems with Bounded Actuators Tanagorn Jennawasin, Michihiro Kawanishi, Tatsuo Narikiyo, and David Banjerdpongchai* 847-856
- Practical Explicit Model Predictive Control for a Class of Noise-embedded Chaotic Hybrid Systems Seyyed Mostafa Tabatabaei, Sara Kamali, Mohammad Reza Jahed-Motlagh, and Mojtaba Barkhordari Yazdi* 857-866
- Tracking Error Constrained Super-twisting Dynamic Surface Control of Partially Known Nonlinear Systems with a Super-twisting Nonlinear Disturbance Observer Seong-Ik Han 867-879
- Enhanced Global Asymptotic Stabilization Criteria for Delayed Fractional Complex-valued Neural Networks with Parameter Uncertainty Xiaohong Wang, Zhen Wang*, Yingjie Fan, Jianwei Xia, and Hao Shen 880-895
- Event-based Distributed Filtering Approach to Nonlinear Stochastic Systems over Sensor Networks Zhongrui Hu*, Peng Shi, Ligang Wu, and Choon Ki Ahn 896-906
- Observer-based Controller Design for A T-S Fuzzy System with Unknown Premise Variables Wen-Bo Xie*, He Li, Zhen-Hua Wang, and Jian Zhang 907-915
- A Novel Stability Criterion of Time-varying delay Fractional-order Financial Systems Based a New Functional Transformation Lemma Zhe Zhang*, Jing Zhang, Fanyong Cheng, and Feng Liu 916-925
- Parameter Selection Procedure for an Amplitude- and Rate-saturated Controller Nehal Baiomy* and Ryo Kikuuwe 926-935
- Fractional Order IMC Controller Design for Two-input-two-output Fractional Order System Dazi Li*, Xingyu He, Tianheng Song, and Qibing Jin 936-947
- Locally Exponential Stability of Discrete-time Complex Networks with Impulsive Input Saturation Keyu Chen, Chuandong Li*, and Liangliang Li 948-956
- Interval Observer-based Output Feedback Control for a Class of Interconnected Systems with Uncertain Interconnections Zhi-Hui Zhang, Shujiang Li*, and Hua Yan 957-965

- Exponential Stability of Neural Networks with Markovian Switching Parameters and General Noise Xin Zhang, Wuneng Zhou*, and Yuqing Sun 966-975
- Robust Tracking of Robot Manipulators via Momentum-based Disturbance Observer and Passivity-based Controller Juhoon Back and Wonseok Ha* 976-985
- A 7-DoF Upper Limb Exoskeleton Robot Control Using a New Robust Hybrid Controller Mehran Rahmani*, Mohammad Habib Rahman, and Jawhar Ghommam 986-994
- Shadow Space Modeling and Task Planning for Collision-free Cooperation of Dual Manipulators for Planar Task Hyun Joong Yoon, Seong Youb Chung, and Myun Joong Hwang* 995-1006
- Multi-layer Feed-forward Neural Network Deep Learning Control with Hybrid Position and Virtual-force Algorithm for Mobile Robot Obstacle Avoidance Wei Zheng*, Hong-Bin Wang, Zhi-Ming Zhang, Ning Li, and Peng-Heng Yin 1007-1018
- Integrated Fault Tolerant Control for Saturated Systems with Additive Faults: A Comparative Study of Saturation Models Mojtaba Hashemi, Ali Kamali Egoli*, and Mahyar Naraghi 1019-1030
- Autonomous Task Allocation in a Swarm of Foraging Robots: An Approach Based on Response Threshold Sigmoid Model Bao Pang, Yong Song*, Chengjin Zhang, Hongling Wang, and Runtao Yang 1031-1040
- Finite-time Asymmetric Bipartite Consensus for Signed Networks of Dynamic Agents Xing Guo, Jinling Liang*, and Jianquan Lu 1041-1049
- Implementation of a Fault Diagnosis System Using Neural Networks for Solar Panel Hye-Rin Hwang, Berm-Soo Kim, Tae-Hyun Cho, and In-Soo Lee* 1050-1058
- Active Queue Management Algorithm for TCP Networks with Integral Backstepping and Minimax Zhan-Hua Li*, Yang Liu, and Yuan-Wei Jing 1059-1066
- Optimization and Convexity of $\log \det(I+KX^{-1})$ Kwang-Ki K. Kim 1067-1070

[Back to the contents](#)

4.4. Systems and Control Letters

Contributed by: Lusia Veksler, lveksler@ucsd.edu

Volume 125, March 2019

- Geometric spatial reduction for port-Hamiltonian systems, Ngoc Minh Trang Vu, Laurent Lefèvre, Bernhard Maschke, Pages 1-8
- Large deviation principle for dynamical systems coupled with diffusion-transmutation processes, Getachew K. Befekad, Pages 9-15
- Nyquist plots under frequency transformations, Arturo Buscarino, Luigi Fortuna, Mattia Frasca, Pages 16-21
- A discrete-time pursuit-evasion game in convex polygonal environments, Marco Casini, Matteo Criscoli, Andrea Garulli, Pages 22-28
- Identification of water depth and velocity potential for water waves, Yang Yu, Hai-Long Pei, Cheng-Zhong Xu, Pages 29-36
- A neuroadaptive architecture for model reference control of uncertain dynamical systems with performance guarantees, Ehsan Arabi, Tansel Yucelen, Benjamin C. Gruenwald, Mario Fravolini, Nhan T. Nguyen, Pages 37-44
- Output synchronization of nonlinear heterogeneous multi-agent systems with switching networks, Gulam Dastagir Khan, Zhiyong Chen, Haofei Meng, Pages 45-50

- Second-order consensus of hybrid multi-agent systems, Yuanshi Zheng, Qi Zhao, Jingying Ma, Long Wang, Pages 51-58
- Non-equilibrium dynamic games and cyber-physical security: A cognitive hierarchy approach, Aris Kanellopoulos, Kyriakos G. Vamvoudakis, Pages 59-66
- Mean-semivariance optimality for continuous-time Markov decision processes, Qingda Wei, Pages 67-74

[Back to the contents](#)

4.5. IET Control Theory & Applications

Contributed by: Alexandria Lipka, alipka@theiet.org

IET Control Theory & Applications

Volume 13

March 2019

<http://digital-library.theiet.org/content/journals/iet-cta/13/5>

- Sahar Yazdani, Mohammad Haeri, Housheng Su, Sampled-data leader–follower algorithm for flocking of multi-agent systems, Pages 609 –619
- Yang Li, Hongbin Zhang, Weiming Xiang, New alternative convex conditions on exponential stability and stabilisation of switched positive linear systems with dwell time, Pages 620 –631
- Montadher Sami Shaker, Hybrid approach to design Takagi–Sugeno observer-based FTC for non-linear systems affected by simultaneous time varying actuator and sensor faults, Pages 632 –641
- Qinyao Liu, Feng Ding, Ling Xu, Erfu Yang, Partially coupled gradient estimation algorithm for multi-variable equation-error autoregressive moving average systems using the data filtering technique, Pages 642 –650
- He Defeng, Qiu Tianxiang, Lu Liangye, Input-to-state stability of contractive EMPC of non-linear systems with bounded disturbances, Pages 651 –658
- Ester Sales-Setién and Ignacio Peñarrocha-Alós, Trade-offs on fault estimation via proportional multiple-integral and multiple-resonant observers for discrete-time systems, Pages 659 –671
- Xinjun Wang, Qinghui Wu, Hongjie Wang, Xinghui Yin, Adaptive neural tracking control for a class of non-lower triangular non-linear systems with dead zone and unmodelled dynamics, Pages 672 –682
- Haoran Tan, Zhiwu Huang, Min Wu, Data-based predictive control for networked non-linear multi-agent systems consensus tracking via cloud computing, Pages 683 –692
- Jung-Min Yang and Seong Woo Kwak, Corrective control of parallel interconnected asynchronous sequential machines with output feedback, Pages 693 –701
- Zhengtian Wu, Baoping Jiang, Yonggui Kao, Finite-time H-Infinity filtering for Ito stochastic Markovian jump systems with distributed time-varying delays based on optimisation algorithm, Pages 702 –710
- Xiujian Lu and Sen Kuang, Coherent H-Infinity control for linear quantum passive systems with model uncertainties, Pages 711 –720
- Hongqiang Liu, Zhongliang Zhou, Haiyan Yang, Method for joint estimation for states and parameters concerning non-linear systems with time-correlated measurement noise, Pages 721 –731

[Back to the contents](#)

4.6. International Journal of Applied Mathematics and Computer Science

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

International Journal of Applied Mathematics and Computer Science (AMCS)

2019, Volume 29, Number 1 (March)

Special section on "Exploring Complex and Big Data" (Johann Gamper and Robert Wrembel, Eds.)

www.amcs.uz.zgora.pl

Content: Special Selection

- Meghini C., Bartalesi V., Metilli D. and Benedetti F. Introducing narratives in Europeana: A case study 7
- Güzel Kalaycı E., Brandt S., Calvanese D., Ryzhikov V., Xiao G. and Zakharyashev M. Ontology-based access to temporal data with Ontop: A framework proposal 17
- Mahlknecht G., Dignös A. and Kozmina N. Modeling and querying facts with period timestamps in data warehouses 31
- Haq A., Wilk S. and Abelló A. Fusion of clinical data: A case study to predict the type of treatment of bone fractures 51
- Ali S.M.F., Mey J. and Thiele M. Parallelizing user-defined functions in the ETL workflow using orchestration style sheets 69
- Datta A., Kaur A., Lauer T. and Chabbouh S. Exploiting multi-core and many-core parallelism for subspace clustering 81

Content: Regular Selection

- Kaczorek T. Absolute stability of a class of fractional positive nonlinear systems 93
- Cayero J., Rotondo D., Morcego B. and Puig V. Optimal state observation using quadratic boundedness: Application to UAV disturbance estimation 99
- Li S., Zhang Y., Wang Y. and Sun W. Utility optimization-based bandwidth allocation for elastic and inelastic services in peer-to-peer networks 111
- Trokicić A. and Todorović B. Constrained spectral clustering via multi-layer graph embeddings on a Grassmann manifold 125
- Sawerwain M. and Wróblewski M. Recommendation systems with the quantum k-NN and Grover algorithms for data processing 139
- Blachnik M. Ensembles of instance selection methods: A comparative study 151
- Papież A., Badie C. and Polanska J. Machine learning techniques combined with dose profiles indicate radiation response biomarkers 169
- Djennoune S., Bettayeb M. and Al-Saggaf U.M. Synchronization of fractional-order discrete-time chaotic systems by an exact delayed state reconstructor: Application to secure communication 179
- Domino K. and Gawron P. An algorithm for arbitrary-order cumulant tensor calculation in a sliding window of data streams 195

Publisher: University of Zielona Góra, Poland

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

Frequency: Quarterly

Editor-in-Chief: Józef Korbicz

Website: www.amcs.uz.zgora.pl

E-mail: amcs@uz.zgora.pl

Scope: modern control theory and practice; artificial intelligence methods and their applications; applied

mathematics and mathematical optimisation techniques; mathematical methods in engineering, computer science, and biology Indexation: ACM Digital Library, Applied Mechanics Reviews, Current Mathematical Publications (AMS), DBLP Computer Science Bibliography, EBSCO, Elsevier, Google Scholar, Inspec, Mathematical Reviews (MathSciNet), ProQuest, Clarivate Analytics (formerly Thomson Reuters), Zentralblatt Math, and others.

Impact Factor: 1.694(2017) / 5-Year IF: 1.712 (2017)

[Back to the contents](#)

4.7. CFP: International Journal of Control, Automation, and Systems

Contributed by: Keum-Shik Hong, journal@ijcas.com

Call for Papers: International Journal of Control, Automation, and Systems (IJCAS)
Special Issue on Marine Robotics and Control Systems

Publication: January 2020 * Submission Deadline: June 30, 2019

Marine Robotics is a rapidly growing field. International Journal of Control, Automation, and Systems (IJCAS) is pleased to announce an upcoming Special Issue on Marine Robotics and Control Systems. There are many human activities in marine fields such as transportation, construction of underwater structures, and resource investigation. Marine environments are severe and risky for human working, and have many uncertainties. Recently, several marine robots and vehicles have automated many risky tasks being manually done in underwater or on the surface. This special issue focuses on applications of marine robots and control systems. The leading researchers in the related areas are strongly encouraged to submit their contributions to share the cutting edge technology and novel ideas with other researchers and engineers. The special issue publishes original papers of novel theory, methodology, algorithm, improvements and results relevant to the field of marine robotics and control. The priorities will be given to papers including original works which are supported by experimental results, especially in sea-trial with careful modeling. They can significantly contribute to academia as well as industry and bring out prospective applications.

Topics of this special issue will include, but are not limited to:

- Unmanned Underwater Vehicle (UUV), Autonomous Underwater Vehicle (AUV), Remotely Operated Vehicle (ROV)
- Unmanned Surface Vehicle (USV), Autonomous Surface vehicle (ASV), Unmanned Ship
- Intelligence and Autonomy for Marine Robots and Vehicles
- Control and Modeling for Marine Robots and Vehicles
- Underwater Sensing, Multi-Modal Sensor Fusion, and Manipulation for Marine Robot
- Vehicle Guidance, Navigation, Path Planning, Fault Diagnosis and Fault Tolerance in Marine Robots
- Perception, Cognition in Marine Robots

All manuscripts will go through regular review processes of the journal.

Manuscript Preparation and Submission:

Please follow the guidelines appearing in Information for Authors from the website, <http://www.ijcas.com/>.
Submit your manuscript in electronic form through the Manuscript Central web site, <http://ijcas.edmgr.com/>.

Upon the popup menu in page #1 asking “manuscript type”, please select “Special Issue on Marine Robotics and Control Systems.”

Important Dates

Submission of Manuscripts June 30, 2019

Notification of Acceptance September 30, 2019

Submission of Final Papers October 31, 2019

Publication January, 2020

Guest Editors

Son-Cheol Yu

Professor at Pohang University of Science and Technology (POSTECH), Republic of Korea

e-mail: sncyu@postech.ac.kr

Antonio M. Pascoal

Professor at University of Lisbon, Portugal

e-mail: antonio@isr.tecnico.ulisboa.pt

Jinwhan Kim

Professor at Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea

e-mail: jinwhan@kaist.ac.kr

[Back to the contents](#)

4.8. CFP: Frontiers in Neurorobotics

Contributed by: Yongping Pan, yongppan@gmail.com

CFP: Frontiers in Neurorobotics - Special Issue on Robots with Intrinsic Compliance

We are currently organizing a Special Issue “Bioinspired Design and Control of Robots with Intrinsic Compliance” in the Frontiers in Neurorobotics (SCI, JCR Q2, IF=2.606). The deadline for the first submission 31 March 2019 will be extended for one month. We welcome your contributions! For more details, please refer to the following link:

<https://www.frontiersin.org/research-topics/8667/bioinspired-design-and-control-of-robots-with-intrinsic-compliance>

For inquiries, please contact the Lead Guest Editor Dr Pan by yongppan@gmail.com.

Thank you very much for the kind attention!

[Back to the contents](#)

5 Conferences and Workshops

5.1. International Workshop on Numerical Software Verification, USA

Contributed by: Mohammad Al Khatib, mohammad.al-khatib@tum.de

Call for Submissions

The 12th International Workshop on Numerical Software Verification co-located with CAV, 13-14 July 2019, New York, NY, USA

Important Dates:

Submission deadline: 24 April 2019

Notification of acceptance: 22 May 2019

Final version: 29 May 2019

Scope:

Numerical computations are ubiquitous in digital systems: supervision, prediction, simulation and signal processing rely heavily on numerical calculus to achieve desired goals. Design and verification of numerical algorithms has a unique set of challenges, which set it apart from rest of software verification. To achieve the verification and validation of global properties, numerical techniques need to precisely represent local behaviors of each component. The implementation of numerical techniques on modern hardware adds another layer of approximation because of the use of finite representations of infinite precision numbers that usually lack basic arithmetic properties such as commutativity and associativity. Finally, the development and analysis of cyber-physical systems (CPS) which involve the interacting continuous and discrete components pose a further challenge. It is hence imperative to develop logical and mathematical techniques for the reasoning about programmability and reliability. The NSV workshop is dedicated to the development of such techniques.

Website:

For submission instructions and further information please visit the conference's website <http://nsv19.mpi-sws.org/>

Organizers and Chairs:

Majid Zamani (University of Colorado Boulder, USA)

Damien Zufferey (MPI-SWS, Germany)

[Back to the contents](#)

5.2. IEEE Connected and Automated Vehicles Symposium, USA

Contributed by: Panagiotis Tsiotras, tsiotras@gatech.edu

2nd IEEE Connected and Automated Vehicles Symposium (IEEE CAVS 2019)

22-23 September 2019, Honolulu, Hawaii, USA

<http://ieee-cavs.org/>

Full paper submission: April 15, 2018

With the advances in computing and communication technologies, vehicle technology has entered a new era of connected and automated vehicles (CAVs). The host of technologies that are required to enable CAVs are many and span several engineering and science disciplines. This symposium aims to bring together researchers who are working on different aspects of CAVs. IEEE CAVS is a symposium for reporting advances in all aspects of CAVs, including theory, tools, protocols, networks, applications, systems, test-beds and field deployments. IEEE CAVS 2019 will be held on 22-23 September 2019 in Honolulu, Hawaii, co-located with IEEE VTC-2019 Fall (September 22-25, 2019, <http://www.ieeevtc.org/vtc2019fall/>). Standalone and combined registrations packages will be offered for IEEE CAVS and IEEE VTC2019-Fall events. Areas of interest include (but are not limited to) the following:

- Autonomous driving
- Motion Planning, Decision-Making, and Controls for CAVs
- Vehicular networks. V2V, V2I and V2X communications
- ADAS technologies, systems and applications
- Artificial Intelligence and Machine Learning for CAVs
- 5G for connected and automated vehicles
- In-vehicle communications
- Sensing, detection, and actuation
- Formal Methods and Model Checking in Autonomous Driving
- Multi-CAV Coordination
- Multi-sensor fusion
- Mapping and localization
- Vision and environment perception
- In-car electronics and embedded software, OS and systems
- Networked automotive cyber-physical systems
- Automotive IoT
- Vehicular and transportation data analytics
- Automotive cybersecurity, liability and privacy
- Smart and shared mobility systems and applications
- Coexistence of CAVs, automated, connected and conventional/legacy vehicles
- Connected and automated vehicle safety applications
- Cooperative driving and cooperative perception/sensing
- Impact of CAVs on transport safety, traffic management, characterization and prediction
- Computer aided modeling, simulation, verification
- Field trials
- Standards development, business models, policies
- Human factors, human machine interfaces and Human-Vehicle Interaction
- Emotion detection in self-driving vehicles
- CAVs and vulnerable road users

Prospective authors are invited to submit 5-page, original, and unpublished full papers. Manuscripts should be formatted according to IEEE two-column conference style, including figures and references. You can find the template at the CFP section in <http://iee-cavs.org/> Manuscripts should be submitted through Trackchair: <https://vtc2019f-rr-wks.trackchair.com/track/1764>

All submissions will undergo peer-review by subject matter experts, and the full paper version of accepted submissions will be published in the conference proceedings and submitted to IEEE Xplore (conditional on in-person presentation at the conference). Standalone and combined registrations packages will be offered for IEEE CAVS and IEEE VTC2019-Fall events.

General Co-Chairs

Javier Gozalvez, Universidad Miguel Hernandez de Elche, Spain

Yaser P. Fallah, University of Central Florida, USA

Cem Seraydar, General Motors, USA

[Back to the contents](#)

5.3. Allerton Conference on Communication, Control, and Computing, USA

Contributed by: Peggy Wells, pwells@illinois.edu

57th Allerton Conference on Communication, Control, and Computing

September 24-27, 2019

Conference Co-Chairs: Daniel Liberzon and Alejandro Dominguez-Garcia

Call for Papers:

Submission Deadline: July 8, 2018

Manuscripts can be submitted from June 15-July 8, 2019 with the submission deadline of July 8th being firm. Please follow the instructions at allerton.csl.illinois.edu.

Important Dates:

July 9: Submission Deadline

August 2: Acceptance Date Authors will be notified of acceptance via email by August 6, 2018, at which time they will also be sent detailed instructions for the preparation of their papers for the Conference Proceedings.

After August 6: Registration Opens

September 24-27: Conference Dates

September 24: Opening Tutorial Lectures at the Coordinated Science Lab, University of Illinois at Urbana-Champaign

September 25-27: Conference Sessions at the University of Illinois Allerton Park & Retreat Center.

September 26: Plenary Speaker

September 29: Final Paper Deadline Final versions of papers that are presented at the conference must be submitted electronically in order to appear in the Conference Proceedings and IEEE Xplore.

The Allerton House is located 26 miles southwest of the Urbana-Champaign campus of the University of Illinois in a wooded area on the Sangamon River. It is part of the 1,500 acre Robert Allerton Park, a complex of natural and man-made beauty designated as a National natural landmark. Allerton Park has 20 miles of well-maintained trails and a living gallery of formal gardens, studded with sculptures collected from around the world.

[Back to the contents](#)

5.4. International Conference on System Theory, Control and Computing, Romania

Contributed by: Radu-Emil Precup, radu.precup@aut.upt.ro

23rd International Conference on System Theory, Control and Computing - ICSTCC 2019

October 9-11, 2019, Sinaia, Romania

Website: <http://icstcc2019.cs.upt.ro/>

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

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

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

Confirmed keynote speakers:

Maria Elena Valcher (University of Padova, Italy)

Marios M. Polycarpou (University of Cyprus, Cyprus)

Marcin Paprzycki (Polish Academy of Sciences, Poland)

Gianluca Tempesti (University of York, UK)

Important dates:

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

The main areas of interest are: Automation and Robotics; Computer Science and Engineering; Electronics and Instrumentation. All papers should be submitted via the online submission system at <http://controls.papercpt.net/conferences/scripts/start.pl#STCC19>

For further information please contact the organizing committee at: icstcc2019@cs.upt.ro.

[Back to the contents](#)

5.5. International Conference on Systems and Control, Morocco

Contributed by: Driss Mehdi, driss.mehdi@univ-poitiers.fr

The 8th International Conference on Systems and Control (ICSC 2019)

The 8th edition of the International Conference on Systems and Control will be held on October 23-25, 2019,

at the University of CADDI AYYAD, Marrakech, Morocco. This edition is technically co-sponsored by IEEE CSS.

Paper submission: Papers must be submitted electronically via the Web upload system only. The guidelines are given at the ICSC'19 Web site. The authors are invited to submit the full version of their manuscripts online through the online paper submission

<https://controls.papercept.net/conferences/scripts/start.pl>

Important Dates:

Contributed papers, invited session papers: April 30, 2019

Notification of Acceptance / Rejection: June 30, 2019

Final, Camera ready papers due: July 30, 2019

Conference opening: October 23, 2019

Websites:

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

Program Chairs

Fouad Mesquine, Morocco

Fernando Tadeo, Spain

General Chairs:

Abdellah Benzaouia, Morocco

Mohamed Msaad, France

For more information please feel free to contact Prof. Driss Mehdi (driss.mehdi@univ-poitiers.fr).

[Back to the contents](#)

5.6. Indian Control Conference, India

Contributed by: Mathukumalli Vidyasagar, m.vidyasagar@iith.ac.in

The Sixth Indian Control Conference will be held at the Indian Institute of Technology Hyderabad during December 18-20, 2019, a week after the CDC in Nice, France. There will be four plenary speakers, namely:

Stephen P. Boyd, Stanford

Yonina Eldar, Technion

Rajeeva L. Karandikar, Chennai Mathematical Institute

Kristin Pettersen, Norwegian University of Science and Technology

The paper submission deadline is June 05, 2019. More details can be found at the conference web site: icc.org.in. For any queries please contact the General Chair: M.Vidyasagar@iith.ac.in.

[Back to the contents](#)

5.7. Midwest Workshop on Control and Game Theory, USA

Contributed by: fang@ku.edu, fang@ku.edu

The Organizing Committee cordially invites you to participate in the 8th Midwest Workshop on Control and Game Theory (MWCGT, <https://mwcgt2019.wustl.edu>), which will be held Saturday through Sunday, April 27-28, 2019, at Washington University in St. Louis, MO, USA. Dedicated to advancing the theory and practice of control and game theory, this workshop will gather researchers, students and practitioners to share new research results, innovative control and decision-making applications, perspectives of new trends, and insights into future research frontiers. It will include single-track talks from an exciting multi-disciplinary cohort of speakers. It will also offer an interactive poster session for graduate students and postdoctoral researchers to showcase their up-to-date research.

Website:

- <https://mwcgt2019.wustl.edu>

Important Dates:

- Poster abstract submission deadline: Friday, April 12, 2019

- Workshop: April 27-28, 2019

Workshop Chairs:

- Jr-Shin Li (WashU)

- Shen Zeng (WashU)

Organizing Committee:

- ShiNung Ching (WashU)

- Bruno Sinopoli (WashU)

- Tamer Basar (UIUC)

- Ali Belabbas (UIUC)

- Huazhen Fang (KU)

You are welcome to address inquiries about the workshop to Dr. Shen Zeng at s.zeng@wustl.edu or Dr. Jr-Shin Li at jsli@wustl.edu.

[Back to the contents](#)

5.8. International Conference on Methods & Models in Automation, Poland

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

24th International Conference on Methods and Models in Automation and Robotics

26-29 August 2019, Amber Baltic Hotel, Miedzyzdroje, Poland.

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

The Conference will be a good opportunity for highlighting the new results and directions of Automatic

Control theory, technology and applications. As such, it mainly will concentrate on the following key points:

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

The participants of the 24th International MMAR Conference will have the opportunity to take part in the wide spectrum of categories for technical presentations, including plenary lectures, regular papers of both lecture and poster session types, and panel discussion. We look forward to seeing our old and new friends in Poland. You are kindly invited to participate in the 24th International MMAR Conference in Miedzyzdroje, Poland. The proceedings of the conference will be submitted for review and approval for inclusion in the IEEE Xplore Digital Library and will be submitted for inclusion in the Conference Proceedings Citation Index - Science (ISI Web of Science).

Key Dates

- April 8, 2019: Paper submission
- May 20, 2019: Notification of acceptance
- June 24, 2019: Registration
- June 24, 2019: Camera-ready paper submission

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

[Back to the contents](#)

5.9. International Conference on Control, Automation and Systems, South Korea

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

2019 19th International Conference on Control, Automation and Systems (ICCAS 2019) October 15-18, 2019
ICC Jeju, Korea
<http://2019.iccas.org>

Call for Papers: http://icross.org/data/download/ICCAS2019/ICCAS2019_CFP.pdf The aim of the ICCAS is to bring together researchers and engineers worldwide to present their latest works, and disseminate the state-of-the-art technologies related to control, automation, robotics, and systems.

Important Dates:

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

Paper Submission:

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

Indexed in: IEEE Xplore, EI compendex, and SCOPUS

Plenary Speakers:

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

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

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

[Back to the contents](#)

5.10. Learning for Dynamics and Control Conference, USA

Contributed by: George Pappas, pappasg@seas.upenn.edu

New conference on Learning for Dynamics and Control (l4dc.org)
Massachusetts Institute of Technology, May 30-31, 2019

Over the past few years, machine learning has had tremendous impact in numerous applications such as computer vision and language translation. Over the next decade, the biggest generator of data is expected to be devices which sense and control the physical world. The explosion of data that is emerging from the physical world requires a rapprochement of areas such as machine learning, control theory, and optimization and related areas.

In order to achieve this, we are launching a new conference on Learning for Dynamics and Control (L4DC) which will take place on May 30-31, 2019 at MIT. The goal is to bring together researchers interested in learning for dynamics and control and to create a new community that thinks rigorously across the disciplines and poses new, broad reaching challenges. We feel this could be a very influential event that can bring these distinct communities together.

During this first inaugural conference, the technical program will be assembled by invitation only, while in the future the program will consist of contributed papers and posters. We have an exciting list of invited speakers across many disciplines on the interface between learning, dynamics, and control.

Confirmed Invited Speakers:

Anima Anandkumar California Institute of Technology
Francesco Borrelli UC Berkeley
Emma Brunskill Stanford University
Anca Dragan UC Berkeley

Maryam Fazel University of Washington
Sham Kakade University of Washington
Zico Kolter CMU
Andreas Krause ETH Zurich
Sergey Levine UC Berkeley
Manfred Morari University of Pennsylvania
Dorsa Sadigh Stanford University
Angela Schoellig University of Toronto
Stefano Soatto UCLA
Russ Tedrake MIT
Emo Todorov University of Washington
John Tsitsiklis MIT
Rene Vidal John Hopkins University
Cathy Wu MIT

Poster Sessions:

In addition to the invited speakers, the technical program will contain two invited poster sessions from a broad spectrum of researchers.

Conference Registration:

We invite the community to register and attend this inaugural event. Registration details are available at the conference website: <https://l4dc.mit.edu/registration/> Given the demand for this research topic, we encourage you to register early.

Conference Sponsors:

National Science Foundation
Office of Naval Research
Army Research Office
Air Force Office of Scientific Research

Conference Organizers:

Ali Jadbabaie, MIT
George J. Pappas, University of Pennsylvania
Pablo Parrilo, MIT
Ben Recht, UC Berkeley
Melanie Zellinger, ETH Zurich

[Back to the contents](#)

5.11. International Conference of Intelligent Unmanned System, China

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

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

On behalf of the ISAS 2019 Organizing Committee, this is to invite you to submit your contributions to The 15th International Conference of Intelligent Unmanned System (ICIUS 2019), to be held on August 27-29,

in the Techart Plaza which is situated in a famous location in the heart of Beijing.

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

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

Invited Sessions:

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

Organized Sessions:

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

Important Dates:

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

Steering Committee:

Muljowidodo, Institute of Technology Bandung

Kenzo Nonami, Chiba University

Kwang-Joon Yoon, Konkuk Univ.

Hoon Cheol Park, Konkuk Univ.

General Chairs:

Wei He, Univ. Sci. and Tech. Beijing

Lung-Jieh Yang, Tamkang Univ.

Program Chair:

Youmin Zhang, Concordia

Bin Jiang, Nanjing Univ. of Aeronautics and Astronautics

Contact:

Xinxing Mu

Email: muxinxing@gmail.com

[Back to the contents](#)

6 Positions

6.1. PhD: George Washington University, USA

Contributed by: Taeyoung Lee, tylee@gwu.edu

Flight dynamics and control lab (<http://fdcl.seas.gwu.edu/>) at the George Washington University, Washington DC is looking for new doctoral students. There are two open positions for the following projects.

1. Aerial Mapping and Situation Awareness

This project aims to develop aerial robotic systems to monitor a complex urban environments, to create a real time map, and to share it with other autonomous vehicles. Backgrounds in the following topics are desired.

- a. SLAM
- b. ROS
- c. Machine learning
- d. Image processing

This position will be funded by NSF.

2. Dynamics and Control of Flapping Wing Unmanned Aerial Vehicle

This project aims to uncover the biomechanics of Monarch butterflies exhibiting the longest flight range among insects, and to utilize it to develop bio-inspired control schemes for long-range flapping-wing micro aerial vehicles. Backgrounds in the following topics are desired.

- a. Nonlinear dynamics
- b. Nonlinear control theory
- c. Aerodynamics
- d. Geometric mechanics

For every position, it is expected that the candidates have expertise in structured programming.

To apply, or to request more information, please contact Prof. Taeyoung Lee at tylee@gwu.edu. The application should include CV, a list of publications, and a list of reference, and it should be submitted as a single PDF file.

[Back to the contents](#)

6.2. PhD: Norwegian University of Science and Technology, Norway

Contributed by: Anders Lyngvi Fougner, Anders.Fougner@ntnu.no

The Department of Engineering Cybernetics at the Norwegian University of Science and Technology (NTNU) in Trondheim, Norway, currently has a vacant PhD position within Meal Detection by Analysis of Bowel Sounds. Applications are to be submitted through JobbNorge and the deadline is 1 May 2019:

<https://www.jobbnorge.no/en/available-jobs/job/167010/>

This PhD project aims to analyse recorded sounds from the upper body (mostly targeted at the intestines and bowel) in order to detect meals in patients with diabetes. The position is affiliated with the APT research group (Artificial Pancreas Trondheim, <https://www.apn-norway.com>). The recorded sound will

also be combined with continuous glucose sensor data and motion data in order to achieve larger robustness to e.g. ambient noise. The equipment is being built by SINTEF, but the PhD candidate will be involved in the design. Methods may include sensor fusion, calculation of time/frequency domain features, pattern recognition and machine learning. The APT group has access to facilities, staff and other necessary resources for acquisition of data from healthy people and diabetes patients, and the candidate will be involved in the planning and conduction of such experiments as part of a larger experienced team.

For more information, please contact Anders.Fougner@ntnu.no

Application deadline: 1 May 2019.

Proposed startup: August 2019.

[Back to the contents](#)

6.3. PhD: Western University, Canada

Contributed by: Abdelhamid Tayebi, atayebi@lakeheadu.ca

PhD positions in the area of Nonlinear Observers and Control Design with applications to Unmanned Aerial Vehicles, are available in the ECE department, Western University, London, Ontario, Canada and the Electrical Engineering department, Lakehead University, Ontario, Canada.

Please send your CV to Prof. A. Tayebi: atayebi@lakeheadu.ca
(<http://flash.lakeheadu.ca/tayebi/>)

[Back to the contents](#)

6.4. PhD: Technische Universität (TU) Berlin, Germany

Contributed by: Joerg Raisch, raisch@control.tu-berlin.de

PhD position at TU Berlin on “Compositional Methods for the Control of Concurrent Timed Discrete-Event Systems.”

DFG (German Science Foundation) and GACR (Czech Science Foundation) will fund a new joint research project on “Compositional Methods for the Control of Concurrent Timed Discrete-Event Systems” at Technische Universität (TU) Berlin, Friedrich-Alexander Universität (FAU) Erlangen-Nürnberg and the Czech Academy of Sciences. In the context of this project, a PhD position at TU Berlin is available. The successful candidate will closely collaborate with another PhD student at FAU Erlangen and a postdoctoral researcher at the Czech Academy of Sciences Branch at Brno. S/he will be supervised by Joerg Raisch from the Control Systems Group at TU Berlin. The appointment will be for 3 years. As an employee of TU Berlin, the successful candidate will receive a competitive salary and benefits (according to German pay scale E13).

Requirements: successfully completed university degree (Master, Diploma or equivalent) in Engineering, Applied Mathematics, or a related subject. In particular, we require the applicant to have (i) a strong background in systems and control theory (previous experience in discrete event systems is an advantage), (ii) a genuine interest to pursue methodologically challenging research at the interface of control, computer science, and mathematics, (iii) strong communication and cooperation skills, (iv) excellent English skills, both written and spoken.

Please send your applications by April 15th, 2019, to Ulrike Locherer (locherer@control.tu-berlin.de). Questions regarding the position should be sent to Joerg Raisch (raisch@control.tu-berlin.de).

To ensure equal opportunities between women and men, applications by women with the required qualifications are explicitly encouraged. Qualified individuals with disabilities will be favoured. TU Berlin values the diversity of its members and is committed to the goals of equal opportunities.

[Back to the contents](#)

6.5. PhD: Dalhousie University, Canada

Contributed by: Ya-Jun Pan, Yajun.Pan@Dal.Ca

Project: Intelligent Adaptive Autonomous Systems

Advanced Control and Mechatronics Lab, Dept. of Mechanical Engineering, Dalhousie University, Canada

Website: www.acm.me.dal.ca

Research: Our group is seeking a Ph.D Candidate to carry out work in the area of intelligent adaptive autonomous systems with applications to multiple unmanned aerial and ground vehicles and with the option of human operator existing in the loop as overseers. The project is part of the main theme carried out by our network research team with three universities, two research institutes and two industrial partners in Ontario and Québec, Canada. The research will be validated through experiments on the setups available in the host lab as well as in collaboration with academic/industrial partners.

Qualifications: The successful candidate must hold a Master's degree in any of the following disciplines: Electrical Engineering, Mechanical Engineering, Mechatronics, Control Engineering or equivalent. The applicant should have excellent academic records, have exceptional written and verbal communication skills, and be highly motivated to make contributions in the proposed research area.

Starting Date: The position is available immediately. The deadlines to apply for Graduate programs at Dalhousie University are as: September 2019 intake (April 1st for International students; June 1st for Canadian students) and January 2020 intake (August 31st for International students; October 31st for Canadian students).

To Apply: Please send your detailed CV listing publication records, transcripts, research statement and a list of three references to me at Yajun.Pan@Dal.Ca In addition, the guidelines in how to apply officially at Dalhousie University are as shown in the link:

<https://www.dal.ca/faculty/engineering/programs/graduate-studies/how-to-apply1.html>

[Back to the contents](#)

6.6. PhD: Bundeswehr University Munich, Germany

Contributed by: Gunther Reissig, gunther2016@reiszig.de

PhD position: Formal methods in control (Munich, Germany)

Bundeswehr University Munich, Germany

Department of Aerospace Engineering

Institute of Control Engineering

We invite applications for a doctoral researcher position in the field of formal methods in control. The successful candidate is expected to advance the state of the art of abstraction-based synthesis and verification, to facilitate routine and efficient application of the approach to nonlinear continuous-state plants and complex specifications. Depending on background and interests of the candidate, the research focus will be either on algorithms and software development, or on theoretical foundations.

Required qualifications:

- * MSc degree (or equivalent, giving access to doctoral studies) in Mathematics, Systems and Control, Computer Science, or a related field. Students about to complete their MSc will also be considered.
- * Strong theoretical or mathematical background, and a strong interest in dynamical or control systems.
- * Programming skills.
- * Efficient communication skills in English.

In addition, an intended focus on algorithms and software requires past exposure to and strong interest in professional-grade software development, while for a focus on theoretical foundations a strong mathematical or theoretical background is needed. Experience in one of the following fields would be a plus but is not necessarily required: Set-valued or validated numerics; dynamic programming; formal methods in control; reactive synthesis; information-based complexity / optimal recovery.

The position is full-time and paid according to pay scale "TVOeD Bund, E 13". Initial appointment is for two years, with possible extension contingent on availability of funds and research performance. The position is open to applicants worldwide; no special security clearance necessary.

Your complete application consists of the following documents, which should be sent as a single PDF file to the email address given below (deadline: May 5, 2019):

- * CV with photo
- * One-page cover letter (clearly indicating available start date as well as relevant qualifications, experience and motivation)
- * University certificates and transcripts (both BSc and MSc degrees)
- * Contact details of up to three referees
- * Possibly an English language certificate and a list of publications

All documents should be in English or German.

Gunther Reissig

<http://www.reiszig.de/gunther/>

Email: gunther2016@reiszig.de, Subject: PhD ref 9xfb6

[Back to the contents](#)

6.7. PhD: University of Groningen, The Netherlands

Contributed by: Ashish Cherukuri, a.k.cherukuri@rug.nl

We are looking for a candidate to join the PhD program in our new research group of Optimization and Decision Systems in Engineering and Technology Institute Groningen (ENTEG), University of Groningen (RUG). The candidate must have a Masters degree (or close to completion) in engineering, computer sci-

ence, operations research or applied mathematics. Strong mathematical background in the area of optimization and control is expected. The candidate should have good command over the English language (Dutch not required) and must be enthusiastic about working in interdisciplinary areas.

The topic will broadly fall in the areas of optimization, control, and game theory, as suited for networked cyber-physical systems, primarily, power and transportation networks. Special emphasis will be on data-driven methods.

PhD students will receive a competitive salary in accordance with the Collective Labour Agreement for Dutch Universities (CAO). Interested candidates are invited to send a complete application to Dr. Ashish Cherukuri (email: a.k.cherukuri@rug.nl), including the following items in a single PDF file:

1. A curriculum vitae (name, address, degree(s) with transcript(s) of grades, research experience, educational and employment history, etc.)
2. A statement of motivation/purpose, listing down relevant research experience (preferably less than 1 page)
3. Grade transcripts of obtained degrees/diplomas (in english)
4. Names and contact information of two academic references
5. (Optional) An example of research writing which can include Master thesis or equivalent project report or a submitted/accepted publication

Please use the subject of the email as "ODS-PhD-application." For full consideration, apply by 30th of April 2019.

For more information regarding the position please contact:

Dr. Ashish Cherukuri
a.k.cherukuri@rug.nl

About RUG and ENTEG. RUG is a top 100 research university currently ranked 80th on the Times Higher Education ranking. Founded in 1614, the university is one of the oldest research universities in the Netherlands. RUG is a truly international university, with over 30,000 students and 6,000 international students from over 120 different nationalities. According to the Shanghai Academic Ranking of World Universities (ARWU) 2018, Automation and Control Engineering at RUG is number one in the Netherlands, 5th in Europe and 18th worldwide.

[Back to the contents](#)

6.8. PhD: University of Alberta, Canada

Contributed by: Alan Lynch, alan.lynch@ualberta.ca

I am currently seeking talented students interested in performing their PhD in aerial robotics at the Dept. of Electrical and Computer Engineering at the University of Alberta, Canada. The expected start date is September 2019 or as soon as possible. The research topics focus on mobile robotics and on unmanned aerial vehicles in particular. Topics include aerial manipulation, payload transport, visual servoing, vision-based navigation, state estimation, visual odometry, visual-inertial odometry, multi-vehicle system coordination, novel actuation, aerodynamic modelling, and nonlinear control and observer design.

Desired student profile: The candidate should be motivated to work and have a strong background and/or interest in modelling, control, robotics, unmanned aerial systems, mathematics, control theory, physics, C/C++ programming, ROS, embedded systems, field testing, Linux. Successful candidates should have good communication and project management skills. Conference and journal publications are desirable. Please note the requirement for admission to the Dept of ECE at U of Alberta should be met <https://www.ualberta.ca/electrical-computer-engineering/graduate-studies/how-to-apply>

Application procedure: Please send as soon as possible: (1) a CV, (2) transcripts of previous university degrees, (3) representative publications, and (4) the contact information of three individuals who can serve as references. You will be contacted for an interview if your application is selected. Please send your application material by email to Prof. Alan Lynch alan.lynch@ualberta.ca

Alan Lynch, Professor
Dept. Electrical and Computer Engineering
University of Alberta, Edmonton AB, T6G 1H9, Canada
<http://www.ancl.ualberta.ca/>

[Back to the contents](#)

6.9. PhD: Grenoble University, France

Contributed by: Christophe Prieur, christophe.prieur@gipsa-lab.fr

PhD Position at Grenoble University, France in Statistical learning.

Project title: Statistical learning on manifold for attitude and position inference.

Attitude and position estimation as well as tracking is a crucial problem that occurs in a wide range of applications. It has attracted continuous attention in the last decades in satellite positioning, radar, robotics, to name just a few. Being able to track a vectorial quantity/direction with a real-time algorithm is still not a completely solved problem and only approximate solutions are available today. The proposed work will consist in exploring different approaches to estimate the attitude and position of the body by using magnetic, inertial and vision measures.

See <http://www.gipsa-lab.fr/christophe.prieur/Offers/phd1.pdf> for more information on this position.

Advisors: Nicolas Le Bihan and Christophe Prieur

Salary: 2025 euros/month after taxes (gross: 2515 euros).

Dates: beginning: Sept. or Oct 2019, for 3 years. The position may be closed before if a competent candidate has applied.

How to apply: Applications should be declared before the 1st of June and include a detailed resume, the CV and a list of (at least) two references to one of the advisors.

[Back to the contents](#)

6.10. PhD: Gipsa-lab & Grenoble University, France

Contributed by: Francesco Ferrante, francesco.ferrante@univ-grenoble-alpes.fr

PhD Position at Gipsa-lab & Grenoble University, Grenoble, France in Control Systems

Project title: Saturating boundary control of hyperbolic systems

The general context of this thesis is the boundary control of a class of infinite-dimensional systems, more precisely those described by hyperbolic partial differential equations (PDEs). The main interest in hyperbolic PDEs is that those equations are ubiquitous in physical applications. For example, transport of electrical energy, the flow of fluids in open channels, the motion of chemicals in flow reactors; just to mention some, are typical examples of processes that can be mathematically described via hyperbolic PDEs. The focus of this thesis is on the design of saturating closed-loop boundary controllers and on the analysis of general infinite-dimensional closed-loop systems in the presence of saturating actuators. For more information on this position, see

<http://www.gipsa-lab.fr/francesco.ferrante/theses/theseGIPSA.pdf>

Advisors: Francesco Ferrante and Christophe Prieur

Starting date: Sept./Oct 2019, for 3 years.

Application deadline: until filled.

Qualifications: Applicants must hold, or be about to complete, a Master's degree (or equivalent) in Systems and Control, applied mathematics or a related discipline. Fluency in English is strongly required.

How to apply: Interested applicants should contact Dr. Ferrante. Applications must include a detailed resume, a short one-page CV, academic transcripts, and a list of (at least) two academic references.

[Back to the contents](#)

6.11. PhD: Arizona State University, USA

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

A number of PhD assistantships are available in the Control Systems Engineering Laboratory at Arizona State University for research in system identification and control engineering principles applied to modeling and optimization of mHealth interventions for physical activity. These are funded from two recently awarded US National Institute of Health (NIH) grants: U01CA229445 "Operationalizing behavioral theory for mHealth: dynamics, context, and personalization" and R01LM013107 "SCH: Control systems engineering for counteracting notification fatigue: an examination of health behavior change."

Candidates need to be admitted into the doctoral program at Arizona State for either chemical or electrical engineering, and will be working in a highly interdisciplinary environment involving psychologists, behavioral scientists, engineers, and computer scientists.

Inquiries (which should be accompanied by statements of interest and a summary of the candidate's background in control systems and ancillary fields) should be addressed to Professor Daniel E. Rivera, Program Director, Control Systems Engineering Laboratory, at daniel.rivera@asu.edu.

[Back to the contents](#)

6.12. Postdoc: North Carolina A&T State University, USAContributed by: Ali Karimodini, akarimod@ncat.edu

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

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

The candidate will be also working with both graduate and undergraduate students in a mentoring role, and will be involved in conducting workshops, and seminars. The candidate will enjoy a dynamic and collaborative working environment. U.S. citizenship is preferred, and minority candidates are strongly encouraged to apply. If interested, please apply electronically by sending a detailed curriculum vitae, copies of your top three publications, the summary of your PhD dissertation, names and contact information of three references, and other information that might be relevant to your application to Dr. Karimodini (akarimod@ncat.edu).

[Back to the contents](#)

6.13. Postdoc: Nazarbayev University, KazakhstanContributed by: Matteo Rubagotti, matteo.rubagotti@nu.edu.kz

The Department of Robotics and Mechatronics of Nazarbayev University, Astana, Kazakhstan (<https://sst.nu.edu.kz/en/robotics/>) invites applications for full-time Postdoctoral Scholar positions, with tentative start date August 2019.

Applicants must have a Ph.D. or equivalent degree by their start date, and are expected to have publications in reputable journals and conferences in the broad areas of control systems and robotics. Possible research areas are control and motion planning of variable-impedance actuated robots or tensegrity manipulators, or physical human-robot interaction. Excellent verbal and written communication skills in English are required. Postdoctoral Scholars are also expected to teach one course per semester relevant to their area of research and/or based on Department's needs.

The initial appointment is on a 1-year renewable contract with a possibility of annual renewal for up to 4 years maximum, subject to annual performance reviews. An attractive internationally competitive remuneration package will include: an internationally competitive salary, a startup grant for conference travels and collaborations, paid holiday leave of 30 days per annum, one home leave travel allowance per year for the appointee and dependents, paid international health insurance, rent-free housing for the appointee and dependents (typically on campus), assistance for relocation expenses including shipment allowance and airfares for the appointee and dependents, and an educational allowance for dependent children.

The review of applications will begin immediately but full consideration will be given to applications submitted no later than April 31, 2019. Applicants should submit a cover letter and a detailed CV including list of publications to sst.cv@nu.edu.kz. For any question, please do not hesitate to contact Prof. Matteo Rubagotti (matteo.rubagotti@nu.edu.kz).

[Back to the contents](#)

6.14. Postdoc: Nanyang Technological University, Singapore

Contributed by: C. C. Cheah, ecccheah@ntu.edu.sg

Job Opening for Postdoc Research Fellows in Vision/Machine Learning/Micromanipulation

The School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore invites applications for several postdoc research fellow positions in the following areas:

- 1) Robot vision
- 2) Machine Learning
- 3) Micro-manipulation

Applicants for the postdoc research fellow position should hold a Ph.D degree in relevant areas; have a track record of research experience in terms of publications; have a good command of English and are able to communicate well.

Application Procedure:

Suitably qualified candidates are invited to submit a CV, cover letter initially. Short-listed candidates will be notified for submission of full application packages. Electronic submission of application is encouraged and can be sent to:

Prof C. C. Cheah

Email: ECCCheah@ntu.edu.sg

Application closes when the positions are filled.

Only shortlisted candidates will be notified for interview.

[Back to the contents](#)

6.15. Postdoc: Dalhousie University, Canada

Contributed by: Ya-Jun Pan, Yajun.Pan@Dal.Ca

Post-Doctoral Fellowship

Project: Cooperative Multi-Agent Systems

Advanced Control and Mechatronics Lab, Dept. of Mechanical Engineering, Dalhousie University, Canada

Website: www.acm.me.dal.ca

Research: Our group is seeking a two-year post-doctoral fellow (renewable up to three years) in the area of cooperative multi-agent systems with collision/obstacle avoidance, fault tolerant control, and with the option of human operator existing in the loop as overseers. The project is part of the main theme: Effective Human Machine Cooperation with Intelligent Adaptive Autonomous Systems, carried out by our network research team with three universities, two research institutes and two industrial partners in Ontario and

Québec, Canada. The research will be validated through experiments on the setups available in the host lab as well as in collaboration with academic/industrial partners.

Qualifications: The successful candidate must hold a Ph.D. degree in any of the following disciplines: Electrical Engineering, Mechanical Engineering, Mechatronics, Control Engineering or equivalent. The applicant should have an established track-record of academic publications in top venues, have exceptional written and verbal communication skills, and be highly motivated to make contributions in the proposed research area.

Starting Date: The position is available immediately. The contract duration is for two year, with an extension to a third year possible based on performance and project continuation. Salary will be competitive and commensurate with experience. **To Apply:** Please send your detailed CV listing publication records, representative publications, research statement and a list of three references to me at Yajun.Pan@Dal.Ca

[Back to the contents](#)

6.16. Postdoc: University of Groningen, the Netherlands

Contributed by: Claudio De Persis , c.de.persis@rug.nl

A postdoctoral position is available with the SMS-Cyber-Physical Systems research group (currently consisting of 1 full professor, 2 assistant professors, 1 postdoc, 8 doctoral students) at the Faculty of Science and Engineering, University of Groningen, the Netherlands. The group is affiliated with the J.C. Willems Center in Systems and Control.

The research of the group currently focuses on resilient control, security of cyber-physical systems, data-driven estimation and control, feedback control via optimization, with applications to power systems, flow networks and data centers. The postdoc will be involved in the research activities of the group. The position also gives the successful candidate the possibility to further develop his/her educational skills and to be involved in teaching and student supervision.

Duration: initially one year, starting as soon as possible, with the possibility of extending the contract for one or two more years. Applications are accepted on a rolling basis and the position will remain open until a successful candidate is found.

Your Profile:

- A Ph.D. degree in Control Theory, Mechanical, Computer, Electrical & Electronics Engineering, Applied Mathematics, Computer Science;
- An excellent background in Systems & Control Theory. Preference will be given to candidates with strong expertise in one or more of the following areas, as demonstrated by results and papers in top-tier publications: identification, nonlinear control, networked control systems, cyber-physical systems, dynamical networks, hybrid control systems, distributed control and optimization, machine learning, synchronization in complex networks, robust and optimal control;
- Strong academic credentials, written and spoken English proficiency.

About the organization:

Since its foundation in 1614, the University of Groningen has enjoyed an international reputation as a dy-

namic and innovative center of higher education offering high-quality teaching and research. Study and career paths in a wide variety of disciplines encourage currently more than 30,000 students and researchers to develop their individual talents. Belonging to the best research universities in Europe, the top 100 universities in the world and joining forces with prestigious partner universities and networks, the University of Groningen is truly an international place of knowledge.

Information:

Interested candidates please send your application together with your detailed CV, motivational letter (1/2-1 A4 page) and list of references to:

c.de.persis@rug.nl, p.tesi@rug.nl, n.monshizadeh@rug.nl

Please specify the following text in the subject: SMS-CPS - PostDoc application.

[Back to the contents](#)

6.17. Faculty: Eindhoven University of Technology, Netherlands

Contributed by: Nathan van de Wouw, N.v.d.Wouw@tue.nl

Faculty Position at the Eindhoven University of Technology (TU/e), The Netherlands

The Department of Mechanical Engineering of the Eindhoven University of Technology (TU/e) invites applications for an outstanding faculty member at Assistant Professor level within the field of “Multi-physics Dynamical System Design.”

Shaping the design process for the engineering systems of the future poses many challenges related to system complexity. Namely, the complexity of such engineering systems is induced by 1) the required level of (multi-)functionality and safety, 2) their (inter-)connectivity, to other engineering systems and humans, and 3) the requirements on agility (responsiveness, autonomy). Research to support such complex engineering design demands a multidisciplinary research approach, relying on expertise from different disciplines within Mechanical Engineering, such as dynamics, material science, thermo- and fluid-dynamics, acoustics, and control. A model-based design of engineering systems consequently requires 1) models that are multi-physics, multi-scale, have predictive capacity, while only exhibiting modest model complexity, and 2) matching numerical simulation and tools for dynamic analysis and control that support design decisions and design optimization.

The Department of Mechanical Engineering of the TU/e seeks to hire an outstanding (tenure-track) assistant professor in the field of ‘Multi-physics Dynamical System Design’, who should play a leading role in addressing these challenges and trends in the above-mentioned areas. Core disciplines that are envisioned to be relevant include:

- Modelling and simulation of multi-physics, dynamical systems;
- (numerical) analysis of (Partial Differential Equation (PDE)) models;
- integrated systems and process design;
- model complexity reduction;
- (boundary) control of PDEs;
- design optimization;
- knowledge on relevant application domains such as, for example, transportation systems, health applications, smart industry, energy systems, agricultural systems, robotics, advanced manufacturing, and mechatronics.

Candidates are required to have a background (PhD) and track record in the field of Dynamical Systems and Control or a related discipline. The successful candidate is expected to establish an independent research program and to contribute effectively to the department's undergraduate and graduate teaching programs. The Eindhoven University of Technology is particularly interested in candidates who can contribute, through their research, teaching and/or service, to the diversity and excellence of the academic community.

More information regarding the position (vacancy number V35.3729) can be found at <https://jobs.tue.nl/en/vacancy/assistant-professor-1-fte-multiphysics-dynamical-system-design-469990.html> or contact

- prof.dr.ir. Nathan van de Wouw (email: n.v.d.wouw@tue.nl)
- prof.dr.ir. Ines Lopez Arteaga (email: i.lopez@tue.nl)
- prof.dr.ir. Maurice Heemels (email: m.heemels@tue.nl)
- dr. ir. Tom Oomen (email: t.a.e.oomen@tue.nl)
- or through the HR department
- drs. S. van Heijst (email: s.v.heijst@tue.nl)

How to apply:

If you are interested in this position and would like to apply, we request you to use the button “Apply for this job” in the link below

<https://jobs.tue.nl/en/vacancy/assistant-professor-1-fte-multiphysics-dynamical-system-design-469990.html>

Please upload your written application consisting of a letter of motivation, a statement of present and future research plans, a statement of teaching experience and interest, and detailed curriculum vitae including photograph and publications list, through the “Apply for this job” button. Recommendation letters are highly appreciated.

[Back to the contents](#)

6.18. Faculty: La Pontificia Universidad Javeriana, Colombia

Contributed by: Diego Patino, patino-d@javeriana.edu.co

La Pontificia Universidad Javeriana at Bogotá, Colombia invites applications for two faculty positions in Electronics Department at the rank of Assistant, Associate, or full Professor.

Candidates must have a strong commitment to undergraduate and graduate education and strong potential for research. The selected candidate is expected to get involved in formulation of research proposal, development of research projects, teaching of graduate and undergraduate courses in electronics engineering, supervision of undergraduate capstone projects, master research projects and doctoral thesis.

Position #1: Control Systems: Bachelor and master degrees in Electronics or Electrical Engineering or closely related field, with emphasis in control systems design. A doctoral degree is desirable. Preference will

be give to those with experience Advanced industrial process control (MPC, IMC, System identification), SCADA systems (PLC, DCS), Instrumentation and Field buses, Digital control implementation, microcontrollers, DSP and/or FPGA.

Position #2: Energy Systems: Bachelor and master degrees in Electronics or Electrical Engineering or closely related field. A doctoral degree is desirable. Preference will be give to those with experience in Smart-grids technologies, Renewable energies, Energy storage systems integration, Novel electricity markets (demand response, risk management).

Pontificia Universidad Javeriana is a very well known university in Colombia. The electronics department offers courses to ABET-accredited BS, as well as MS and PhD degree programs in electronic engineering. The department was founded in 1960 and currently has around 600 students enrolled. There are 26 faculty members at the department.

Spanish is no needed. English is enough. Interested candidates should send a detailed CV with list of publications, statement of purpose (no more than 2 pages), teaching interests (no more than 2 pages), and a cover letter including contact information of two references to:

patino-d@javeriana.edu.co

depto.electronica@javeriana.edu.co

[Back to the contents](#)

6.19. Faculty: University of Sheffield, UK

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

The Department of Automatic Control and Systems Engineering at the University of Sheffield, UK, is seeking to recruit three academic positions:

*****Lecturer in Control and Systems Engineering (two posts are available)*****

We would like to appoint in any of the following areas: Machine Learning and AI for Engineering, Signal Processing, Autonomous Systems and Robotics, Bioengineering, Systems Biology, Synthetic Biology, Aerospace Engineering, Digital Manufacturing, Intelligent Sensing and Data Analytics, Complex Systems Modelling and Analysis, Optimisation and Decision Support Systems, or a related area.

We are looking for innovative and visionary researchers who are able to develop, lead and sustain research of international standing in control and systems engineering through high-quality research publications, research grant income and impact generation.

A key requirement of the role is the ability to establish collaborations with other research groups and engage in interdisciplinary projects. As a Lecturer, you will conduct research to the highest standards and as a teacher, you will play a key role in maintaining our reputation for high-quality teaching.

*****University Teacher in Control Engineering*****

As University Teacher in Control and Systems Engineering you will play a key role in maintaining the department's reputation for high-quality teaching by devising, designing, preparing, and delivering our undergraduate and postgraduate courses. You will be responsible for delivering your own courses and

engaging expert lecturers. You will work with the Director of Learning and Teaching to evaluate the effectiveness of courses and use the findings to optimise content and delivery methods.

For further information and application details for each post, please visit:
<https://www.sheffield.ac.uk/acse/people/jobs>

The closing date for applications is 24 April 2019.

[Back to the contents](#)

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

Contributed by: Morten Breivik, morten.breivik@ntnu.no

The Norwegian University of Science and Technology (NTNU, <http://www.ntnu.edu/>) is establishing a new professorship in Assurance of Autonomous Systems, in collaboration with the leading quality assurance and risk management company DNV GL (<https://www.dnvgl.com/>).

The position will be affiliated with the Department of Engineering Cybernetics (Institutt for teknisk kybernetikk, ITK – <http://www.ntnu.edu/itk>) at NTNU's Faculty of Information Technology and Electrical Engineering in Trondheim, Norway.

ITK has 29 professors, 15 adjunct professors, about 15 postdocs and researchers as well as 80 PhD candidates. Approximately 170 candidates graduate annually from the three MSc programs in cybernetics, which comprise over 800 students in total. The department is involved in numerous research projects and centers, including the Centre of Excellence for Autonomous Marine Operations and Systems (NTNU AMOS, <http://www.ntnu.edu/amos>).

The term assurance is defined as being “ground for justified confidence”, and the level of required confidence depends on a system's criticality. Confidence is established by providing evidence that the system meets defined requirements, and this evidence should be complete, correct, relevant and objective. The challenges of being able to address assurance of autonomous systems is related to their inherent complexity, since their requirements call for advanced knowledge/model representations with mechanisms such as learning, adaptation, reasoning and optimization leading to complex software and human-machine interaction.

Together with specifications and requirements, performance metrics will form the basis for standards, rules, regulations, testing, verification, validation and certification. The professor should have competence and motivation for research in this area, with impact both on improving the performance of autonomous systems in terms of safety, robustness and reliability, as well as developing a solid foundation for testing, verification and validation of such systems. In particular, research competence in the following areas is regarded as relevant for the position:

- Autonomous systems, robotics and artificial intelligence
- Optimization, systems and control theory
- Big data analytics
- Decision support systems
- Human-machine interaction

- Risk modelling, analysis and management
- Safety and reliability engineering
- Simulation technology
- Software testing
- Systems engineering
- Embedded and real-time software engineering
- Industrial computer systems

Research activities are expected to have a strong international profile and impact, with a long-term perspective and to be concentrated around basic challenges and enabling technologies with relevance and importance for applications and industry. The department has strong relationships to Norwegian and international industry, with numerous joint research projects including applications in the maritime, offshore, energy, process, aquaculture and medical industries.

The research activities at the department rely mainly on external funding, and the development of educational programs may also receive external funding. The successful applicant is expected to engage extensively in applications for external research funding, e.g. from the Research Council of Norway, European research and educational agencies, the industry sector, and other available sources. The candidate will join a research community at ITK which was rated “excellent from an international perspective” in the Norwegian Research Council’s evaluation of 53 ICT communities in Norway in 2012, as one of only three ICT communities to receive such a rating in the Norwegian university and college sector. Currently, two of ITK’s professors are IEEE Fellows.

The full announcement can be found at <https://www.jobbnorge.no/en/available-jobs/job/164047/professor-associate-professor-in-assurance-of-autonomous-systems>

[Back to the contents](#)

6.21. Associate Director: Curtin University, Australia

Contributed by: Cheyenne McMullan, curtincareers@curtin.edu.au

Associate Director, ARC Training Centre for Transforming Maintenance through Data Science

Job No: CURTIN602

Location: Perth

3 years fixed-term, full time with the possibility of extension Level C with a competitive salary plus 17% superannuation

The Australian Centre for Transforming Maintenance through Data Science is a joint collaboration between Curtin University, The University of Western Australia and CSIRO, and industry partners Alcoa, BHP and Roy Hill, as well as CORE Innovation Hub and the Minerals Research Institute of Western Australia. The Centre, co-funded by the Australian Research Council through the Industrial Transformation Training Centre scheme, aims to train a new generation of data scientist specialists, equipping them with the skills needed to develop new data science methods for solving complex modelling and optimisation challenges in asset maintenance. This cohort of data scientists will drive an exciting transformation of maintenance practice in the Australian resources industry based on new advances in machine learning, artificial intelligence and optimisation. The Centre involves a team of 20 scientists and engineers at the three research

institutes together with practicing engineers and data scientists at the industry partners.

Your new role:

A rare opportunity exists for an associate director for the Australian Centre for Transforming Maintenance through Data Science. This new academic position will contribute intellectually to the research programs across the centre as well as provide additional leadership to assist the centre director Professor Andrew Rohl.

You will contribute to at least one of the three research themes in the centre.

Supporting the maintainer

Supporting the engineer - managing uncertainty

Supporting the manager - making decisions

See research themes diagram

The focus of each theme is to develop the tools and solutions necessary to support maintenance tasks across the organisation.

The role will involve:

Supervising postgraduate students and postdoctoral fellows within the Centre

Providing leadership across the centre through significant roles on the appropriate governance committees

Collaboration with the Centre's industry partners on project development and delivery

Utilising your in-depth leadership knowledge and skills to enable and deliver new scientific discoveries, leading to international publications and practical impact

Developing and delivering short courses for industry

This is a unique opportunity to work on real-world problems faced by the Australian resources industry.

You will bring to this role:

PhD in engineering, computer science, applied mathematics or related area

A strong track record of publications in high-quality journals, ideally on topics relevant to the Centre's research programs

Demonstrated high-level communication (written and oral) with the ability to engage and present information clearly and informatively to diverse audiences

Demonstrated ability to lead and contribute to overall team performance and proven ability to meet the Centre's performance deadlines during the course of the project

Leadership experience in inter-disciplinary and/or industry-based research

What we offer you:

Curtin University offers a competitive remuneration and benefits package, a friendly and collaborative work environment, generous leave entitlements, flexible working arrangements, a relocation allowance, generous superannuation, salary-packaging arrangements including childcare, and the potential to support dual-career arrangements.

For details of Curtin's employee benefits please visit <https://about.curtin.edu.au/jobs/>

What we need from you:

You are encouraged to respond specifically to the selection criteria, which can be found in the Academic Role Statement.

Applications close: 5:00 pm, Friday 26 April 2019

How to Apply: to be considered for the role please apply via <https://applynow.net.au/jobs/ni/CURTIN602>

Valuing Diversity and Inclusion:

At Curtin, we are committed to Aboriginal and Torres Strait Islander reconciliation, diversity and social justice and aim to create an inclusive environment where our staff and students are valued and inspired. This includes a supportive recruitment process should you require any access assistance.

Explore some more

<https://scieng.curtin.edu.au/schools/electrical-eng-computing-maths/>

<https://news.curtin.edu.au/media-releases/curtin-awarded-10-3m-arc-funding-training-centre-fellowships/>

Contact details

To apply complete the application form below, or for more information contact:

Professor Andrew Rohl, Director - Australian Centre for Transforming Maintenance through Data Science

Phone: +61 8 9266 3124

Email: andrew.rohl@curtin.edu.au

Please only apply via the attached link. Please do not send your resume direct to the above contact.

[Back to the contents](#)

6.22. Research Associate: Curtin University, Australia

Contributed by: Cheyenne McMullan, curtincareers@curtin.edu.au

Research Associate/Fellow - Optimisation and Operations Research

Job No: CURTIN601

Location: Perth

3 years fixed-term, full time

\$88,135 - \$118,115 (Level A/B) and 17% superannuation

The Australian Centre for Transforming Maintenance through Data Science is a joint collaboration between Curtin University, The University of Western Australia and CSIRO, and industry partners Alcoa, BHP and Roy Hill, as well as CORE Innovation Hub and the Minerals Research Institute of Western Australia. The Centre, co-funded by the Australian Research Council through the Industrial Transformation Training Centre scheme, aims to train a new generation of data scientist specialists, equipping them with the skills needed to develop new data science methods for solving complex modelling and optimisation challenges in asset maintenance. This cohort of data scientists will drive an exciting transformation of maintenance practice in the Australian resources industry based on new advances in machine learning, artificial intelligence and optimisation. The Centre involves a team of 20 scientists and engineers at the three research institutes together with practicing engineers and data scientists at the industry partners.

Your new role:

A unique opportunity exists for a postdoctoral researcher to help drive the Centre's optimisation research program. The position will involve research into the development of new optimisation theory and algorithms to solve large-scale optimisation problems related to maintenance scheduling and planning. This will involve a variety of different optimisation techniques such as combinatorial optimisation, constraint programming, evolutionary algorithms, and nonlinear optimisation.

The research fellow will be required to:

Liaise with industry contacts and assist students to effectively work with teams consisting of both industry and university stakeholders; Work across institutions and act as a mentor for a cohort of research students during study and industry placement; and Direct and supervise final year undergraduate students and PhD students. This is an exciting opportunity to apply mathematical optimisation techniques to real-world problems faced by the Australian resources industry.

You will bring to this role:

A PhD in Optimisation or Operations Research (applicants who are close to finishing their PhD will also be considered)

Demonstrated ability to conduct innovative research

Track record of research publications and in seeking and obtaining grant funding (relative to opportunity)

Ability to work with a broad range of people from varying research backgrounds and evidence of strong oral and written communication skills Demonstrated ability to work independently under minimal supervision while

contributing to overall team performance and proven ability to meet performance deadlines during the course of the project Inter-disciplinary research expertise and/or industry experience will be advantageous

What we offer you:

Curtin University offers a competitive remuneration and benefits package, a friendly and collaborative work environment, generous leave entitlements, flexible working arrangements, a relocation allowance, generous superannuation, salary-packaging arrangements including childcare, and the potential to support dual-career arrangements.

For details of Curtin's employee benefits please visit <https://about.curtin.edu.au/jobs/>

What we need from you:

You are encouraged to respond specifically to the selection criteria which can be found in the Academic Role Statement.

Applications close: 5:00 pm, Friday 26 April 2019

How to Apply: To be considered for the role please apply via

<https://applynow.net.au/jobs/ni/CURTIN601>

Valuing Diversity and Inclusion

At Curtin, we are committed to Aboriginal and Torres Strait Islander reconciliation, diversity and social justice and aim to create an inclusive environment where our staff and students are valued and inspired.

This includes a supportive recruitment process should you require any access assistance.

Explore some more

<https://scieng.curtin.edu.au/schools/electrical-eng-computing-maths/>

<https://news.curtin.edu.au/media-releases/curtin-awarded-10-3m-arc-funding-training-centre-fellowships/>

Contact Details

Professor Ryan Loxton, Curtin University

Phone: +61 8 9266 9218

Email: r.loxton@curtin.edu.au

Please only apply via the attached link. Please do not send your resume direct to the above contact.

[Back to the contents](#)