

## **E-LETTER on Systems, Control, and Signal Processing**

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Welcome to the 364 issue of the E-letter, available electronically [here](#).

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The next E-letter will be mailed out at the beginning of January 2019.

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- 7.15 PostDoc: KTH and Linköping University, Sweden
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- 7.28 PostDoc: Technion–Israel Institute of Technology, Israel
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- 7.36 Faculty: University of Oxford, UK
- 7.37 Faculty: Paderborn University, Germany
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- 7.39 Control Engineer: Booz Allen, USA

## 1. IEEE CSS Headlines

### 1.1. Official Facebook Page of IEEE Control Systems Society

Contributed by: Ankush Chakrabarty, [achakrabarty@g.harvard.edu](mailto:achakrabarty@g.harvard.edu)

The official Facebook page of the IEEE Control Systems Society is now available at:  
[www.facebook.com/CSSIEEE](http://www.facebook.com/CSSIEEE) .

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### 1.2. LinkedIn Group for CSS Young Professionals

Contributed by: Jeff Peters, [petersjr@utrc.utc.com](mailto:petersjr@utrc.utc.com)

Calling all Young Professionals! The CSS Young Professionals organization has just created a new LinkedIn group, which will be used to post YP news, communicate YP events, and provide a platform for general YP discussion. All young professionals within CSS are encouraged to join the group by visiting this page: <https://www.linkedin.com/groups/13637643/>. If you have any questions, please contact Jeff Peters at [petersjr@utrc.utc.com](mailto:petersjr@utrc.utc.com).

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### 1.3. IEEE Control Systems Society Technically Cosponsored Conferences

Contributed by: Luca Zaccarian, CSS AE Conferences, [zaccarian@laas.fr](mailto:zaccarian@laas.fr)

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

- 12th International Workshop on Robot Motion and Control (RoMoCo'2019). Poznan, Poland. Jul 8 - Jul 10, 2019. <http://romoco.put.poznan.pl/>
- 38th Chinese Control Conference (CCC 2019). Guangzhou, China. Jul 27 - Jul 30, 2019. <http://www.ccc2019.cn/en/index.html>
- International Conference on Unmanned Aircraft Systems (ICUAS'19). Atlanta (GA), United States. Jun 11 - Jun 14, 2019. <http://www.uasconferences.com/>
- 12th Asian Control Conference (ASCC). Fukuoka, Japan. Jun 9 - Jun 12, 2019. <http://www.ascc2019.org/>
- 31st Chinese Control and Decision Conference (2019 CCDC). Nanchang, China. Jun 3 - Jun 5, 2019. <http://www.ccdc.neu.edu.cn/>

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>

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### 1.4. IEEE Transactions on Automatic Control

Contributed by: Alessandro Astolfi, [ieeetac@imperial.ac.uk](mailto:ieeetac@imperial.ac.uk)

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### 1.5. IEEE Control Systems Letters

Contributed by: Francesca Bettini, [bettini@dei.unipd.it](mailto:bettini@dei.unipd.it)

This message is to announce that starting from November 2019 IEEE Control Systems Letters is indexed in Scopus. The first papers have already included in the database, the others will be gradually added.

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## 1.6. IEEE Control Systems Society Publications Content Digest

Contributed by: Kaiwen Chen, [kaiwen.chen16@imperial.ac.uk](mailto:kaiwen.chen16@imperial.ac.uk)

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

The CSS Publications Content Digest, available at

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

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

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

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## 2. Awards

### 2.1. Call for 2020 IFAC Major Awards and IFAC Fellow Nominations

Contributed by: Karl H. Johansson, [kallej@kth.se](mailto:kallej@kth.se)

Call for 2020 IFAC Major Awards and IFAC Fellow Nominations

The Call for 2020 IFAC Major Awards and IFAC Fellow Nominations are now available at

<https://www.ifac-control.org/awards/nominations-2020>

Nominations should be submitted through PaperCept at

<https://ifac.papercept.net/conferences/scripts/submissionwizard.pl?ConfID=349>

Deadline for Fellow Nominations: January 6, 2019

Deadline for Major Awards Nominations: February 15, 2019

If you have any questions, please, contact the IFAC Secretariat at [secretariat@ifac-control.org](mailto:secretariat@ifac-control.org)

Karl H. Johansson

Chair, IFAC Awards Committee

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## 3. MISC

### 3.1. Spring School on Data-driven Model Learning for Dynamic Systems

Contributed by: Guillaume Mercère, [guillaume.mercere@univ-poitiers.fr](mailto:guillaume.mercere@univ-poitiers.fr)

2019 Spring School on Data-driven Model Learning for Dynamic Systems

Ecole Centrale de Lyon, Ecully, France, 1-4 April 2019

After two editions at Polytech Nancy, the third edition of this spring doctoral school on data-based modeling (system identification) will be organized on the campus of the Ecole Centrale de Lyon. The school consists of a series of lectures and of exercise sessions aiming at covering the fundamentals of data-driven modeling approaches as well as more advanced topics. The course is eligible for scientific doctoral modules. The school is thus mainly aimed at an audience of PhD students, but is also open to any other persons interested in the topic of data-based modeling.

The 2019-edition will have the honour to welcome Professor Hjalmarsson (KTH, Stockholm, Sweden) that will present a one-day course entitled: Dynamic Model Learning

More information on this doctoral school (registration fees, accommodation, ...) can be found at the following link:

<https://spring-id-2019.sciencesconf.org/>

The deadline for registration is 31 January 2019.

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### **3.2. EECI International Graduate School on Control**

Contributed by: Giordano Scarciotti, [g.scarciotti@imperial.ac.uk](mailto:g.scarciotti@imperial.ac.uk)

EECI International Graduate School on Control at Imperial College London

Title: Model reduction for linear and nonlinear systems

We will hold an IGSC of 5 days (21 hours) from the 29th to the 3rd of May at Imperial College London on Model Reduction. For more information, please follow the links below.

Abstract: <https://www.dropbox.com/s/yqqnyxufa36tfd/EECI-IGSC-2019-Model%20Reduction.pdf?dl=0>

Logistical Information: <http://www.eeci-igsc.eu/doc/users/395/bib/logisticalinformationimperialcollegeu6301.pdf>

Registration website: <http://www.eeci-igsc.eu/registration/>

Early registration closes on the 28 of February.

If you have any question, do not hesitate to contact me at [g.scarciotti@imperial.ac.uk](mailto:g.scarciotti@imperial.ac.uk)

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### **3.3. FDITOOLS - Fault Detection and Isolation Tools for MATLAB**

Contributed by: Andreas Varga, [varga.andreas@gmail.com](mailto:varga.andreas@gmail.com)

FDITOOLS - Fault Detection and Isolation Tools for MATLAB

The freely available Fault Detection and Isolation Tools (FDITOOLS) is a collection of MATLAB functions for the analysis and solution of fault detection and model detection problems. FDITOOLS supports the latest developments of the synthesis approaches of linear fault detection and model detection filters for both continuous-time and discrete-time linear time-invariant systems. The implemented functions are based on the computational procedures described in the book:

”A. Varga, Solving Fault Diagnosis Problems – Linear Synthesis Techniques, Springer, 2017.”

The current version of FDITOOLS is V1.0, dated November 30, 2018. This version covers all synthesis procedures described in the above book and, additionally, includes a comprehensive collection of analysis functions, as well as functions for an easy setup of synthesis models. The codes have been developed under MATLAB 2015b and have been tested with MATLAB 2016a through 2018b. To use the functions, the Control System Toolbox (Version 9.10 or later) and the Descriptor System Tools (DSTOOLS) collection (Version V0.71 or later) must be installed in MATLAB running under 64-bit Windows 7, 8, 8.1 or 10.

A comprehensive documentation of FDITOOLS V1.0 is available on arXiv at <https://arxiv.org/abs/1703.08480>

.

Further information on FDITOOLS and its installation are available at

<https://sites.google.com/site/andreasvargacontact/home/software/fditools> .

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### 3.4. Short Course on “Game Theory and Distributed Control”

Contributed by: Jeff Shamma, [jeff.shamma@kaust.edu.sa](mailto:jeff.shamma@kaust.edu.sa)

Short course on ”Game Theory and Distributed Control”

KAUST

14/04/2019-18/04/2019

As part of the EECI 2019 International Graduate School on Control, there will be a one week short course by Profs. Jason Marden (UCSB) and Jeff Shamma (KAUST) on ”Game theory and distributed control”. This course presents an introduction to game theory and how it can be used as an effective design approach for distributed architecture control systems, with various illustrative examples of multi-agent distributed coordination.

Topics include:

- Elements of normal form games
- Nash equilibrium and generalized solution concepts
- Potential games and their variants
- Price-of-anarchy and price-of-stability
- Mechanism and utility design
- Multi-agent online learning algorithms
- Applications to distributed control problems

The course, as well as housing, dining, and recreation facilities, will all be on the KAUST campus (one hour by car north of Jeddah). KAUST will assist in the visa process as well as local transportation and accommodations.

To have sufficient lead time for these arrangements, the deadline for registration (with both EECI & KAUST) is Feb 10, 2019.

For additional information and KAUST registration, please visit: <https://igsc.kaust.edu.sa/home>

For EECI registration, please visit: <http://www.eeci-igsc.eu/>

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## 4. Books

### 4.1. Stochastic Control and Filtering over Constrained Communication Networks

Contributed by: Oliver Jackson, [oliver.jackson@springer.com](mailto:oliver.jackson@springer.com)

Title: Stochastic Control and Filtering over Constrained Communication Networks

Authors: Liu, Q., Wang, Z., He, X.

ISBN: 978-3-030-00156-8

Hardcover: \$149.99/EURO 119.99

249 pages,

November 2018, Springer

URL: <https://www.springer.com/us/book/9783030001568>

“Stochastic Control and Filtering over Constrained Communication Networks” presents up-to-date research developments and novel methodologies on stochastic control and filtering for networked systems under constrained communication networks. It provides a framework of optimal controller/filter design, resilient filter design, stability and performance analysis for the systems considered, subject to various kinds of communication constraints, including signal-to-noise constraints, bandwidth constraints, and packet drops. Several

techniques are employed to develop the controllers and filters desired, including: recursive Riccati equations; matrix decomposition; optimal estimation theory; and mathematical optimization methods.

Readers will benefit from the book's novel concepts, models and methodologies that have practical significance in control engineering and signal processing. "Stochastic Control and Filtering over Constrained Communication Networks" is a practical research reference for engineers dealing with networked control and filtering problems. It is also of interest to academics and students working in control and communication networks.

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### 4 Event-Triggered Resilient Filtering with Measurement Quantization

4.1 Problem Formulation; 4.2 Main Results; 4.3 Performance Analysis; 4.4 An Illustrative Example; 4.5 Conclusions; References

### 5 Event-Based Distributed Filtering of Continuous-Time Nonlinear Systems

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### 6 Event-Based Distributed Filtering over Markovian Switching Topologies

6.1 Problem Formulation; 6.2 Main Results; 6.3 An Illustrative Example; 6.4 Conclusions; References

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## 4.2. Hybrid System Identification

Contributed by: Oliver Jackson, [oliver.jackson@springer.com](mailto:oliver.jackson@springer.com)

Title: Hybrid System Identification

Authors: Lauer, F., Bloch, G.

ISBN: 978-3-030-00192-6

Hardcover: \$169.99/EURO 139.99

274 pages,

October 2018, Springer

URL: <https://www.springer.com/us/book/9783030001926><https://www.springer.com/us/book/9783030001926>

“Hybrid System Identification” helps readers to build mathematical models of dynamical systems switching between different operating modes, from their experimental observations. It provides an overview of the interaction between system identification, machine learning and pattern recognition fields in explaining and analysing hybrid system identification. It emphasises the optimization and computational complexity issues that lie at the core of the problems considered and sets them aside from standard system identification problems. The book presents practical methods that leverage this complexity, as well as a broad view of state-of-the-art machine learning methods.

The authors illustrate the key technical points using examples and figures to help the reader understand the material. The book includes an in-depth discussion and computational analysis of hybrid system identification problems, moving from the basic questions of the definition of hybrid systems and system identification to methods of hybrid system identification and the estimation of switched linear/affine and piecewise affine models. The authors also give an overview of the various applications of hybrid systems, discuss the connections to other fields, and describe more advanced material on recursive, state-space and nonlinear hybrid system identification.

“Hybrid System Identification” includes a detailed exposition of major methods, which allows researchers and practitioners to acquaint themselves rapidly with state-of-the-art tools. The book is also a sound basis for graduate and undergraduate students studying this area of control, as the presentation and form of the book provides the background and coverage necessary for a full understanding of hybrid system identification, whether the reader is initially familiar with system identification related to hybrid systems or not.

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### 4.3. Nonlinear Filtering

Contributed by: Laura Burgess, [laura.burgess@springer.com](mailto:laura.burgess@springer.com)

Nonlinear Filtering by Kumar Pakki Bharani Chandra and Da-Wei Gu

ISBN: 978-3-030-01796-5

November 2018, Springer

Hardcover, 184 pages, \$149.99/Euro 119.99

<https://www.springer.com/gp/book/9783030017965>

This book gives readers in-depth know-how on methods of state estimation for nonlinear control systems. It starts with an introduction to dynamic control systems and system states and a brief description of the Kalman filter. In the following chapters, various state estimation techniques for nonlinear systems are discussed, including the extended, unscented and cubature Kalman filters. The cubature Kalman filter and its variants are introduced in particular detail because of their efficiency and their ability to deal with systems with Gaussian and/or non-Gaussian noise. The book also discusses information-filter and square-root-filtering algorithms, useful for state estimation in some real-time control system design problems.

A number of case studies are included in the book to illustrate the application of various nonlinear filtering algorithms. Nonlinear Filtering is written for academic and industrial researchers, engineers and research students who are interested in nonlinear control systems analysis and design. The chief features of the book include: dedicated coverage of recently developed nonlinear, Jacobian-free, filtering algorithms; examples illustrating the use of nonlinear filtering algorithms in real-world applications; detailed derivation and complete algorithms for nonlinear filtering methods, which help readers to a fundamental understanding and easier coding of those algorithms; and MATLAB® codes associated with case-study applications, which can be downloaded from the Springer Extra Materials website.

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1. Control Systems and State Estimation
2. State Observation and Estimation
3. Kalman Filter and Linear State Estimations
4. Jacobian-Based Nonlinear State Estimation
5. Cubature Kalman Filter

6. Variants of Cubature Kalman Filter
7. More Estimation Methods and Beyond

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#### **4.4. Production Planning, Modeling and Control of Food Industry Processes**

Contributed by: Laura Burgess, [laura.burgess@springer.com](mailto:laura.burgess@springer.com)

Production Planning, Modeling and Control of Food Industry Processes by P. Cano Marchal

J. Gómez Ortega and J. Gámez García

ISBN: 978-3-030-01372-1

December 2019, Springer

Hardcover, 202 pages, \$149.99/Euro 119,99

<https://www.springer.com/gb/book/9783030013721>

This book provides a new approach to the control of food transformation processes, emphasizing the advantage of considering the system as a multivariable one, and taking a holistic approach to the decision-making process in the plant, considering not only the technical but also the economic implications of these decisions. In addition, it presents a hierarchical structure for the global control of the plant, and includes appropriate techniques for each of the control layers.

The book addresses the challenges of modelling food transformation processes, using both traditional system-identification techniques and, where these prove impractical, models based on expert knowledge and using fuzzy systems. The construction of optimal controllers for each of these types of models is also discussed, as a means to close a feedback loop on the higher-level outputs of the process.

Finally, the problem of production planning is covered from two standpoints: the traditional batch-sizing problem, and the planning of production throughout the season. Systematic season-wide production planning is built upon the models constructed for the control of the plant, and incorporates market- and business-specific information. Examples based on the processing of various foodstuffs help to illustrate the text throughout, while the book's closing chapter presents a case study on advances in the processing of olive oil.

Given its scope, the book will primarily be of interest to two groups of readers: food engineering practitioners and students, who are familiar with the characteristics of food processes but have little or no background in control engineering; and control engineering researchers, students and practitioners, whose situation is just the opposite, and who wish to learn more about food engineering and its specific challenges for control.

Contents

1. Introduction
2. Modeling and System Identification
3. Control of Lower-Level Dynamic Layers
4. Control of Higher-Level Dynamic Layers
5. Production Planning for Food Transformation Processes
6. Case Study: Virgin Olive Oil Production Process
7. Conclusions and Future Directions

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#### **4.5. Modeling and Control of Batch Processes**

Contributed by: Laura Burgess, [laura.burgess@springer.com](mailto:laura.burgess@springer.com)

Modeling and Control of Batch Processes by Prashant Mhaskar, Abhinav Garg and Brandon Corbett

ISBN: 978-3-030-04139-7

November 2018, Springer

Hardcover, 337 pages, \$179.99/Euro 159,99

<https://www.springer.com/gb/book/9783030041397>

Modeling and Control of Batch Processes presents state-of-the-art techniques ranging from mechanistic to data-driven models. These methods are specifically tailored to handle issues pertinent to batch processes, such as nonlinear dynamics and lack of online quality measurements. In particular, the book proposes:

- a novel batch control design with well characterized feasibility properties;
- a modeling approach that unites multi-model and partial least squares techniques;
- a generalization of the subspace identification approach for batch processes; and applications to several detailed case studies, ranging from a complex simulation test bed to industrial data.

The book's proposed methodology employs statistical tools, such as partial least squares and subspace identification, and couples them with notions from state-space-based models to provide solutions to the quality control problem for batch processes. Practical implementation issues are discussed to help readers understand the application of the methods in greater depth. The book includes numerous comments and remarks providing insight and fundamental understanding into the modeling and control of batch processes. Modeling and Control of Batch Processes includes many detailed examples of industrial relevance that can be tailored by process control engineers or researchers to a specific application. The book is also of interest to graduate students studying control systems, as it contains new research topics and references to significant recent work.

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2. Safe-Steering of Batch Processes
3. Robust Model Predictive Control and Fault-Handling of Batch Processes
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5. Integrating Data-Based Modeling and Nonlinear Control Tools for Batch Process Control
6. An Adaptive Data-Based Modeling Approach for Predictive Control of Batch Systems
7. Data-Driven Model Predictive Quality Control of Batch Processes
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10. Subspace Identification for Data-Driven Modeling and Quality Control of Batch Processes
11. Handling Multi-rate and Missing Data in Variable Duration Economic Model Predictive Control of Batch Processes with Application to Electric Arc Furnace Operation
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14. Subspace-Based Model Identification of a Hydrogen Plant Startup Dynamics

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#### **4.6. Observability and Controllability of General Linear Systems**

Contributed by: Lyubomir T. Gruyitch, [gruyitch.lyubomir.t@gmail.com](mailto:gruyitch.lyubomir.t@gmail.com)

OBSERVABILITY AND CONTROLLABILITY OF GENERAL LINEAR SYSTEMS

Lyubomir T. Gruyitch

CRC Press, Boca Raton, FL, 335 Pages, ISBN 9781138353152 - CAT# K395488

#### Summary

Observability and Controllability of General Linear Systems treats five different families of the linear systems, three of which are new. The book begins with the definition of time together with a brief description of its crucial properties. It presents further new results on matrices, on polynomial matrices, on matrix polynomials, on rational matrices, and on the new compact, simple and elegant calculus that enabled the generalization of the transfer function matrix concept and of the state concept, the proofs of the new necessary and sufficient observability and controllability conditions for all five classes of the studied systems.

#### Features

- Generalizes the state space concept and the complex domain fundamentals of the control systems unknown in previously published books by other authors.
- Addresses the knowledge and ability necessary to overcome the crucial lacunae of the existing control theory and drawbacks of its applications.
- Outlines new effective mathematical means for effective complete analysis and synthesis of the control systems.
- Upgrades, completes and broadens the control theory related to the classical self-contained control concepts: observability and controllability.
- Provides information necessary to create and teach advanced inherently upgraded control courses.
- Opens new research directions.

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### **4.7. Trackability and Tracking of General Linear Systems**

Contributed by: Lyubomir T. Gruyitch, [gruyitch.lyubomir.t@gmail.com](mailto:gruyitch.lyubomir.t@gmail.com)

#### TRACKABILITY AND TRACKING OF GENERAL LINEAR SYSTEMS

Lyubomir T. Gruyitch

CRC Press, Boca Raton, FL, 2018, 378 Pages, ISBN 9781138353374 - CAT# K395516d

#### Summary

Trackability and Tracking of General Linear Systems deals with five classes of the systems, three of which are new, begins with the definition of time together with a brief description of its crucial properties and with the principles of the physical uniqueness and continuity of physical variables. They are essential for the natural tracking control synthesis. The book presents further new results on the new compact, simple and elegant calculus that enabled the generalization of the transfer function matrix concept and of the state concept, the completion of the trackability and tracking concepts together with the proofs of the trackability and tracking criteria, as well as the natural tracking control synthesis for all five classes of the systems.

#### Features

- Crucially broadens the state space concept and the complex domain fundamentals of the dynamical systems to the control systems.
- Addresses the knowledge and ability necessary to study and design control systems that will satisfy the fundamental control goal.
- Outlines new effective mathematical means for effective complete analysis and synthesis of the control systems.
- Upgrades, completes and essentially generalizes the control theory beyond the existing boundaries.
- Provides information necessary to create and teach advanced inherently upgraded control courses.
- Opens new research directions.

## 5. Journals

### 5.1. Contents: Control Theory and Technology

Contributed by: Zou Tiefeng, [tfzou@scut.edu.cn](mailto:tfzou@scut.edu.cn)

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Control Theory and Technology

Vol. 16, No. 4, November 2018

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

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A special issue to mark the 10th Anniversary of the Passing of Prof. Jingqing Han, a scholar ahead of his time

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### 5.2. Contents: IET Control Theory & Applications

Contributed by: Alexandria Lipka, [alipka@theiet.org](mailto:alipka@theiet.org)

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Volume 12

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Contributed by: Li-Chen Fu, [lichen@ntu.edu.tw](mailto:lichen@ntu.edu.tw)

Asian Journal of Control

Vol.20, No.6 November, 2018

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#### **5.4. Contents: International Journal of Control, Automation, and Systems**

Contributed by: Keum-Shik Hong, [journal@ijcas.com](mailto:journal@ijcas.com)

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

ISSN: 1598-6446

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

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## 6. Conferences

### 6.1. IEEE Conference on Decision and Control: Call for Workshop Proposals

Contributed by: Ilya Kolmanovsky, [ilya@umich.edu](mailto:ilya@umich.edu)

Call for Workshop Proposals for the 58th IEEE Conference on Decision and Control in Nice, France, 2019

The 58th IEEE Conference on Decision and Control (2019) in Nice, France will offer full-day and half-day pre-conference workshops, addressing current and future topics in control systems from experts from academia, research institutes, and industry. Workshop proposals are invited on these topics.

Workshop proposals are due May 2, 2019.

A workshop proposal should focus on a specific theme related to the main conference topics, describing objectives and expected outcomes, including expected attendance. The workshop proposal should include the workshop presenters' short bio and contact information, and the list of speakers. Proposals should be submitted through PaperPlaza by the due date.

The workshops will be offered based on the selection by the organizing committee and viable attendance.

The 58th IEEE CDC reserves the right to cancel non-viable workshops. In the event of a cancellation, the workshop fees will be refunded in full.

For more information please contact Workshop Chair, Professor Ilya Kolmanovsky, [ilya@umich.edu](mailto:ilya@umich.edu) and/or visit

<http://cdc2019.ieeecss.org/workshops.php>

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## 6.2. SIAM Conference on Control and Its Applications

Contributed by: Maxwell Hayes, [Hayes@siam.org](mailto:Hayes@siam.org)

Conference Name:

SIAM Conference on Control and Its Applications (CT19)

Sponsored by the SIAM Activity Group on Control and Systems Theory (SIAG/CST)

Location:

Chengdu Cynn Hotel (also known as Xanadu Hotel)

Chengdu, China

Dates:

June 19-21, 2019

General Conference Chair:

Jiliu Zhou, Chengdu University of Information Technology, China

Conference Co-Chairs:

William Levine, University of Maryland, College Park, U.S.

Richard Stockbridge, University of Wisconsin-Milwaukee, U.S.

Organizing Committee:

Jean-Pierre Barbot, École Nationale Supérieure de l'Electronique et de ses Applications, France

Catherine Bonnet, Inria, France

Sören Christensen, University of Hamburg, Germany

Michael Demetriou, Worcester Polytechnic Institute, U.S.

Daniel Ho, City University of Hong Kong, China

Zengguang Hou, Chinese Academy of Science, China

Matthew James, Australian National University, Australia

Tao Li, East China Normal University, China

Hideo Nagai, Kansai University, Japan

Bozenna Pasik-Duncan, University of Kansas, U.S.

Shuenn-Jyi Sheu, National Central University, China

Amit Surana, United Technologies Research Center, U.S.

Shanjian Tang, Fudan University, China

Zhen Wu, Shandong University, China

The Call for Presentations for this conference is available at:

<http://siamct19.cuit.edu.cn/index.htm#promo>

#SIAMCT19

\*\*Deadlines\*\*

December 10, 2018: Minisymposium proposals

December 21, 2018: Travel Award

January 7, 2019: Abstracts for contributed and minisymposium speakers

January 7, 2019: Full Paper for Consideration in Proceedings (Conference participants have the option to submit a full paper for consideration in the conference proceedings.)

Please visit [http://siamct19.cuit.edu.cn/INFO\\_FOR\\_PARTICIPANTS/Submissions.htm](http://siamct19.cuit.edu.cn/INFO_FOR_PARTICIPANTS/Submissions.htm) for detailed submission information.

For additional information, contact [siamct19@cuit.edu.cn](mailto:siamct19@cuit.edu.cn).

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### **6.3. IFAC Conference on Cyber-Physical & Human Systems**

Contributed by: Yue Wang, [yue6@clemson.edu](mailto:yue6@clemson.edu)

#### **ANNOUNCEMENT**

The global controls community and the wider scientific community interested in the broad range of questions and implications emerging from the relationships between humans and technology are invited to participate in the Second IFAC Conference on Cyber-Physical & Human Systems (CPHS). Taking place in Miami just days before the 2018 Conference on Decision and Control (CDC), CPHS 2018 aims to bring together researchers and practitioners from academia and industry to share scientific and technological advances as well as gain a deeper understanding of the interactions between cyber-physical systems and humans. Of particular focus are human-centered technologies in a wide-range of applications including transportation, energy, robotics, manufacturing, and health-care.

Miami is a popular vacation spot, not only in the United States, but in the world! The Miami area offers multiple attractions for all. Conveniently located in Downtown Miami, the Hyatt Regency hotel captures the spirit of the city. With its striking white towers overlooking the Miami River, Hyatt Regency Miami is a landmark hotel offering first rate service. The hotel enjoys easy access to popular attractions such as Brickell City Center for world-class shopping, Wynwood Art District with galleries and museums, the Adrienne Arsht Center for the performing arts, Coral Gables with a Venetian Pool and botanical garden, and the Latin flavor of Little Havana. The hotel is a just a short 15-minute drive from South Beach. There's no better way to enjoy the Florida sunshine than with Hyatt Regency Miami as your home base.

The conference program, through a combination of paper and poster presentations, will showcase the interactions between cyber-physical systems and humans during December 14 and 15. Two plenary lectures – one by a prominent social scientist and the other by a roboticist – are featured. A panel exploring the interface between engineers and social-scientists, and a mini-workshop on transdisciplinary communication and collaboration have been arranged. A special session that showcases hardware and software demonstrations of current CPHS research is also included.

The IFAC CPHS Young Author Prize will be awarded to the best paper by a student author, and the CPHS Best Poster Prize to the best interactive presentation. Accepted papers will be published in the open-access IFAC-PapersOnLine series hosted on ScienceDirect (<http://www.sciencedirect.com/>).

Advance registration is now open and is highly recommended. All attendees must register. See the CPHS 2018 website for registration fees and other details.

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### **6.4. IFAC Workshop on Thermodynamic Foundation of Mathematical Systems Theory**

Contributed by: Nicolas Hudon, [nicolas.hudon@queensu.ca](mailto:nicolas.hudon@queensu.ca)

Call for Contribution

The 3rd IFAC Workshop on Thermodynamic Foundation of Mathematical Systems Theory  
July 3-5, 2019.

Universite catholique de Louvain, Louvain-la-Neuve, Belgium

Dear Colleagues,

The Organizing Committee has the pleasure to invite you to contribute and participate in the 3rd IFAC Workshop on Thermodynamic Foundation of Mathematical Systems Theory to be held in Louvain-la-Neuve, Belgium, on July 3-5, 2019.

TFMST is the triennial workshop of IFAC gathering researchers and practitioners interested in thermodynamics and systems theory. The aim of this workshop series is to explore connections between abstract systems theory and physical systems behaviour when they are dynamically constrained by conservation laws and exhibit dissipation related to maximization of entropy-like functions. Application domains may include but are not limited to: Energy efficient chemical processes or processes related to the production of smart materials at micro- or nano-scales; Biological phenomena from a cell (biochemical) level through tissue/organism behaviour up to the ecological interactions between organisms; Behaviour and control of particulate systems; Quantum control; and, Emergence of self-organizing behaviour in networks of interacting agents where collective dynamics emerge from the consensus among a large number of ensemble members. Applications would cover fields such as ecology, robotics or socio-economy and more generally Cyber-Physical Systems, and control of large scale networked systems, such as chemical plants, integrating financial systems and sociological systems

Three plenary talks will be presented by Massimiliano Esposito (University of Luxembourg), Christian Jallut (Universite Claude-Bernard Lyon 1), and Arjan van der Schaft (University of Groningen).

For more information, visit: <https://sites.uclouvain.be/tfmst2019/>

IMPORTANT DATES:

Submission opening 01 March 2018

Registration opening 01 May 2018

Deadline for submission of draft regular papers 15 February 2019

Authors notification 15 April 2019

Final Paper due 01 May 2019 (subjected to registration)

Final Program 01 June 2019

Workshop TFMST2019 03 to 05 July 2019

Best regards,

Nicolas Hudon, IPC Chair

Hector Ramirez, IPC Co-chair

Denis Dochain, NOC Chair

Jean-Charles Delvenne, NOC Co-chair

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## **6.5. International Conference on Unmanned Aircraft Systems**

Contributed by: Didier THEILLIOL, [didier.theilliol@univ-lorraine.fr](mailto:didier.theilliol@univ-lorraine.fr)

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



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

The 2019 International Conference on Unmanned Aircraft Systems, ICUAS'19, will be held on June 11-14, in the Atlanta Marriott Buckhead Hotel and Conference Center which is situated in a supreme location in the heart of Atlanta. June 11 will be a Workshop/Tutorial full-day, followed by a three-day technical Conference on June 12-14.

Judging from the interest ICUAS has drawn over the past years and its growth, ICUAS'19 is expected to continue on this path and attract the highest number of participants from academia, industry, federal and state agencies, government, the private sector, users, practitioners and engineers who wish to be affiliated with and contribute technically to this highly demanding and evolving and expanding field. ICUAS'19 is fully sponsored by the ICUAS Association, which is a non-profit organization. Information about the Association may be found at [www.icuas.com](http://www.icuas.com).

The major themes of ICUAS'19 will be: design for trusted and assured autonomy, metrics for autonomy, and design for resilience. These focus area topics are center-stage in the attempt to design and build high-confidence UAS/RPAS. In addition, ICUAS'19 will include a separate track on regulations, policy, legal and ethical issues that are essential to allow for integration of UAS/RPAS in the national airspace. National and international organizations, agencies, industry, military and civilian authorities are working towards defining roadmaps of UAS/RPAS expectations, technical requirements and standards that are prerequisite to their full utilization, as well as legal, policy and ethical issues. The next generation of UAS/RPAS is expected to be used for a wide spectrum of civilian and public domain applications. Challenges to be faced and overcome include, among others, see-and-avoid systems, robust and fault-tolerant flight control systems, payloads, communications, levels of autonomy, manned-unmanned swarms, network-controlled swarms, as well as challenges related to policies, procedures, regulations, safety, risk analysis assessment, airworthiness, certification issues, operational constraints, standardization and frequency management, all of paramount importance, which, coupled with 'smart', 'environmentally friendly' cutting edge technologies will pave the way towards full integration of UAS/RPAS with manned aviation and into the respective national airspace. ICUAS'19 aims at bringing together different groups of qualified military and civilian representatives worldwide, organization representatives, funding agencies, industry and academia, to discuss the current state of unmanned aviation advances, and the roadmap to their full utilization in civilian and public domains. Special emphasis will be given to research opportunities, and to 'what comes next' in terms of the essential technologies that need to be utilized to advance the state-of-the-art.

Conference topics include (but not limited to): Airspace Control; Integration; See/Sense-Detect-and-Avoid Systems; Airspace Management; Interoperability; Security; Airworthiness; Levels of Safety; Sensor Fusion; Autonomy; Manned/Unmanned Aviation; Smart Sensors; Biologically Inspired UAS; Micro- and Mini- UAS; Standardization; Certification; Networked UAS; Technology Challenges; Control Architectures; Payloads; Training; Energy Efficient UAS; Path Planning and Navigation; UAS Applications; Environmental Issues; Regulations; UAS Communications; Fail-Safe Systems; Reliability of UAS; UAS Testbeds; Frequency Management; Risk Analysis; UAS Transportation Management (UTM); Policy/Regulation/Law Aspects.

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

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

utilized in everyday life applications. .

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

February 12, 2019: Full Papers/ Invited Papers/Tutorial Proposals Due

April 15, 2019: Acceptance/Rejection Notification

May 10, 2019: Upload Final, Camera Ready Papers

April 15 - May 10, 2019: Early Registration

#### PAPER SUBMISSION

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

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

Workshops/Tutorials: Proposals for workshops/tutorials should contain title, the list of speakers, and extended summaries (2000 words) of their presentations. Proposals must be sent by e-mail to the Tutorial/Workshop Chair by February 12, 2019.

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

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

Welcome and look forward to receiving your contributions and attendance to the ICUAS'19! For information about the ICUAS Association, Inc., see [www.icuas.com](http://www.icuas.com).

#### ICUAS ASSOCIATION LIAISON

Kimon P. Valavanis, U of Denver, [kimon.valavanis@du.edu](mailto:kimon.valavanis@du.edu)

#### GENERAL CHAIRS

Didier Theilliol, U of Lorraine, [Didier.theilliol@univ-lorraine.fr](mailto:Didier.theilliol@univ-lorraine.fr)

YangQuan Chen, UC Merced, [yangquan.chen@ucmerced.edu](mailto:yangquan.chen@ucmerced.edu)

#### PROGRAM CHAIRS

James Morrison, KAIST, Korea, [james.morrison@kaist.edu](mailto:james.morrison@kaist.edu)

Antonios Tsourdos, Cranfield Univ., [a.tsourdos@cranfield.ac.uk](mailto:a.tsourdos@cranfield.ac.uk)

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## 6.6. International Conference on Control, Automation and Systems

Contributed by: Zee Yeon Lee, [conference@icross.org](mailto: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](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)

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## 6.7. International Conference on Control and Fault-Tolerant Systems

Contributed by: Christophe Aubrun, [christophe.aubrun@univ-lorraine.fr](mailto:christophe.aubrun@univ-lorraine.fr)

Christophe Aubrun, [christophe.aubrun@univ-lorraine.fr](mailto:christophe.aubrun@univ-lorraine.fr)

The 4th International Conference on Control and Fault-Tolerant Systems, SysTol'19 will be held from September 18-20, 2019 in Casablanca, Morocco.

Important dates

- Submission of draft papers: March 25th, 2019
- Notification of acceptance: June 10th, 2019
- Final version due: July 15th, 2019

Please visit our website <http://www.systol.org/systol19/> for more information.

Systol'19 is an IEEE co-sponsored international congress providing an open forum to academics, engineers and practitioners active in the fields of fault diagnosis, fault tolerant control and their application in process monitoring and maintenance. The conference main aims are:

- to show case current research results and recent developments of intelligent techniques;
- to present practical applications and emphasize open problems;
- to provide a forum for industry to signal its needs and priorities.

The three previous editions of the International Conference on Control and Fault-Tolerant Systems (Systol'10, Systol'13 and SysTol'16) were a success and demonstrated the demand for establishing a permanent scientific forum in the general area of system monitoring, fault diagnosis and fault-tolerant control. The fourth conference on Control and Fault-Tolerant Systems (SysTol'19), through its technical program, will provide a unique opportunity for the academic and industrial community to formulate new challenges, share solutions and discuss future research directions.

Honorary Chair

Józef KORBICZ: University of Zielona Góra, Poland

General Chairs

- Kamal DAISSAOUI: Ecole Marocaine des Sciences de l'Ingénieur, Morocco
- Dominique SAUTER: Université de Lorraine, France

Program Chairs

- Alessandro CASAVOLA: Università della Calabria, Italy
- Didier MAQUIN: Université de Lorraine, France

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## **6.8. International Conference on Methods and Models in Automation and Robotics**

Contributed by: Pawel Dworak, [pawel.dworak@zut.edu.pl](mailto:pawel.dworak@zut.edu.pl)

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

26-29 August 2019

Amber Baltic Hotel, Miedzyzdroje, Poland

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

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

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

The participants of the 24th International MMAR Conference will have the opportunity to take part in the wide spectrum of categories for technical presentations, including plenary lectures, regular papers of both lecture and poster session types, and panel discussion. We look forward to seeing our old and new friends in Poland. You are kindly invited to participate in the 24th International MMAR Conference in Miedzyzdroje, Poland.

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

## Key Dates

March 4, 2019 - Paper submission

May 20, 2019 - Notification of acceptance

June 24, 2019 - Registration

June 24, 2019 - Camera-ready paper submission

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

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## 6.9. Crowds: models and control

Contributed by: Rossi Francesco, [francesco.rossi@math.unipd.it](mailto:francesco.rossi@math.unipd.it)

Call for presentations and posters

====Crowds: models and control====

CIRM Marseille, 3-7 June, 2019

<https://crowds2019.sciencesconf.org/>

====Conference aims====

Modeling crowds composed of a large number of interacting agents has been an extremely challenging problem for the mathematical community. This led to the development of several key mathematical theories, catching different aspects of crowds, ranging from mean-field limits for interacting particles, to hyperbolic systems for road traffic models, to dynamics on graphs and networks, to stochastic models, and to adapted numerical methods.

The conference aims to gather together different communities working on two connected problems for crowds.

On one side, modeling crowds keeps being a stimulating issue, in particular for understanding the phenomenon of self-organization: how can a set of simple one-to-one interactions between agents produce macroscopic patterns, such as lines, swarms and flocks? Several mathematical communities have proposed different tools for modeling crowds, such as microscopic and macroscopic models, stochastic approaches, mean-field games or conservation laws.

On the other side, the control of crowds is of paramount interest: how can an external control enforce a desired behavior to the crowd? In particular, how to drive a crowd towards an efficient macroscopic pattern, such as lines for egress problems? The control community has proposed a large spectrum of methods, such as control on graphs, numerical methods for optimization of conservation laws, control of the continuity equation.

The two aspects of proper modeling and efficient control are then intimately connected. For this reason, the conference aims to strengthen connections between researchers in modeling and control of crowds.

====Invited speakers====

Yves Achdou (Université Paris-Diderot)

Stefania Bandini (University of Milan-Bicocca)

Alethea Barbaro (Case Western Reserve University)

Martino Bardi (University of Padova)

Andrea Bertozzi (University of California Los Angeles)

Pierre Cardaliaguet (Université Paris-Dauphine)

José Antonio Carrillo de la Plata (Imperial College London)

Winnie Daamen (TU Delft)

Pierre Degond (Imperial College London)

Marco Di Francesco (University of L'Aquila)  
Magnus Egerstedt (Georgia Institute of Technology) (to be confirmed)  
Massimo Fornasier (Technical University of Munich)  
Simone Göttlich (University of Mannheim)  
Michael Herty (RWTH Aachen University)  
Roland Malhamé (Polytechnique Montréal)  
Bertrand Maury (Université Paris-Sud)  
Sean Meyn (University of Florida)  
Angelia Nedich (Arizona State University)  
Filippo Santambrogio (Université Paris-Sud)  
Andreas Schadschneider (University of Cologne)  
Armin Seyfried (Forschungszentrum Jülich)  
Daniela Tonon (Université Paris Dauphine)  
Claudia Totzeck (TU Kaiserslautern)

====Call for presentations and posters====

We welcome presentations by researchers in the topics of the conference.

This conference aims to gather scientists working on crowds both from the modeling point of view and from the control point of view. Contributions from both communities are then very welcome.

If you are interested in delivering a talk, please submit an abstract (200-400 words).

We warmly encourage Ph.D. students and early-stage researchers to apply for this opportunity.

A limited amount of free housings at the CIRM are available for speakers. See guidelines below.

We also organize a poster session on topics of the conference.

Please submit an abstract (200-400 words) on the website of the conference.

Again, we warmly encourage Ph.D. students and early-stage researchers to apply for this opportunity.

====Registration and housing fees====

Registration is free but mandatory.

For housing at CIRM Marseille, see: <https://www.cirm-math.com/prices.html>

====Scientific Committee====

Peter E. Caines (McGill University)  
Paola Goatin (INRIA Sophia Antipolis - Méditerranée)  
Serge Hoogendoorn (TU Delft)  
Naomi Leonard (Princeton University)  
Emmanuel Trélat (Sorbonne Université)

====Organizing Committee====

Alessandro Giua (University of Cagliari)  
Morgan Morancey (Aix-Marseille Université)  
Benedetto Piccoli (Rutgers University-Camden)  
Francesco Rossi (University of Padova)  
Marie-Thérèse Wolfram (University of Warwick)

====Poster====

Download the conference poster here:

[https://crowds2019.sciencesconf.org/data/pages/crowds\\_poster.jpg](https://crowds2019.sciencesconf.org/data/pages/crowds_poster.jpg)

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## 6.10. Southwest Robotics Symposium

Contributed by: Theodore Pavlic, [tpavlic@asu.edu](mailto:tpavlic@asu.edu)

2019 Southwest Robotics Symposium (free symposium; registration required)

Abstracts due: December 10, 2018

Symposium: January 24 and 25, 2019

You are invited to attend the 2019 Southwest Robotics Symposium (<https://swrobotics.engineering.asu.edu/>) hosted by Arizona State University on January 24th and 25th, 2019, on the ASU Tempe campus, in Tempe, AZ. This 2-day event will include 5 sessions, posters, lab tours, and industry demos. Each session is focused on high-impact topics related to robotics and automation and will host talks from renowned researchers to discuss the state-of-the-art and future directions. The topics include:

- \* Multi-robot Systems
- \* Bio-inspired Robotics
- \* Robot Learning and AI
- \* Autonomous Robotic Vehicles and Planning
- \* Human–Robot Interaction

The free event will also include a wide range of distinguished speakers in robotics, including a plenary by Professor and NAE Member Oussama Khatib. For more information about the event, the agenda, and the current list of speakers, please visit:

<https://swrobotics.engineering.asu.edu/>

The event is open to researchers in the fields of robotics, automation, control and related fields, students in the fields of engineering, medicine and nursing, industry and technology investors, and the general public. The event is free; however, registration is required for admittance to the symposium. Please register at: <https://swrobotics.engineering.asu.edu/2019-registration/>

If you are interested in presenting a poster at the event, please see submission details at:

<https://form.jotform.com/82608206947160>

Poster abstract submissions are due by December 10th, 2018. Selected posters will be given 3 minutes each for oral (pitch) presentation during the event.

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#SWRS2019 QUICK REFERENCE:

- \*) Symposium (January 24 and 25, 2019): <https://swrobotics.engineering.asu.edu/>
- \*) Speakers: <https://swrobotics.engineering.asu.edu/2019-speakers/>
- \*) Abstract submission (due December 10, 2018): <https://form.jotform.com/82608206947160>
- \*) Registration (required): <https://swrobotics.engineering.asu.edu/2019-registration/>

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To learn more about Robotics at ASU: <https://robotics.asu.edu/>

Best regards,

Chairs of the 2019 Southwest Robotics Symposium Organizing Committee  
(via Ted Pavlic, [tpavlic@asu.edu](mailto:tpavlic@asu.edu), publicity chair)

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## 6.11. Mediterranean Conference on Control and Automation

Contributed by: Daniel Zelazo, [dzelazo@technion.ac.il](mailto:dzelazo@technion.ac.il)

27th Mediterranean Conference on Control & Automation

July 1 - 4, 2019 Akko, Israel

<https://med19.net.technion.ac.il>

**\*\*Call for papers\*\***

(<https://med19.net.technion.ac.il/files/2018/05/CFP-MED19.pdf>)

Dear Friends and Colleagues,

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

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

#### KEYNOTE SPEAKERS

Amnon Shashua, co-founder, President, and CEO of Mobileye

Martina Maggio, Lund University

Florian Dörfler, ETH

#### IMPORTANT DATES

22 January 2019: Contributed papers, invited sessions, and tutorial proposals are due.

18 April 2019: Notification of acceptance/rejection.

15 May 2019: Final submissions due.

Please visit the conference website (<https://med19.net.technion.ac.il>) for up-to-date details on all conference activities and submission instructions.

We look forward to your submissions and participation!

Best,

Daniel Zelazo

Publicity Chair

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#### **6.12. International Symposium on Autonomous Systems**

Contributed by: Youmin Zhang, [Youmin.Zhang@concordia.ca](mailto:Youmin.Zhang@concordia.ca)

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

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



The 3rd International Symposium on Autonomous Systems, ISAS 2019, will be held in Shanghai, China, during May 29-31, 2019. The conference is organized by Chongqing University, Shanghai Jiao Tong University, China, Star Institute for Intelligent Systems, China, University of Texas at Arlington, USA, and technically co-sponsored by IEEE Computational Intelligence Society, Technical Committee on Reliable Control Systems, Chinese Association of Automation, State Key Laboratory of Synthetical Automation for Process Industries, Northeastern University, China, and Key Laboratory of System Control and Information Processing, Ministry of Education of China.

ISAS focuses on both theory and applications mainly covering the topics of artificial intelligence, control, automation, robotics and autonomous systems. In addition to the technical sessions, there will be invited sessions, panel sessions and keynote addresses.

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

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

Keynote Speeches

Professor Jie Chen, Tongji University

Professor Jie Huang, The Chinese University of Hong Kong

Professor Marios Polycarpou, University of Cyprus

Professor Jose Principe, University of Florida

Important Dates (Please check the latest information at [www.isas.cqu.edu.cn](http://www.isas.cqu.edu.cn))

January 10, 2019: Deadline for Invited Session Proposals

January 10, 2019: Deadline for Full Paper Submission

February 28, 2019: Notification of Acceptance/Rejection

March 15, 2019: Deadline for Camera Ready Manuscript Submission

March 15, 2019: Deadline for Advance Registration

Welcome and look forward to receiving your contributions and attendance to the ISAS 2019!

STEERING COMMITTEE:

Frank L. Lewis, University of Texas at Arlington, USA

Hailong Pei, South China University of Technology, China

Yongduan Song, Chongqing University, China

Ning Li, Shanghai Jiao Tong University, China

Kimon P. Valavanis, Denver University, USA

Youmin Zhang, Concordia University, Canada

Tianyou Chai, Northeastern University, China

HONORARY CHAIR:

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

GENERAL CHAIRS:

Yongduan Song, Chongqing University, ydsong@cqu.edu.cn

Xinping Guan, Shanghai Jiao Tong University, xpguan@sjtu.edu.cn

PROGRAM CHAIRS:

Changyun Wen, Nanyang technological University, ecywen@ntu.edu.sg

Cailian Chen, Shanghai Jiao Tong University, cailianchen@sjtu.edu.cn

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### 6.13. Quantum Science, Engineering and Technology Conference

Contributed by: Daoyi Dong, [daoyidong@gmail.com](mailto:daoyidong@gmail.com)

#### 1ST Quantum Science, Engineering and Technology Conference

The Quantum Science, Engineering and Technology Conference (qSET) aims to bring together leading experts and students in the fields of quantum science, engineering and technology to present their best research and share their knowledge, in the form of plenary talks, keynote talks, invited talks, posters and pre-conference workshops.

The conference covers a broad range of topics within quantum science and technology, including quantum computation, quantum communication, quantum control, quantum engineering, quantum sensing, quantum simulation and quantum navigation.

The first conference will take place in Canberra, Australia, 8-11 April 2019. Attendees are strongly encouraged to complete their registration at their earliest convenience. Participants are welcome to submit poster abstracts for reviewing and are also welcome to organize half-day or one-day pre-conference workshops (on 8 April 2019).

This site will be regularly updated. For all enquiries please contact local qSET 2019 organizers.

Email: [qset2019@gmail.com](mailto:qset2019@gmail.com)

#### Organising Committee

A/Prof Daoyi Dong (General Chair), UNSW Canberra, Email: [d.dong@unsw.edu.au](mailto:d.dong@unsw.edu.au)

Prof Ian Petersen (General Co-Chair), Australian National University, Email: [ian.petersen@anu.edu.au](mailto:ian.petersen@anu.edu.au)

Prof John Close (General Co-Chair), Australian National University, Email: [John.Close@anu.edu.au](mailto:John.Close@anu.edu.au)

Dr Hidehiro Yonezawa (Local Organising Committee Chair), ARC Centre of Excellence for Quantum Computation and Communication Technology, UNSW Canberra, Email: [h.yonezawa@unsw.edu.au](mailto:h.yonezawa@unsw.edu.au)

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#### **6.14. IEEE Colombian Conference on Automatic Control**

Contributed by: Jhon Isaza, [jhonisaza@itm.edu.co](mailto:jhonisaza@itm.edu.co)

First Call for Papers

4th IEEE Colombian Conference on Automatic Control 2019

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

Applied control for industrial and non-industrial areas, applied control for robots, hybrid systems, intelligent control, mechatronics, mobile robots, modeling of dynamic systems, multi-robot systems, control of power systems, process control and automation, process optimization, sensing and sensor fusion, system identification, systems and signals, control of biological systems and biochemical processes.

Important Dates:

- Paper submission deadline: (March 17 2019) April 1 2019
- Paper decision notification: June 03 2019
- Camera-ready final manuscripts: July 15 2019

Paper submission: The program committee invites you to submit 4 to 6 pages long papers in English through [www.ieeeccac2019.com](http://www.ieeeccac2019.com).

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

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

Contact: Additional details and Conference updates are available at: [www.ieeeccac2019.com](http://www.ieeeccac2019.com)

Inquiries about the conference may be addressed to: [contact@ieeeccac2019.com](mailto:contact@ieeeccac2019.com)

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#### **6.15. International Conference on Differential Equations and Control Problems: Modeling, Analysis and Computations**

Contributed by: Tushar Jain, [tushar@iitmandi.ac.in](mailto:tushar@iitmandi.ac.in)

International Conference on Differential Equations and Control Problems: Modeling, Analysis and Computations (ICDECP19)

<http://iitmandi.ac.in/icdec19/>

Indian Institute of Technology, Mandi, Himachal Pradesh, India 17-19 June, 2019

The technological advances require a deep understanding of physical processes in engineering and science. A variety of such physical processes can be modelled as differential equations or control problems, and understood by the analysis and computations of their solution. The International Conference on Differential Equations and Control Problems – Modelling, Analysis and Computations (ICDECP19) which will be held at Indian Institute of Technology Mandi ([www.iitmandi.ac.in](http://www.iitmandi.ac.in)), H.P. India during June 17-19, 2019 is an interdisciplinary combined event and this event will provide a common forum where young applied mathematicians and engineers can learn mathematics for Differential Equations and Control Problems, and further they can exchange research ideas involving theoretical and applied developments in differential equations, control problems and computation. The objective of the conference is to bring together scientists, engineers and mathematicians working in theory, modeling and computation of differential equations, control problems and its applications. It aims, in particular, at fostering cooperation among practitioners and theoreticians in this field. Some of the focus areas included, but are not limited to:

- A Qualitative Study of Abstract Differential Equations
- Analytical and numerical methods for ODEs and PDEs
- Scientific Computing
- Optimal Control and Controllability of Differential Equations
- Fuzzy and Stochastic Differential Equations
- Dynamical Systems and other Related Areas
- Computational Fluid Dynamics
- Nonlinear Analysis
- Applications of Differential Equations in Engineering
- Modeling and Analysis of Biological Systems
- Model-based Predictive Control and Its Applications
- Differential Algebraic Systems
- Special Functions
- Fractional Calculus
- Inverse Problems

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## **6.16. International Conference on Cyber-Physical Systems**

Contributed by: Jana Tumova, [tumova@kth.se](mailto:tumova@kth.se)

ICCPS 2019 Call for WiP Abstracts, Demos, and Posters

ICCPS 2019 seeks high-quality technical abstracts, demos, and posters describing work-in-progress in the area of cyber-physical systems (CPS), including preliminary work on theory, platform design and implementation, verification and validation, empirical case studies, and other work that has potential to advance the state of the art in CPS. Authors of each accepted abstract will give a brief presentation at the WiP session, and may also give a demo and/or have a poster afterward.

Focus Areas:

ICCPS 2019 work-in-progress abstracts, demos, and posters should focus on the same areas of the main conference. Please refer to ICCPS 2019 CFP link (<http://iccps.acm.org/2019/ICCPS19-CFP.pdf>) for details. Both theory and applications related works are encouraged.

#### Abstract Submissions:

All submitted abstracts must be in English and must be in a single PDF file following the same guidelines as ICCPS 2019 (<http://iccps.acm.org/2019/?q=Submissions>). Abstract manuscripts should have a main body with no more than 2 pages (including references). They will be evaluated based on the technical merit and innovation as well as their potential to stimulate interesting discussions and exchanges of ideas at the conference. Both academic and industrial submissions are encouraged. All accepted abstracts will be published the ICCPS 2019 proceedings. Submissions must be attached to an email sent by 23:59pm GMT-12 on Thursday – Jan 24, 2019 (FIRM) to the ICCPS 2019 Demo and WiP Chair James Weimer ([weimerj@seas.upenn.edu](mailto:weimerj@seas.upenn.edu)) with the exact subject line: ICCPS 2019 WiP submission.

#### Posters and Demos:

In addition to giving a brief presentation of the work, each accepted abstract will have the option of giving a demo or having a poster (or neither or both). The poster and demo session will provide a forum for researchers to showcase ongoing work and obtain feedback from the CPS community, in addition to the discussions at the WiP presentation session. Authors wishing to give demos should clearly describe in their abstract what will be demonstrated and how the contributions will be illustrated interactively. If a demonstration requires wireless connectivity or other special arrangements (in addition to a table and power which will be provided to all demos), please describe them clearly in the abstract as well. Authors wish to have a poster should also mention that in the abstract, along with a brief summary of what the poster will show.

#### Important Dates:

Submission deadline – Jan 24, 2019 at 23:59 GMT-12

Acceptance notification – Feb 7, 2019

Final version submission – Feb 14, 2019

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### **6.17. International Conference on Process Control**

Contributed by: Michal Kvasnica, [michal.kvasnica@stuba.sk](mailto:michal.kvasnica@stuba.sk)

The 22nd International Conference on Process Control, technically sponsored by IEEE CSS Process Control TC and by a National member organisation of IFAC, will take place between June 11 and 14, 2019 at Strbske Pleso, High Tatras, Slovakia. Accepted papers will be submitted to the IEEE-Xplore digital library.

Situated on the border between Slovakia and Poland, High Tatras is one of the most impressive national parks in the Slovakia. It is a home to a wide variety of wildlife. Many kilometres of well marked pathways can be explored ranging from easy to extremely difficult. Strbske pleso is a renowned place for its summer and winter sport activities.

The objective of the conference is to bring together theoretical experts and control systems specialists, to evaluate new possibilities of techniques, design procedures and instruments in process control projects. Papers for presentation may range from theoretically rigorous research works to industrial applications.

The conference will feature plenary lectures delivered by prof. Sebastian Engell (TU Dortmund) and by prof. Denis Dochain (UCLouvain). In addition, a tutorial workshop on Nonlinear Model Predictive Control and its applications will take place during the conference.

#### Important dates:

January 31, 2019: Deadline for submission of full papers

April 1, 2019: Notification of acceptance

May 2, 2019: Final paper submission

June 11-14, 2019: Conference

More information can be found on the conference website:

<https://www.uiam.sk/pc19>

The conference accepts two types of submissions – full papers and abstract-only contributions. For full papers, authors have the option to select a preference for presentation format (talk or poster), although the organizers will make a final decision based on an effective overall programme design. Accepted full papers will be submitted to the IEEEExplore website.

The registration fee is 380 EUR (280 EUR for PhD students, 10% reduction for IEEE members) and includes participation at the conference and exhibitions, conference proceedings, and banquet. Accommodation at the conference hotel and full board during the duration of the conference can be booked at a reduced rate of 70 EUR/night.

We are looking forward to meeting you at the conference next year!

Michal Kvasnica, NOC Chairman

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### **6.18. CDC Workshop on “Traffic Flow Control via PDE Techniques”**

Contributed by: Nikolaos Bekiaris-Liberis, [nikos.bekiaris@dssl.tuc.gr](mailto:nikos.bekiaris@dssl.tuc.gr)

CDC 2018 Workshop on “Traffic Flow Control via PDE Techniques”

The workshop will cover the subjects of (vehicular) traffic flow control and estimation as well as traffic flow dynamics modelling for control and estimation, with particular emphasis on PDE-based techniques. Both methodological and practical aspects will be addressed.

Speakers:

Miroslav Krstic, University of California, San Diego, USA.

Christophe Prieur, CNRS, France.

Iasson Karafyllis, National Technical University of Athens, Greece.

Christian Claudel, University of Texas at Austin, USA.

Maria Laura Delle Monache, Inria, France.

Benedetto Piccoli, Rutgers University, USA.

Paola Goatin, Inria, France.

Gabor Orosz, University of Michigan, Ann Arbor, USA.

Nikolaos Bekiaris-Liberis, Technical University of Crete, Greece.

Organizers:

Nikolaos Bekiaris-Liberis, Technical University of Crete, Greece.

Maria Laura Delle Monache, INRIA Grenoble-Rhone Alpes, France.

Delphine Bresch-Pietri, MINES ParisTech, France.

Rafael Vazquez, University of Seville, Spain.

Registration is available at a rate of 170 USD (85 USD for students) via <https://cdc2018.ieeecss.org/registration.php>

For more details follow the link [http://users.isc.tuc.gr/~nlimperis/Workshop\\_CDC\\_2018.html](http://users.isc.tuc.gr/~nlimperis/Workshop_CDC_2018.html)

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### **6.19. CDC Workshop on “Learning for Control”**

Contributed by: Konstantinos Gatsis, [kgatsis@seas.upenn.edu](mailto:kgatsis@seas.upenn.edu)

Workshop on Learning for Control, 57th IEEE Conference on Decision and Control, Miami Beach, Florida, December 16, 2018

Over the past two decades, advances in computing and communications have resulted in the creation, transmission and storage of data from all sectors of society. Over the next decade, the biggest generator of data is expected to be Internet-of-Things devices which sense and control the physical world. This explosion of data that is emerging from the physical world requires a rapprochement of areas such as machine learning, control theory, and optimization. The availability and scale of data, both temporal and spatial, brings a wonderful opportunity for our community to both advance the theory of control systems in a more data-driven fashion, as well as have a broader industrial and societal impact. The goals of our workshop are:

- Present state-of-the-art results in the theory and application of Learning for Control, including topics such as statistical learning for control, reinforcement learning for control, online and safe learning for control
- Bring together some of the leading researchers across the fields in order to promote cross-fertilization of results, tools, and ideas, and stimulate further progress in the area
- Attract new researchers in these exciting problems, creating a larger yet focused community that thinks rigorously across the disciplines and asks new questions

#### KEYNOTE SPEAKER

Michael I. Jordan, University of California, Berkeley

#### INVITED SPEAKERS

Dimitri P. Bertsekas, Massachusetts Institute of Technology

Francesco Borrelli, University of California, Berkeley

Giuseppe Carlo Calafiore, Politecnico di Torino

Maryam Fazel, University of Washington

Mahyar Fazlyab, University of Pennsylvania

Frank L. Lewis, University of Texas at Arlington

Benjamin Recht, University of California, Berkeley

Angela Schoellig, University of Toronto

Claire J. Tomlin, University of California, Berkeley

Rene Vidal, Johns Hopkins University

#### ORGANIZERS

Konstantinos Gatsis, University of Pennsylvania

Pramod P. Khargonekar, University of California, Irvine

Manfred Morari, University of Pennsylvania

George J. Pappas, University of Pennsylvania

The workshop will take place on Sunday December 16, 2018 during the 57th IEEE Conference on Decision and Control at the Fontainebleau in Miami Beach, FL, USA. Please note that only people who have registered for the conference can register for the workshop.

Registration link:

<https://cdc2018.ieeecss.org/registration.php>

Workshop website:

[https://kgatsis.github.io/learning\\_for\\_control\\_workshop\\_CDC2018/](https://kgatsis.github.io/learning_for_control_workshop_CDC2018/)

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## 7. Positions

### 7.1. PhD: University of Louisiana at Lafayette, USA

Contributed by: Afef Fekih, [afef.fekih@louisiana.edu](mailto:afef.fekih@louisiana.edu)

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

Applicants shall have a Master's degree or equivalent in systems and controls, power systems, electrical engineering, mechanical engineering, applied Math or a related discipline. The PhD student is expected to carry out original research and complete coursework throughout the period of appointment. Results will be communicated in the form of journal publications, conference presentations, and the PhD dissertation.

The funding covers the cost of full tuition and stipends at a competitive rate and will start in Fall 2019.

Interested individuals should send their detailed curriculum vitae, copies of their recent transcripts, a copy of their best publication in English, and if applicable GRE/test scores to Dr. Afef Fekih ([afef.fekih@louisiana.edu](mailto:afef.fekih@louisiana.edu)).

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### 7.2. PhD: Wayne State University, USA

Contributed by: Azad Ghaffari, [aghaffari@wayne.edu](mailto:aghaffari@wayne.edu)

One funded Ph.D. position is available in the Department of Mechanical Engineering at Wayne State University starting August 2019. The position is focused on developing control algorithms for safety-critical cyber-physical systems, and supervisory control design over smart networks. The ideal candidate will have a master's degree in Electrical, Mechanical, or Computer Engineering (or other closely related fields) with a focus on control systems and optimization. Candidates with a bachelor's degree who have a strong academic record will also be considered. Preferred programming skills include MATLAB, Simulink, LabVIEW, Altium Designer (or EAGLE), SolidWorks, and C/C++. A good understanding of embedded system design and a keen interest to develop hardware-in-the-loop simulations and familiarity with fast prototyping techniques are desirable. Please note that along with research duties the candidate has to satisfy the department's course requirement to advance to Ph.D. candidacy. The course requirement depends on the academic history of the candidates and their type of degree. The research will be conducted in Dr. Ghaffari's lab in the Department of Mechanical Engineering. For more information about Dr. Ghaffari's research, please refer to his Google Scholar page at <https://goo.gl/X4rjNq>.

Interested candidates, please send a copy of your recent CV to [aghaffari@wayne.edu](mailto:aghaffari@wayne.edu). In the body of your email, briefly highlight your skill set relevant to the announced position and future research and education plans. Review of applications will begin immediately.

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### 7.3. PhD: University of Edinburgh, UK

Contributed by: Diego Oyarzun, [d.oyarzun@ed.ac.uk](mailto:d.oyarzun@ed.ac.uk)



We are advertising several PhD studentships in the group of Dr Diego Oyarzún at the University of Edinburgh. We have various topics at the interface of control theory, systems & synthetic biology. Interested applicants should contact [d.oyarzun@ed.ac.uk](mailto:d.oyarzun@ed.ac.uk) attaching a CV, or apply directly through one of the following links:

- 1) <https://www.findaphd.com/search/ProjectDetails.aspx?PJID=101066>
- 2) <https://www.findaphd.com/search/ProjectDetails.aspx?PJID=101068>
- 3) <https://www.findaphd.com/search/ProjectDetails.aspx?PJID=101067>

More information at <http://www.imperial.ac.uk/people/d.oyarzun>

Application deadline is 13 December 2018.

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#### **7.4. PhD: L2S of CentraleSupélec, France**

Contributed by: Sorin Oлару, [sorin.olaru@centralesupelec.fr](mailto:sorin.olaru@centralesupelec.fr)

One PhD Position in “(Embedded) identification methods for predictive maintenance and anomaly detection on high speed machines with magnetic bearings”

KEYWORDS : detection and identification, predictive maintenance, Active Magnetic Bearings

SHORT DESCRIPTION: The thesis goal is to provide predictive maintenance methodological solutions in the context of AMB (Active Magnetic Bearings) control of rotor dynamics. The project is carried out in an industrial and economic framework led by S2M (SKF Magnetic Mechatronics) and end-users of high-speed magnetic bearing machines (with an immediate objective of anticipating breakdown and / or material degradation). The academic supervision of the research project is done within L2S (Laboratory of Signals and Systems) of CentraleSupélec in Gif-sur-Yvette, France.

APPLICATION: Please send your application including a motivation letter, a curriculum vitae, a list of courses with grades, and contact information for two academic references to Prof. Sorin Oлару ([sorin.olaru@centralesupelec.fr](mailto:sorin.olaru@centralesupelec.fr)). He can also be contacted for more information about this vacancy (see also [https://www.adum.fr/as/ed/voirproposition.pl?matricule\\_prop=22255](https://www.adum.fr/as/ed/voirproposition.pl?matricule_prop=22255) ). The deadline for ensuring full consideration of an application is December 31, 2018, but the position will remain open until filled.

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#### **7.5. PhD: EPFL, Switzerland**

Contributed by: Giancarlo Ferrari Trecate, [giancarlo.ferraritrecate@epfl.ch](mailto:giancarlo.ferraritrecate@epfl.ch)

A PhD position is available at the Automatic Control Laboratory of EPFL (Switzerland) in the broad area of data-based control and learning.

Students with a solid methodological background and passionate of research on theory and algorithms are encouraged to apply. The student will work in a collaborative environment and will learn how to exploit pervasive sensing technologies (such as the Internet of Things) for the design of innovative modeling and control approaches for cyberphysical systems.

Qualifications:

- a Master degree from a recognized University
- a strong background in Systems and Control and/or Machine Learning
- creativity and motivation
- excellent English language skills

Application procedure: prospective PhD students must apply to a doctoral program before starting their PhD at EPFL, see <http://phd.epfl.ch/prospective>.

For the doctoral program on Electrical Engineering (EDEE), application deadlines are December 15th, April 30th, and September 15th.

For the doctoral program on Robotics, Control, and Intelligent Systems (EDRS), application deadlines are January 15th, April 30th, and September 15th.

Fill in the form provided by the doctoral program and indicate your intention to apply to Prof. Giancarlo Ferrari Trecate. Then, email the completed application package to Prof. Ferrari Trecate indicating your interest in the project.

Starting date: any time from January 2019. The call will remain open until an ideal candidate will be found.

EPFL is a top technical university, ranked 12th in the world (2018). The successful candidate can expect a gross salary starting at 51100 CHF, together with other benefits, depending on civil status.

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## **7.6. PhD: Delft University of Technology, The Netherlands**

Contributed by: Giulia Giordano, [g.giordano@tudelft.nl](mailto:g.giordano@tudelft.nl)

PhD position: Delft University of Technology, The Netherlands.

Topic: Complex Dynamical Networks

Delft Center for Systems and Control (DCSC), Delft University of Technology, The Netherlands.

We are looking for a talented, motivated and outstanding Ph.D. candidate with enthusiasm for interdisciplinary research challenges at the interface of System Theory, Automatic Control, Optimisation, Systems Biology.

The following qualifications are needed:

- M.Sc. degree (or close to completion) in Systems and Control, Applied Mathematics, Electrical or Mechanical Engineering, or a related field.
- Theoretical background and strong mathematical skills, along with ability and interest to work at the intersection of several research domains.
- Good programming skills (e.g., in Matlab).
- Very good command of the English language and communication skills (knowledge of Dutch is not required).

– Description:

The position is supported by the Delft Technology Fellowship.

The candidate will conduct fundamental theoretical and algorithmic research on complex dynamical networks, with applications either to multi-agent systems in engineering or to systems biology.

Expertise in networked dynamical systems, decentralised/distributed control or systems biology is highly appreciated.

Creative thinking and curiosity are encouraged.

– Conditions of employment:

The appointment will be for 4 years. The PhD student will participate in the training and research activities of the TU Delft Graduate School and of the Dutch Institute of Systems and Control (DISC). As an employee of TU Delft, the PhD student will receive a competitive salary and benefits in accordance with the Collective Labour Agreement for Dutch Universities (CAO). The TU Delft offers a customisable compensation package,

a discount for health insurance and sport memberships. An International Children's Centre offers childcare and an international primary school. Assistance with accommodation can be arranged.

– How to apply:

Applications or inquires shall be emailed to Dr. Giulia Giordano ([g.giordano@tudelft.nl](mailto:g.giordano@tudelft.nl)).

IMPORTANT: When applying, please include in the subject of your email the text: "DTF PhD application".

An application dossier consists of the following documents:

- detailed curriculum vitae and list of publications;
- a brief statement of motivation and research interests (up to 1 page);
- academic transcripts of all the exams taken and all the obtained degrees (in English);
- names and contact information of up to three references (e.g., project/thesis supervisors);
- up to three research-oriented documents (e.g., thesis, conference/journal publications).

The starting date is flexible, but ideally would be January-February 2019.

The call for applications will remain open until the ideal candidate is found. However, for full consideration please apply within January 6, 2019.

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### **7.7. PhD: Stevens Institute of Technology, USA**

Contributed by: Yi Guo, [yguo1@stevens.edu](mailto:yguo1@stevens.edu)

Ph.D. Student Positions

Department of Electrical and Computer Engineering

Stevens Institute of Technology

We are looking for new Ph.D. students to join the Robotics and Automation Laboratory in Fall 2019. Research projects are in the fields of robotics and machine learning, and students need to develop learning, planning and control algorithms and to validate them on systems of autonomous mobile robots and/or wearable sensors.

If you're interested, please email your CV to [yguo1@stevens.edu](mailto:yguo1@stevens.edu), together with a one-page statement that provide details about your knowledge and research experience in robotics, controls, and/or machine learning. Information about the research work conducted in the lab can be found at the web link:

"<http://personal.stevens.edu/~yguo1>". Serious applicants should submit their graduate admission packages through Stevens Graduate Admissions web site. After the admission is approved, we will consider offering RA positions. Official applications received by Jan. 15, 2019 will be given full consideration of RAs.

Stevens Institute of Technology is located in Hoboken, NJ, on a bluff overlooking the Hudson River and New York City.

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### **7.8. PhD/PostDoc: Tel Aviv University, Israel**

Contributed by: Michael Margaliot, [michaelm@eng.tau.ac.il](mailto:michaelm@eng.tau.ac.il)

PhD/PostDoc: Department of Electrical Engineering-Systems, Tel Aviv University, Israel

Applications are invited for a PhD and/or a post-doctoral research fellow position in the areas of systems and control and systems biology at the Department of Electrical Engineering-Systems, Tel Aviv University, Israel.

The successful candidate must have an established track record of academic excellence.

CV (including a list of publications) should be addressed to Prof. Michael Margaliot (Email: [michaelm@eng.tau.ac.il](mailto:michaelm@eng.tau.ac.il))

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### **7.9. PhD/PostDoc: Vrije Universiteit Brussel, Belgium**

Contributed by: Ivan Markovsky, [ivan.markovsky@vub.be](mailto:ivan.markovsky@vub.be)

PhD and postdoc positions on low-rank approximation

The department ELEC of the Vrije Universiteit Brussel, Belgium, offers several funded PhD and postdoc positions in low-rank matrix/tensor approximation, focused on numerical methods and applications in signal processing and system identification.

We are looking for candidates with strong background in numerical linear algebra and optimization. Experience in system theory, system identification, and tensor techniques is an advantage but is not required. Candidates should have excellent English language skills and working knowledge in numerical computing and software development.

The open positions fit into the following funded research projects:

- Structured low-rank approximation: Theory, algorithms, and applications (<http://slra.github.io/>),
- Decoupling multivariate polynomials in nonlinear system identification (<http://imarkovs.github.io/decouple>),
- Block-oriented nonlinear identification using Volterra series (<http://homepages.vub.ac.be/~imarkovs/volterra/>), and
- Structured low-rank matrix/tensor approximation: Numerical optimization-based, algorithms and applications (<https://www.esat.kuleuven.be/stadius/selma/>).

These projects cover a wide range of applications and theoretical research topics. The specific topics for the PhD/postdoc positions will be adapted to fit the interests of the candidates.

In order to apply, e-mail your CV and motivation letter to Mariya Ishteva ([mishteva@vub.ac.be](mailto:mishteva@vub.ac.be)). The preferred starting date is as soon as possible.

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### **7.10. PhD/PostDoc: City University of New York, USA**

Contributed by: Hao Su, [hao.su@ccny.cuny.edu](mailto:hao.su@ccny.cuny.edu)

Postdoc and PhD Positions in Wearable and Humanoid Robots at City University of New York in NYC

The Biomechatronics and Intelligent Robotics Lab (<http://haosu-robotics.github.io>) at the City University of New York (CUNY), City College is seeking one post-doc fellow (available now) and PhD students with design and control expertise in the areas of wearable robots, legged robots, and humanoid robots. The lab won Toyota Mobility Challenge Discovery Award, TechSAge Design Competition finalist, and \$50K Zahn entrepreneurship competition. The selected candidate will join a multidisciplinary research team to study high performance electric motors, design soft wearable robots, legged robots, and humanoid robots in collaboration with professors, physical therapists and surgeons at Cornell University, New York University, and several top medical schools in the United States. This is a great opportunity to pioneer research in a new generation of wearable, legged, and humanoid robot platforms alongside several PIs who have expertise in mechatronics, computer vision, and machine learning.

Postdoc Qualification:

- PhD in Electrical Engineering, Mechanical Engineering, Computer Science, Robotics, or related areas
- Strong hands-on experience in Mechatronics

Focused area #1: Mechanical design and actuator modeling of wearable robots, soft robots, humanoid, or legged robots. Experience in actuator design, cable transmission, legged robots, hydraulics or pneumatics is a plus.

Focused area #2: Force and position control of our wearable, legged, and humanoid robots. Experience in force control, embedded systems, and haptics is a plus.

PhD students can be admitted in 2019 Fall. PhD students will receive tuition scholarship and stipend support. Students are required to have GRE and TOEFL (or IELTS) before admission.

**\*\* About the lab and City University of New York \*\***

The Biomechatronics lab was established in 2017 and is a 1500 sq ft facility with the latest generation motion capture system, humanoid platforms, state of the art physiology measurement devices, cameras, IMUs, high performance motors, and more. The lab is a vibrant workplace; students can work on a diverse set of projects, conduct hands-on experiments, and publish high-quality papers.

The candidates can work with our Zahn Innovation Center, a startup incubator that has helped create \$6M in startup revenue and over 100 internships for students. They can also work with the New York Center for Biomedical Engineering (NYCBE), a consortium of New York City medical research institutions established in 1994 to serve as a focal center for collaborative biomedical engineering research in the New York metropolitan area. Partner institutions include Columbia University, Hospital for Special Surgery, New York University, and Memorial Sloan-Kettering Cancer Center. Located in Manhattan, CCNY is as diverse, dynamic, and visionary as New York City itself.

**\*\* Application \*\***

Applications (assembled as a single PDF file) should contain a CV, a list of publications, and copies of up to four scientific papers. Applications should be emailed to Prof. Hao Su (hao.su at ccny.cuny.edu).

Hao Su, Ph.D.

Assistant Professor

Director, Lab of Biomechatronics and Intelligent Robotics

Department of Mechanical Engineering

City University of New York, City College

Steinman Hall, Room 225

275 Convent Avenue New York, NY 10031

Web: haosu-robotics.github.io

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### **7.11. PostDoc: Technical University of Munich, Germany**

Contributed by: Matthias Althoff, [althoff@in.tum.de](mailto:althoff@in.tum.de)

PostDoc Position for Safety Verification in Autonomous Driving

Technical University of Munich, Germany

The Research Group Cyber-Physical Systems of Prof. Matthias Althoff at the Technical University of Munich offers a postdoc position in collaboration with the Ford Motor Company in Dearborn, MI, USA. The offered position has a strong focus on safety verification of automated vehicles. Technical University of Munich is one of the top research universities in Europe. The university fosters a strong entrepreneurial spirit and international culture that places it at the forefront of research in a diversity of disciplines.

More information can be found at [https://portal.mytum.de/jobs/wissenschaftler/NewsArticle\\_20181024\\_092604](https://portal.mytum.de/jobs/wissenschaftler/NewsArticle_20181024_092604)

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### **7.12. PostDoc: Zhejiang University, China**

Contributed by: Qinmin Yang, [qinminyang@gmail.com](mailto:qinminyang@gmail.com)

PostDoc: Zhejiang University, China

The Group of Networked Sensing and Control (NeSC) in College of Control Science and Engineering at the Zhejiang University invites applications for a motivated and skilled postdoctoral researcher in the general area of controls and intelligent systems.

The successful candidate must hold a Ph.D. in a relevant area of engineering, and has research interests with demonstrated expertise in one or more of the following areas: IoT, control system security, computational intelligence, industrial big data, network science, and smart grid. He/she is expected to join a project which is conducted in close collaboration with a faculty in the Group of Networked Sensing and Control (NeSC). More details about NeSC can be found in <http://www.sensornet.cn/>.

Zhejiang University (ZJU) is one of China's top higher education institutions, as well as one of its oldest; its roots can be traced back to 1897 and the founding of the Qiushi Academy. Located in Hangzhou – one of China's most picturesque cities – the University is organized across seven faculties and 36 schools. It is home to 3,611 full-time faculty members, including 41 members of the Chinese Academy of Sciences and the Chinese Academy of Engineering. Laying claim to several areas of research strength, ZJU currently ranks among the top three on Chinese mainland and within the top 100 in the Times Higher Education World Reputation Rankings and QS World University Rankings. The CSE college was founded in 1956, and has built a history of excellence in education and discovery. It is now one of the most prestigious research and teaching institutions with over 1,000 students in the area of industrial process control in China.

Applicants should submit a cover letter and a detailed CV electronically to [sunyx@zju.edu.cn](mailto:sunyx@zju.edu.cn).

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### **7.13. PostDoc: Luleå University of Technology, Sweden**

Contributed by: Thomas Gustafsson, [thomas.gustafsson@ltu.se](mailto:thomas.gustafsson@ltu.se)

The Control engineering group at Luleå University of Technology in Sweden is looking for two Postdocs contributing to our growing activities. Application areas include, but are not limited to Autonomous mobile robots, Biomechanical control systems, Plant-wide optimization of sustainable process industries, Integrated process control, Robust and optimal control.

To be eligible for the position a doctoral degree in automatic control or equivalent is required. The following criteria are meritorious: Prior work in the area of optimal control, such as model predictive control. Experience from control of industrial processes and/or autonomous mobile robots. Documented experience of composing grant application and of successfully acquiring funding from EU research funding programs or national research funding bodies.

For further information please contact Professor Thomas Gustafsson [thomas.gustafsson@ltu.se](mailto:thomas.gustafsson@ltu.se).

More information and application <https://www.ltu.se/ltu/Lediga-jobb?l=en>

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### **7.14. PostDoc: Frankfurt Institute for Advanced Studies, Germany**

Contributed by: Esteban Hernandez-Vargas, [vargas@fias.uni-frankfurt.de](mailto:vargas@fias.uni-frankfurt.de)

Postdoc Position

The group of Systems Medicine at the Frankfurt Institute for Advanced Studies invites applications for a Postdoc position.

Major duties:

- Develop control and observer algorithms to treat diseases.
- Publish research findings in scientific journals and present them at major scientific meetings.

Qualifications:

- A PhD degree in a quantitatively-oriented field, such as engineering, computer science or applied mathematics.
- Excellent command of English.
- Knowledge in analytical and quantitative methods.
- Experience in MATLAB, Python or R, and LaTeX.
- Knowledge of immunology is a plus.

Please send questions or your application with a motivation letter, outlining your interest in the position, along with your curriculum vitae which should include the names and contact details of three referees, to [vargas@fias.uni-frankfurt.de](mailto:vargas@fias.uni-frankfurt.de)

Positions are open until filled. The planned start date is January 2019.

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### **7.15. PostDoc: KTH and Linköping University, Sweden**

Contributed by: Bo Wahlberg, [bo@kth.se](mailto:bo@kth.se)

WASP Postdoctoral Positions in Autonomous Optimization

One PostDoc at Linköping University, Linköping, Sweden

One PostDoc at KTH Royal Institute of Technology, Stockholm, Sweden

Wallenberg AI, Autonomous Systems and Software Program (WASP) is Sweden's largest individual research program, and provides a platform for academic research and education, fostering interaction with Sweden's leading companies. The program addresses research in artificial intelligence, autonomous systems and software as enabling technologies for development of systems acting in collaboration with humans, adapting to their environment through sensors, information and knowledge, and forming intelligent systems of systems. The program is conducted in close cooperation between leading Swedish universities with an aim to promote the competence of Sweden as a nation within the area of AI, autonomous systems and software, <http://wasp-sweden.org/> .

Autonomous Optimization is one out of seven WASP Expedition Projects (high gain/high risk targeted projects with a specific challenging goal). The research will focus on development of autonomous optimization, i.e. how to use tools from machine learning to automatically design and tune optimization algorithms. In particular, we plan to investigate how to learn new efficient distributed optimization methods suitable for decision-making in autonomous systems and AI/ML. The main research challenges of the project are in the intersection between optimization, control and machine learning. This is a collaborative project between the Optimization Group headed by Professor Anders Hansson within the Division of Automatic Control at the Department of Electrical Engineering at Linköping University and the Department of Automatic Control headed by Professor Bo Wahlberg at KTH Royal Institute of Technology, Stockholm, Sweden.

The Division of Automatic Control at Linköping University conducts research, education and industry/society interplay within optimization for control, robotics and autonomous systems, sensor fusion and system identification. It consists of ten faculty, 8 adjunct faculty, 2 postdocs and over 25 PhD students.

The Department of Automatic Control at KTH Royal Institute conducts research, education and industry/society interplay within modelling, identification, control, learning and optimization of dynamical systems. It consists of ten faculty, 20 post-docs and over 50 PhD students.

Job Description: We are offering two two-year postdoctoral positions, one at Linköping University and one at KTH Royal Institute of Technology. Successful candidate will be able to join the WASP research network with over 150 active PhD students and researchers.

Basic Qualifications: A Ph.D. degree (or close to completion) in Systems and Control, Signal Processing, Machine Learning, Applied Mathematics, or related field is required. Ideal candidates must have a strong background in Systems Theory, Automatic Control, Optimization and Statistical Learning. Excellent interpersonal, written, and oral communication skills and ability to write peer reviewed papers. An candidate must have the ability to collaborate with a multidisciplinary team of scientists and industry. Experience of developing efficient computer code is required.

Contact: Potential candidates should contact Prof. Anders Hansson ([anders.g.hansson@liu.se](mailto:anders.g.hansson@liu.se)) or Prof. Bo Wahlberg ([bo@kth.se](mailto:bo@kth.se)) for further information about the application process.

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### 7.16. PostDoc: KTH, Sweden

Contributed by: Henrik Sandberg, [hsan@kth.se](mailto:hsan@kth.se)

Postdoc in Resilient and Networked Control Systems

Job description:

We are currently looking for 1-3 postdocs with a very strong background and interest in networked control systems, mathematics, and modeling. The successful candidate will join a project on developing novel mathematical and computational tools for the fundamental understanding and engineering design of emerging networked control systems, and with a particular focus on resilient and secure cyber-physical infrastructures.

KTH offers an attractive working environment, generous remuneration, as well as other employment benefits. As a postdoctor at KTH you have many opportunities to participate at conferences, projects and other relevant events which will extend your professional network and benefit your future career.

Qualifications:

Applicants must hold or be about to receive a doctoral degree in Electrical Engineering, Automatic Control, Applied Mathematics, or a similar field. The doctoral degree must have been obtained within the last three years from the application deadline (some exceptions for special grounds, for instance sick leave and parental leave). The candidate should have a very strong background in systems and control theory, optimization, or cyber-physical systems.

The successful applicant should have an outstanding research and publication record. Well-developed analytical and problem solving skills are a requirement. We are looking for a strongly motivated person, who is able to work independently. Good command of English orally and in writing is required to present and publish research results.

The position announcement and link to electronic application can be found here:

<https://www.kth.se/en/om/work-at-kth/lediga-jobb/what:job/jobID:238785/>

Contacts:

Henrik Sandberg, Professor, [hsan@kth.se](mailto:hsan@kth.se)

Karl Henrik Johansson, Professor, [kallej@kth.se](mailto:kallej@kth.se)

Anna Mård, HR Officer, [rekrytering@eecs.kth.se](mailto:rekrytering@eecs.kth.se)

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### **7.17. PostDoc: Westlake University, China**

Contributed by: Shiyu Zhao, [zhaoshiyu@westlake.edu.cn](mailto:zhaoshiyu@westlake.edu.cn)

The Intelligent Unmanned Systems Lab at Westlake University in China is recruiting two postdoctoral researchers. The expected research areas include

- 1) Cooperative control and estimation of multi-agent systems, especially formation control and network localization. (priority)
- 2) Guidance, navigation, and control of unmanned aerial vehicles (UAVs).
- 3) Intelligent sensing systems of UAVs based on vision or other sensors.

We will provide internationally highly competitive salary and research facilities. The positions are expected to start in the spring or summer of 2019.

Applicants should have extensive research experience in the corresponding research area.

Applications should be sent to [zhaoshiyu@westlake.edu.cn](mailto:zhaoshiyu@westlake.edu.cn). In the email, please include a cover letter, a detailed CV, and representative research papers. Only shortlisted candidates will be notified for interview. The application closes when the positions are filled.

Introduction to the organization: Westlake University is a new but high-standard university located in the beautiful and vigorous city of Hangzhou in China. The Intelligent Unmanned Systems Lab at Westlake University focuses on the research of intelligent and networked unmanned aerial vehicles.

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### **7.18. PostDoc: Shanghai Jiao Tong University, China**

Contributed by: Weidong Zhang, [wzhang@sjtu.edu.cn](mailto:wzhang@sjtu.edu.cn)

Postdoctoral position in Shanghai Jiao Tong University, China

The Optimization & Control Engineering Research Center of Shanghai (in the Department of Automation, Shanghai Jiao Tong University, China) seeks to fill 3 postdoctoral positions as soon as possible thereafter. We are interested in candidates in broad areas of advanced control theory, multi-agents, machine learning, pattern recognition, networked control systems, etc.

Applied conditions as follows:

- PhD degree
- Experience in theory or engineering research
- Good communication skills in English or Chinese
- Strong work ethic and passion for research

Main tasks:

- To conduct original research
- Assist in writing proposals for new research and write reports for existing research
- Supervision of student projects and thesis at both master and Ph.D. levels

Salary and others:

- RMB 120-200k/year (approximately, 18-30kUSD)
- It is a two-year position and can be extended to 5 years

Required documents

- Detailed curriculum vitae and list of publications;
- Names and contact information of three references.

For further information, please contact Prof. Dr. Weidong Zhang, Email : [wdzhang@sjtu.edu.cn](mailto:wdzhang@sjtu.edu.cn), Tel: +86-21-34204019. Address: Dongchuan Road 800, Shanghai Jiao Tong University, Shanghai 200240, China.

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### **7.19. PostDoc: University of Exeter, UK**

Contributed by: Halim Alwi, [h.alwi@exeter.ac.uk](mailto:h.alwi@exeter.ac.uk)

Position: Postdoctoral Research Associate / Fellow

Project Title: Fault Tolerant Control for Highly Redundant Multirotor Unmanned Aerial Vehicle using Sliding Modes

Location: University of Exeter, UK

Starting Date: The position is available immediately until 30 November 2019 (with possible 5 month extension).

Description:

The EPSRC funded project will explore the exciting research of flight control for small multirotor unmanned aerial vehicles (UAVs).

The overall aims of the project are: (1) to help improve safety, resilience and survivability of small multirotor unmanned aerial vehicles in the event of in-flight faults and failures, and (2) to bridge the gap between theory and application of sliding mode control, thus encouraging adoption of sliding mode control in industry.

In order to achieve these aims, the main objectives of the project are to:

- a) Develop a simulation model and simulation tool for highly redundant multirotor UAV
- b) Investigate and develop fault tolerant control (FTC) schemes based on sliding mode control
- c) Build the hardware of the multirotor UAV, and subsequently to implement, test and evaluate FTC control schemes

The project will focus on the application of sliding mode methods to address the aims and objectives listed above. You will help to build the UAV, implement, tune and evaluate fault tolerant flight control on a multirotor UAV (objective (c)). You will also be expected to assist in developing simulation model and tools (objective (a)).

For further information please contact Dr Halim Alwi [h.alwi@exeter.ac.uk](mailto:h.alwi@exeter.ac.uk)

Job advert can be accessed at:

[https://jobs.exeter.ac.uk/hrpr\\_webrecruitment/wrd/run/ETREC107GF.open?VACANCY\\_ID=806448Nlq&WVID=381759](https://jobs.exeter.ac.uk/hrpr_webrecruitment/wrd/run/ETREC107GF.open?VACANCY_ID=806448Nlq&WVID=381759)

Information on the PI: <https://emps.exeter.ac.uk/engineering/staff/ha281>

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### **7.20. PostDoc: Aarhus University, Denmark**

Contributed by: Erdal Kayacan, [erdal@eng.au.dk](mailto:erdal@eng.au.dk)

Postdoc in Advanced autonomy in aerial robotics at Aarhus University, Denmark

The Department of Engineering, Aarhus University, invites applicants for a 1-year postdoc position offering applicants an exciting opportunity to join a new research project on advanced autonomy in aerial robotics.

We are looking for enthusiast a post doctoral researcher who wishes to investigate embedded guidance, control and navigation problem of unmanned aerial systems using artificial intelligence/machine learning methods with emphasis on reinforcement learning and deep neural networks. Our aim is to leverage the

current state-of-the-art autonomy level towards more smarter robots which will learn and interact with their environment, collaborate with people and other robots, plan their future actions and execute the given task accurately.

The position is available from February 1, 2019 or as soon as possible hereafter.

<http://international.au.dk/about/profile/vacant-positions/academic-positions/stillinger/Vacancy/show/1016245/5283/>

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### **7.21. PostDoc: LICIT, France**

Contributed by: Andres Ladino, [andres.ladino@ifsttar.fr](mailto:andres.ladino@ifsttar.fr)

Post-doc position at IFSTTAR, COSYS, LICIT:

Large-scale traffic management strategies to optimally serve a multimodal demand

This position is funded by an ERC Consolidator Grant hold by Prof. L. Leclercq (project MAGnUM - <http://magnum.ifsttar.fr> ). This will provide a stimulating working environment with lots of international collaborations. The MAGnUM team is currently composed by 3 permanent researchers, 5 PhD students, 2 post-docs and 2 research engineers all working on close and connected topics.

Resume:

The MAGnUM project aims to develop new multiscale and multimodal modelling approaches for urban transportation systems. Several modelling approaches (from microscopic to macroscopic) are under investigations. The project also aims to design innovative traffic management strategies (TMS) at large urban scales. A particular focus is on strategies that are targeting users (incentive, guidance...) on the contrary to more classical approaches that are controlling flows at different key network points.

This Post-doc will focus in particular on innovative TMS based on a dynamic allocation of capacities to the different modes and/or on prescriptive instructions pushed to travelers (optimal route guidance, optimal departure times, etc.). The main goal of the post-doc is to provide insights on how such innovative TMS can be tuned and optimized with regard to a multimodal demand profile. The Lyon city network (France) has already been implemented and calibrated into different MAGNUM simulators and will serve as a test case to assess the different strategies. Centralized vs. decentralized control systems will be designed and tested. Heuristics methods to provide the optimal sets of instructions will be developed in order to meet real-time applications requirements. The main question is to determine if innovative TMS can make the transport system closer to system optimum or at least to delay and/or reduce capacity drops and then make the system more stable and efficient.

Skills:

We are looking for highly talented and motivated PhD graduates in Control, Optimization and/or computer sciences. Advanced skills in control, optimization and simulation are mandatory as the primary objective is to design, implement and assess new traffic management strategies at large urban scale. Excellent English skills (speaking and writing) is required, as are strong analytical skills and project management skills. As the projects are part of a large research program, we seek for opportunities for the project members to cooperate on various topics. Affinity for working in a group is therefore preferred. Some basic knowledge about transportation systems and traffic models is appreciated.

Other information:

Hosting Laboratory: LICIT (IFSTTAR / ENTPE), [licit.ifsttar.fr](mailto:licit.ifsttar.fr), [www.ifsttar.fr](http://www.ifsttar.fr), [www.entpe.fr](http://www.entpe.fr)

The MAGnUM Project: [magnum.ifsttar.fr@ERC\\_MAGnUM](mailto:magnum.ifsttar.fr@ERC_MAGnUM) Supervision: Prof. Ludovic Leclercq

Location: Lyon, France

Starting date: from 01/01/2019 to 01/04/2019

Gross salary: 2699Euro / month Duration: 12 months

Applications:

Applicants should send their CV, a motivation letter and a copy of their PhD manuscript by e-mail to ludovic.leclercq@ifsttar.fr . Recommendation letters may be requested during the selection process. They will get an answer only if their application is considered for a first interview.

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## **7.22. PostDoc: University of Applied Sciences and Arts of Southern Switzerland, Switzerland**

Contributed by: Dario Piga, [dario.piga@supsi.ch](mailto:dario.piga@supsi.ch)

The University of Applied Sciences and Arts of Southern Switzerland (SUPSI) opens two positions at the Dalle Molle Institute for Artificial Intelligence(IDSIA), for two Postdoctoral Researchers in the areas of System Identification, Machine Learning and Control. Occupancy degree: 100%. Duration of the contract: 2 years.

Tasks:

- Basic research, aimed at publications in top journals and conferences
- Applied research: collaboration with industrial partners in innovative projects
- Opportunity to be involved in teaching in Bachelor and/or Master courses

We offer:

- 2-year contract, with possibility of prolongation
- International working environment and collaboration with a strong team of researchers in Machine Learning, Statistics and Control ([www.idsia.ch](http://www.idsia.ch))
- Development of your own professional skills and career progression
- Funding travels in case of papers accepted to International Conferences
- Salary: CHF 80,000 gross per year

Requirements:

- The position is for researchers who has obtained a PhD since no more than 5 years
- Master degree in Mechanical Engineering, Electric Engineering, Mechatronics, or Control Engineering
- PhD focused on modelling, identification and control of dynamical systems
- Experience in both theoretical and applied research
- Excellent programming skills and proficiency with state-of-the-art libraries for system identification, control and optimization
- Good knowledge of algorithms and software for machine learning
- Proficiency in written and spoken English

How to apply and further information:

- The positions will remain open until 27 December 2018. A link with application instructions and to the online application form is provided at: <http://www.dariopiga.com/Vacancy.html>
- The preferred starting date is before March 2019
- For further information please contact Dario Piga ([dario.piga@supsi.ch](mailto:dario.piga@supsi.ch)). Please do not use this e-mail address for the application

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## **7.23. PostDoc: EPFL, Switzerland**

Contributed by: Giancarlo Ferrari Trecate, [giancarlo.ferraritrecate@epfl.ch](mailto:giancarlo.ferraritrecate@epfl.ch)

A PostDoc position is available at the Automatic Control Laboratory of EPFL (Switzerland) in the broad area of data-based control and learning.

Candidates with a strong methodological background and motivated by research on theory and algorithms are encouraged to apply.

Qualifications:

- Ph.D. degree (or close to completion) in Systems and Control, Machine Learning or related fields
- An established track-record of academic publications in top venues
- Excellent interpersonal, written, and oral communication skills and ability to write peer reviewed papers

Application procedure: please email (i) a detailed curriculum vitae and list of publications (ii) the names and contact information of three references and (iii) a sample paper to giancarlo.ferraritrecate@epfl.ch

Deadlines: the call opens from December 2018 and will remain open until an ideal candidate will be found.

Starting date: any time from January 2019. The call will remain open until an ideal candidate will be found.

The contract duration is one year, and can be extended up to four years.

EPFL is a top technical university, ranked 12th in the world (2018). The successful candidate can expect a gross salary starting at 81900 CHF, together with other benefits, depending on civil status.

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#### **7.24. PostDoc: University of Kansas, USA**

Contributed by: Huazhen Fang, [fang@ku.edu](mailto:fang@ku.edu)

Applications are cordially invited for a postdoctoral research fellow position in the Information & Smart Systems Laboratory ([www.issl.space](http://www.issl.space)) at the University of Kansas. The position is expected to start between April and May 2019, with the exact start date negotiable. The research project will be concerned with fundamental estimation theory and machine learning. A background in the broad areas of machine learning, deep learning, estimation, signal processing, mathematics, and control will be desirable.

A successful candidate should have the following qualifications: a recent PhD degree with thesis research on machine learning, data science, estimation theory, control systems, mathematics or related subjects, solid mathematical skills, excellent programming (Matlab, TensorFlow, or Python) skills, excellent oral and written communication skills, and strong motivation to perform outstanding research.

The appointment is for one year, with possible extension contingent on availability of funds and research performance. The salary will be in accordance with the postdoctoral salary scale of the University of Kansas.

Interested candidates can feel free to contact Dr. Huazhen Fang ([fang@ku.edu](mailto:fang@ku.edu)) for further information and are encouraged to send: a curriculum vitae detailing research achievements, a list of three referees, and up to three research documents (e.g., thesis, journal articles, conference papers).

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#### **7.25. PostDoc: University of Groningen, The Netherlands**

Contributed by: Claudio De Persis, [c.de.persis@rug.nl](mailto:c.de.persis@rug.nl)

PostDoc: University of Groningen, the Netherlands

A postdoctoral scholar position is available at the SMS-Cyber-physical Systems research group at the Faculty of Science and Engineering, University of Groningen, the Netherlands. The group is affiliated with the JC Willems Center in Systems and Control.

The research of the group focuses on the modeling and control of complex systems with nonlinear dynamics and large-scale dimensions and their interaction with communication media and computational devices. Examples are power systems, distribution networks, data centers, supply chains and flow networks. Current research lines focus on cyber-physical systems, data-driven estimation and control, resilient control, distributed control of networks, game-theoretic-optimal control.

The position also gives the successful candidate the possibility to further develop his/her educational skills, including teaching a bachelor and a master course. The teaching-research time division is approximately 70

Duration: initially one year, possibly starting in February 2018, with the option of extending the contract for one or two more years.

Deadline for submitting applications: December 8, 2018

Your Profile:

- A Ph.D. degree in Control Theory, Mechanical, Computer, Electrical & Electronics Engineering, Applied Mathematics, Computer Science;
- An excellent background in Systems & Control. Preference might be given to candidates with strong expertise in one of the following areas: identification, nonlinear control, networked control systems, dynamical networks, hybrid control systems, distributed control and optimization, machine learning;
- 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 dynamic 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 (with f.g.fokkens@rug.nl in cc).

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

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## **7.26. PostDoc: Chalmers University of Technology, Sweden**

Contributed by: Balazs Kulcsar, [kulcsar@chalmers.se](mailto:kulcsar@chalmers.se)

Postdoc position in Public transit shared mobility

We invite applications for one doctoral position (placed in the Automatic Control Group and or Urban System Mobility group) on developing scalable, real-time implementable methods for demand learning optimal public transport scheduling based on shared mobility concepts taking into account the mixed environment of passenger-self-driven vehicular fleet. We will rely on an inter-disciplinary approach between traffic theory (e.g., bus following model, bus network models, crowd dynamics), control theory (e.g., bus bunching) and traffic safety (e.g., crashes/near-crashes/conflicts assessment). We propose to use adaptive learning algorithms in order to (i) estimate the travel demand, (ii) define and estimate the risks of crashes/conflicts and (iii) minimize transit delays (primary and secondary). The project will initially focus on designing intelligent algorithms for the public transport in Gothenburg, for which large amount of data on city bus driving

has already been recorded. One of the tasks is to investigate and propose an appropriate level of model abstractions and control decomposition into multiple layers that allow a real-time implementable solution.

Major responsibilities

Your main responsibility as a postdoc is to pursue research, publish, and contribute to proposals. You are expected to develop your own scientific concepts and communicate the results of your research verbally and in writing. The position also may include teaching on undergraduate and MSc level, or performing other department duties corresponding to a maximum of 20 percent of working hours.

Position summary

Full-time temporary employment. The position is limited to a maximum of two years (1+1).

Qualifications

To qualify as a postdoc, you must have a PhD degree (or closed to completion) in a relevant field such as control, transportation, mathematics, electrical, mechanical, or engineering physics. Your educational background should (partially) cover some courses on modeling, traffic theory and control. In addition you should have understanding on optimization and learning algorithms. Ability to initiate new research collaborations is essential. Good communication skills in oral and written English are required.

Chalmers continuously strives to be an attractive employer. Equality and diversity are substantial foundations in all activities at Chalmers.

Application procedure

The application should be marked with Ref 20180673 and written in English. The application should be sent electronically via

<http://www.chalmers.se/en/about-chalmers/Working-at-Chalmers/Vacancies>

Deadline January 12th 2019

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### **7.27. PostDoc: Purdue University, USA**

Contributed by: Gesualdo Scutari, [gscutari@purdue.edu](mailto:gscutari@purdue.edu)

Lillian Gilbreth Postdoctoral Fellowships at Purdue Engineering

<https://engineering.purdue.edu/Engr/Research/GilbrethFellowships/ResearchProposals/2019-20/distributed-optimization-and-statistics-an-unconsummated-marriage->

In addition to the above prestigious fellowship, there are other post-doc positions available in the School of Industrial Engineering at Purdue University. Areas of interest include distributed (nonconvex) optimization, statistical learning, and Information Processing. The postdoctoral associates will be expected to conduct fundamental and top-notch research in collaboration with the other members of the team. The research team has several ongoing research projects (supported by NSF, ONR, and ARO) in the areas of i) distributed (stochastic) optimization for (nonconvex) large-scale systems; ii) computational big-data analytics over networks; and iii) deep learning.

Please contact Gesualdo Scutari, [gscutari@purdue.edu](mailto:gscutari@purdue.edu)

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### **7.28. PostDoc: Technion—Israel Institute of Technology, Israel**

Contributed by: Juri Belikov, [juri.belikov@taltech.ee](mailto:juri.belikov@taltech.ee)

Postdoctoral position at the Technion—Israel Institute of Technology

We offer a post-doctoral research fellow position in the joint areas of power systems and control, at the Faculty of Electrical Engineering, Technion, Israel. For some information about the group recent activities please visit:

- <https://yoash-levron.net.technion.ac.il/>
- <https://a-lab.ee/projects/dq0-dynamics>

A postdoctoral position is for a period of 1 year, with the possibility of renewal up to another year depending on progress. Applicants are required to have a recently completed PhD in power systems, control, or related areas.

The application should consist of:

- a motivation letter;
- a complete CV with a full publication list.

Please send these to

Juri Belikov: [juri.belikov@taltech.ee](mailto:juri.belikov@taltech.ee)

Yoash Levron: [yoashl@ee.technion.ac.il](mailto:yoashl@ee.technion.ac.il)

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### **7.29. PostDoc: University of California at Santa Cruz, USA**

Contributed by: Ricardo Sanfelice, [ricardo@ucsc.edu](mailto:ricardo@ucsc.edu)

A Postdoctoral Scholar position is available at the Hybrid Systems Laboratory at the Department of Computer Engineering, University of California in Santa Cruz, California.

The research focus of this position is the generation of design tools for estimation and control of hybrid dynamical systems. Expertise in nonlinear and hybrid control, model predictive control, formal methods, and observer design will be key. The results will have applications to a wide range of hybrid and cyber-physical systems, such as autonomous vehicle systems and power systems.

Candidates with a Ph.D. in engineering or applied math, with a strong theoretical background and required expertise are encouraged to apply by submitting via email (to Prof. Ricardo Sanfelice at [ricardo@ucsc.edu](mailto:ricardo@ucsc.edu)) the following: 1) a cover letter, 2) a detailed curriculum vitae, including educational background and a list of publications, 3) two publications representing the candidate's research work, and 4) contact information for at least two academic references.

Review of applications will start on March 1, 2018. Though flexible, the suggested start date for the position is July 1, 2018 and for a duration of one year, renewable depending on performance.

More information about the research at the Hybrid Systems Laboratory is available at <https://hybrid.soe.ucsc.edu>.

The University of California at Santa Cruz also houses the newly established Cyber-Physical Systems Research Center (<https://cps.ucsc.edu>) which brings together more than 30 faculty with interest in numerous areas, including networking, sensors, robotics, and control.

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### **7.30. Junior Researcher: Politecnico di Torino, Italy**

Contributed by: Giuseppe Calafiore, [giuseppe.calafiore@polito.it](mailto:giuseppe.calafiore@polito.it)

The Department of Electronics and Telecommunications (DET) at Politecnico di Torino, Italy, is looking for one full-time Junior Researcher to undertake research in the broader area of Automatica.

The position is fixed term, for 36 months. The approximate gross salary is 41,800 Euro per year.



Candidates should hold a Master's degree in the fields of Control Engineering, Electrical Engineering, Applied Mathematics, Data Science, Mechanical Engineering, Physics, or related fields. The successful candidate will have a promising research profile showing the ability to publish high quality research output. He/she is required to be an excellent communicator with strong communication skills, and experience in working both independently and as part of a team. The successful candidate will have experience and knowledge in one or more of the following areas: control theory, system identification, optimization, robotics, applied probability, statistics, data science, machine learning, networked control systems, traffic control systems, and autonomous vehicles.

The closing date for applications is December 11, 2018.

Code of the procedure is: 09/18/P/RA

Scientific Sector: 09/G1 Automatica.

Applications for this competition are accepted via an on-line application system. Information is available at:  
[https://www.swas.polito.it/services/concorsi/240.asp?id\\_documento\\_padre=160342](https://www.swas.polito.it/services/concorsi/240.asp?id_documento_padre=160342)  
<https://careers.polito.it/>

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### **7.31. Faculty: University of Sydney, Australia**

Contributed by: Ian Manchester, [ian.manchester@sydney.edu.au](mailto:ian.manchester@sydney.edu.au)

The University of Sydney has multiple openings for continuing (tenure-track/tenured) faculty member in robotics, control, and related disciplines

The positions are open at all levels, from Lecturer to full Professor.

In Mechatronic Engineering we are particularly interested in recruiting in the areas of surgical robotics, mechanism design, robotic planning, grasping and manipulation. However, strong applicants in all areas of robotics and control will be considered and are encouraged to apply.

Control researchers may also be interested in the open faculty positions in Aerospace Engineering (prioritising flight dynamics, navigation and control, and unmanned aerial vehicles, among others) and Mechanical Engineering (dynamics and micro-machines among others).

The University of Sydney currently has 10 continuing faculty members in robotics, who lead the Australian Centre for Field Robotics (ACFR), which has over 100 researchers, grad students, and technical staff and a long history of fundamental research and major industrial collaborations. The University's new Centre for Robotics and Intelligent Systems is led by ACFR and also includes researchers from Medicine, Business, Arts and Social Sciences, and other disciplines.

For full information about the positions, and to make an application, please follow this link:

<http://bit.ly/SydneyHiring2018>

For more information about these positions, please contact myself ([ian.manchester@sydney.edu.au](mailto:ian.manchester@sydney.edu.au)) or Head of School Stefan Williams ([stefan.williams@sydney.edu.au](mailto:stefan.williams@sydney.edu.au))

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### **7.32. Faculty: ANU, Australia**

Contributed by: Ian Petersen, [ian.petersen@anu.edu.au](mailto:ian.petersen@anu.edu.au)

Faculty Positions in Electrical Engineering at ANU, Canberra, Australia.

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

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

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

For further information and to apply please follow the link:

<http://jobs.anu.edu.au/cw/en/job/525620/lecturersenior-lecturerassociate-professor>

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### **7.33. Faculty: University of Michigan, USA**

Contributed by: Nicole Frawley-Panyard, [npanyard@umich.edu](mailto:npanyard@umich.edu)

The Department of Naval Architecture and Marine Engineering at the University of Michigan, Ann Arbor, invites applications for two full-time, tenure-track, faculty positions at the assistant, associate, or full professor level.

The department seeks applicants within the following areas of research emphasis: autonomous vehicles, marine robotics, electrification, control and dynamics, condition monitoring, distributed systems, sensing, and navigation with applications in marine platforms and vessels. Candidates are required to have a doctoral degree in a relevant 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 College of Engineering is especially interested in candidates who can contribute, through their research, teaching and/or service, to the diversity and excellence of the academic community.

Michigan Engineering’s vision is to be the world’s preeminent college of engineering serving the common good. This global outlook, leadership focus and service commitment permeate our culture. Our vision is supported by a mission and values that, together, provide the framework for all that we do. Information about our vision, mission and values can be found at: <http://strategicvision.engin.umich.edu/>.

The University of Michigan has a storied legacy of commitment to Diversity, Equity and Inclusion (DEI). The Michigan Engineering component of the University’s comprehensive, five-year, DEI strategic plan—along with updates on our programs and resources dedicated to ensuring a welcoming, fair and inclusive environment—can be found at: <https://www.engin.umich.edu/about/diversity>.

#### Application Materials

Applicants should send a curriculum vitae, a brief statement of present and future research plans, a statement of teaching experience and interests, a diversity statement to discuss your potential for (or record of) contributing to diversity, and the names of at least three persons who can provide letters of recommendation. Materials should be submitted to:

[https://deptapps.engin.umich.edu/fsv2/candidate/?search\\_id=15](https://deptapps.engin.umich.edu/fsv2/candidate/?search_id=15)

All applicants will be acknowledged. Applications will be considered as they are received. However, for full consideration, applications must be received by December 1, 2018.

The University of Michigan is a non-discriminatory/affirmative action employer and is responsive to the needs of dual career families.

Michigan Engineering's vision is to be the world's preeminent college of engineering serving the common good. This global outlook, leadership focus and service commitment permeate our culture. Our vision is supported by a mission and values that, together, provide the framework for all that we do. Information about our vision, mission and values can be found at: <http://strategicvision.engin.umich.edu/>. The University of Michigan has a storied legacy of commitment to Diversity, Equity and Inclusion (DEI). The Michigan Engineering component of the University's comprehensive, five-year, DEI strategic plan—along with updates on our programs and resources dedicated to ensuring a welcoming, fair and inclusive environment—can be found at: <http://www.engin.umich.edu/college/about/diversity>.

Please send any comments or inquiries to [NAMEfacultysearch@umich.edu](mailto:NAMEfacultysearch@umich.edu)

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### **7.34. Faculty: Zhejiang University, China**

Contributed by: Qinmin Yang, [qinminyang@gmail.com](mailto:qinminyang@gmail.com)

Faculty: Zhejiang University, China

The College of Control Science and Engineering at the Zhejiang University invites applications for a tenure-track faculty position at the junior level in the general area of controls and intelligent systems. The position is at the Assistant Professor level.

The successful candidate must hold a Ph.D. in a relevant area of engineering, and has research interests with demonstrated expertise in one or more of the following areas: IoT, control system security, computational intelligence, industrial big data, network science, and smart grid. He/she is expected to establish a dynamic, externally-funded research program that would interact and complement the existing expertise in the college.

Zhejiang University (ZJU) is one of China's top higher education institutions, as well as one of its oldest; its roots can be traced back to 1897 and the founding of the Qiushi Academy. Located in Hangzhou – one of China's most picturesque cities – the University is organized across seven faculties and 36 schools. It is home to 3,611 full-time faculty members, including 41 members of the Chinese Academy of Sciences and the Chinese Academy of Engineering. Laying claim to several areas of research strength, ZJU currently ranks among the top three on Chinese mainland and within the top 100 in the Times Higher Education World Reputation Rankings and QS World University Rankings. The CSE college was founded in 1956, and has built a history of excellence in education and discovery. It is now one of the most prestigious research and teaching institutions with over 1,000 students in the area of industrial process control in China.

Applicants should submit a cover letter and a detailed CV electronically to [sunyx@zju.edu.cn](mailto:sunyx@zju.edu.cn).

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### **7.35. Faculty: Saclay Institute of Neuroscience, France**

Contributed by: Antoine Chaillet, [antoine.chaillet@centralesupelec.fr](mailto:antoine.chaillet@centralesupelec.fr)

\* Professor Position in Neural Engineering / Computational Neuroscience at Paris-Saclay, France \*

The Saclay Institute of Neuroscience (Neuro-PSI) will shortly open a new full professor position on topics at the interface between engineering and neuroscience (computational neuroscience and neural engineering). The recruited professor will benefit from the all-new, state of the art facilities of the Neuro-PSI institute where significant laboratory space will be made available for his/her team. He/She will have the unique

opportunity to shape profoundly the neuroscience teaching provided by the institute in the context of the Paris-Saclay university.

- Teaching:

Eligible candidates should hold the "qualification pour les postes de professeur d'université".

The proposed professor position aims to recruit a teacher-researcher to participate in the development and structuring of a new teaching program at the interface between Neurosciences and Engineering, both at undergraduate and graduate levels.

- Research:

The host unit for this position is the Paris-Saclay Institute of Neurosciences (UMR Université Paris-sud-CNRS, NeuroPSI) and more precisely the Department of "Integrative and Computational Neurosciences" (ICN). The ICN is an interdisciplinary neuroscience research department composed of six teams collectively engaged in the study of the brain at multiple scales to identify computational principles and fundamental mechanisms in thalamocortical networks, and to understand the roles of spontaneous and evoked activities in the emergence of higher brain functions. ICN teams use experimental, computational and theoretical approaches, combining neuroscience, physics, applied mathematics and neuroinformatics, at different scales (cell, network, behaviour) and organizational levels (micro, meso- and macroscopic scales). Thus, the candidate will benefit from a profoundly multidisciplinary environment.

The recruited candidate should ideally have a dual expertise: on the one hand on experimental developments (electrophysiology, brain-machine interface, brain imaging, etc.) and on the other hand on aspects related to engineering in the broad sense (dynamical systems, control theory, signal processing, robotics, learning methods).

Given the interdisciplinary nature of the profile, please consider candidating even if you don't fully match the profile!

For details, please contact:

Antoine Chaillet, professor in Control Engineering at L2S-CentraleSupélec ([antoine.chaillet@centralesupelec.fr](mailto:antoine.chaillet@centralesupelec.fr))

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### **7.36. Faculty: University of Oxford, UK**

Contributed by: Stephen Duncan, [stephen.duncan@eng.ox.ac.uk](mailto:stephen.duncan@eng.ox.ac.uk)

We have an opening for a Departmental Lecturer in Control Engineering in the Department of Engineering Science at the University of Oxford, UK

<https://www.jobs.ac.uk/job/BOI006/departamental-lecturer-in-control-engineering>

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### **7.37. Faculty: Paderborn University, Germany**

Contributed by: Daniel Quevedo, [dquevedo@ieee.org](mailto:dquevedo@ieee.org)

At Paderborn University, Faculty of Computer Science, Electrical Engineering and Mathematics a position as

Associate Professor (W2) for Electrical Drive Systems with Tenure Track (W3)

is offered. The successful candidate will initially be appointed as a civil servant with a limited tenure of five years. Following a positive final evaluation, the appointment will be converted to a permanent professorship.

We are searching for a person with outstanding scientific competence, as demonstrated by high-quality peer-reviewed publications, and who is able to comprehensively represent the discipline both in research and teaching. The candidate should exhibit special expertise in one or more of the following fields:

- \* Construction and Computation of electrical machines and drives
- \* Control and operation strategies of electrical drives
- \* Applications of electrical drives in automotive, aviation, renewable energy and innovative industry

We expect professional experience in relevant leadership positions, where industrial experience is particularly appreciated. Furthermore, we are looking for candidates with experience in teaching and with the acquisition of third-party project funding. The appointee is expected to have lectured in German and English within the bachelor and master study programs of the Institute of Electrical Engineering latest in the second half of the evaluation period and to have taken part in academic self-administration.

For further information, please see <http://controlsistemas.upb.de/index.php?id=309&L=1>

Applications should mention reference number 3625 and are to be submitted using electronic mail as a single PDF file by 15.01.2019 to [elena.schlegel@upb.de](mailto:elena.schlegel@upb.de)

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### **7.38. Faculty: ETH, Switzerland**

Contributed by: Michael O’Kane, [mokane@impressmedia.com](mailto:mokane@impressmedia.com)

The Department of Mechanical and Process Engineering ([www.mavt.ethz.ch](http://www.mavt.ethz.ch)) at ETH Zurich invites applications for the above-mentioned position.

Successful applicants must demonstrate an excellent international record of research accomplishments as robotics engineers and scientists. The new professor is expected to establish an ambitious, world-class research program in the fast-evolving field of robotics. Scientists and engineers from the entire spectrum of robotics, from perception and design up to modeling, control, and robot learning are encouraged to apply. Candidates should demonstrate a core-area of scientific expertise and solid theoretical foundation with a desire to apply this knowledge to solve important challenges in fields like service robots, search and rescue, construction, precision agriculture, or mobility and logistics. Specific areas of research may include (but are not limited to) intelligent perception and scene understanding, mobile manipulation and enhanced human-machine interaction, robot design, soft robots, modeling and control, or robot learning.

Candidates should hold a PhD degree or equivalent in engineering and have an outstanding record of accomplishments in robotics. Furthermore, a strong motivation and indisputable commitment to undergraduate (in German or English) and graduate (in English) student teaching is expected.

Assistant professorships have been established to promote the careers of younger scientists. ETH Zurich implements a tenure track system equivalent to other top international universities.

Please apply online: [www.facultyaffairs.ethz.ch](http://www.facultyaffairs.ethz.ch)

Applications should include a curriculum vitae, a list of publications, a statement of future research and teaching interests, and a description of the three most important achievements. The letter of application should be addressed to the President of ETH Zurich. The closing date for applications is 1 February 2019. ETH Zurich is an equal opportunity and family friendly employer and is responsive to the needs of dual career couples. We specifically encourage women to apply.

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### 7.39. Control Engineer: Booz Allen, USA

Contributed by: Brenda Haendler, [haendler\\_brenda@bah.com](mailto:haendler_brenda@bah.com)

#### Controls Engineer

As a systems engineer on our team, you have the chance to shape the development of next generation energy technologies that increase efficiency and/or reduce emissions by leading the design of government R&D programs and evaluation of novel technology concepts. On our team, you'll be able to broaden your skillset into areas like controls engineering, aerodynamics, hydrodynamics, and structural mechanics, as well as your knowledge of energy market considerations. Grow your skills by merging controls engineering, systems engineering, and aero/hydrodynamics to create, next generation energy technology programs such as those involving wind and marine hydrokinetic energy systems. Join our team and create the future of technology in energy.

We are looking for people who have:

5+ years of experience with authoring technical papers, reports, or program plans for technical and non-technical audiences on research related to controls engineering or applied control

2+ years of experience with relevant postdoctoral or industry research and consulting

Experience with concurrent engineering, co-optimization and co-simulation methodologies

Experience with design of wind, marine hydrokinetic systems, or similar complex electro-mechanical systems

Ability to obtain a security clearance

PhD degree in Controls Engineering, System Engineering, discipline Mechanical, Aerospace Engineering or EE

For more information and to apply, see:

<https://careers.boozallen.com/en-US/job/controls-engineer/J3V0NQ6NFXK4TVCKJFC>

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