

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

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- 6.20 Lecturer: University of Pennsylvania, USA
- 6.21 Faculty: Zhejiang University of Technology, China
- 6.22 Faculty: University of Southern Denmark, Denmark
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## 1. IEEE CSS Headlines

### 1.1. IEEE Control Systems Society Publications Content Digest

Contributed by: Elizabeth Kovacs, [ekovacs2@nd.edu](mailto:ekovacs2@nd.edu)

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

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

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### 1.2. IEEE Transactions on Automatic Control

Contributed by: Elizabeth Kovacs, [ekovacs2@nd.edu](mailto:ekovacs2@nd.edu)

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IEEE Transactions on Automatic Control

Volume 61 (2016), Issue 10 (October)

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### 1.3. IEEE Transactions on Control of Network Systems

Contributed by: Denise Joseph, [dejoseph@bu.edu](mailto:dejoseph@bu.edu)

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IEEE Transactions on Control of Network Systems

Volume 3 (2016), Issue 3 (September)

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#### 1.4. CFP: IEEE Transactions on Control of Network Systems

Contributed by: Denise Joseph, [dejoseph@bu.edu](mailto:dejoseph@bu.edu)

Call for submissions to TCNS special issue:

Approaches to Control Biological and Biologically Inspired Networks

The emerging field at the intersection of quantitative biology, network modeling, and control theory has enjoyed significant progress in recent years. Application areas have included molecular and cell biology, neuroscience, and ecology as well as biologically inspired engineering applications such as collective formations involving moving sensors.

Learn more about this topic at [http://sites.bu.edu/tcns/special\\_issue\\_biological/](http://sites.bu.edu/tcns/special_issue_biological/).

Specific potential topics include but are not limited to:

- Rational approaches for cell reprogramming and transdifferentiation
- Design of interventions to mitigate disease states
- Control of neuronal networks
- Strategies for ecosystem management
- System identification and observability in biological networks
- Interplay between stability, control, and robustness in biological networks
- Applications to biologically inspired networked systems

Submissions will open on October 15, 2016.

Submissions deadline: January 15, 2017.

Please submit your manuscript through the TCNS submissions site:

<https://css.paperplaza.net/journals/cones/scripts/login.pl>

Guest Editors:

Réka Albert, Pennsylvania State University

John Baillieul, Boston University

Adilson E. Motter, Northwestern University

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### **1.5. 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:

- 2017 International Conference on Unmanned Aircraft Systems (ICUAS'17). Miami (FL), United States. Jun 13 - Jun 16, 2017. <http://www.uasconferences.com/>
- 21st International Conference on Methods and Models in Automation and Robotics (MMAR 2016). Miedzyzdroje, Poland. Aug 29 - Sep 1, 2016. <http://mmar.edu.pl/>
- 6th International Symposium on Advanced Control of Industrial Processes (AdCONIP 2017). Taipei, Taiwan. May 28 - May 31, 2017. <http://www.adconip2017.org/>
- 16th International Conference on Control, Automation and Systems (ICCAS 2016). Gyeongju, South Korea. Oct 16 - Oct 19, 2016. <http://2016.iccas.org/>

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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### **1.6. CFP: IEEE-CSS Outreach Fund**

Contributed by: Daniel E. Rivera, [daniel.rivera@asu.edu](mailto:daniel.rivera@asu.edu)

The IEEE CSS Outreach Task Force is pleased to announce the submission window for proposals to the IEEE-CSS Outreach Fund for its 2016 fall solicitation. Proposals will be received starting Monday, October 31 through midnight on Friday, November 18, 2016. Information regarding the program can be found in:

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

Inquiries, notices of intent, and requests for application forms should be made directly to Daniel E. Rivera, Outreach Task Force Chair, at [daniel.rivera@asu.edu](mailto:daniel.rivera@asu.edu).

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## **2. Honors & Awards**

### **2.1. Fulbright-Nehru Distinguished Chair Professor Award**

Contributed by: Aurobinda Routray, [aroutray@iitkgp.ac.in](mailto:aroutray@iitkgp.ac.in)



Fulbright-Nehru Distinguished Chair Professor Award for Biswa Nath Datta

Biswa Nath Datta, Professor of Mathematical Sciences and Distinguished Research Professor at Northern Illinois University was a recipient of 2015 Fulbright-Nehru Distinguished Chair Professorship Award given by United States Department of State Bureau of Education and Cultural Affairs with Indian Institute of Technology-Kharagpur (IIT-KGP) as the Home Institute. Earlier, Biswa had received two Senior Fulbright Specialists Awards in 2006 and 2008 in Mongolia and Egypt, respectively, to visit and deliver lectures on his research at National University of Mongolia and at several Universities in Egypt. The Distinguished Chair Award is of the highest level of Fulbright Awards.

“The Fulbright Distinguished Chair Program awards are viewed as the most prestigious appointments in the Fulbright Scholar Program. The candidates are considered eminent scholars and have significant publication and teaching record”, according to the Fulbright website. In India the award was administered by United States-India Educational Foundation (USIEF). “USIEF promotes mutual understanding between the nationals of India and the national of United States through the educational exchange of outstanding scholars, professional and students”.

During the award period ( October, 2015 to January,2016 ) , in addition to delivering lectures/workshop/courses and conducting research at the home institute, IIT-KGP, Biswa visited several other Universities and Research Organizations of high distinctions in India, including IIT-Delhi, IIT-Madras, IIT-Bombay, IIT- Gandhinagar, IIT- Bhubaneswar, IIT-Jodhpur , , Indian Institute of Science, Bangalore, Indian Statistical Institute in Kolkata, and Jadavpur University , Kolkata to deliver lectures on his current interdisciplinary research on “Computational and Optimization Methods for Inverse Quadratic Eigenvalue Problems in Active Vibration Control and Finite Element Model Updating” and to collaborate on research and book-writing projects with Indian colleagues. It is worth mentioning that his both books, “Numerical Methods for Linear Control Systems Design and Analysis”, and “ Numerical Linear Algebra and Applications” have Indian editions and are widely used in Indian Universities.

His in-country visits were organized and coordinated by USIEF.

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## **2.2. Asian Journal of Control Best Paper Award**

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

Asian Journal of Control  
Best Paper Award, 2016

In 2001 Asian Control Conference, the Editorial Board of Asian Journal of Control has conveyed the 1st Best Paper Award. The award includes a plaque and US\$1,000 check. Now, we would like to announce the winner of the 8th Best Paper Award. The award was conveyed during 2016 SICE Annual Conference (Sep.20-23) in Tsukuba, Japan.

Award Paper

Title: “Markov Chain Approach to Probabilistic Guidance for Swarms of Autonomous Agents”

Authors: Behcet Acikmese (University of Washington, WA, USA)

David S. Bayard (California Institute of Technology, California, USA)

Issue: Vol. 17, No. 4, pp. 1105-112

Full text: <http://onlinelibrary.wiley.com/doi/10.1002/asjc.982/full>

Abstract:

Motivated by biological swarms occurring in nature, there is recent interest in developing swarms comprised completely of engineered agents. The main challenge for developing swarm guidance laws compared to

earlier formation flying and multi-vehicle coordination approaches is the sheer number of agents involved. While formation flying applications might involve up to 10 to 20 agents, swarms are desired to contain hundreds to many thousands of agents. In order to deal with the sheer size, the present paper makes a break with past deterministic methods, and considers the swarm as a statistical ensemble for which guidance can be performed from a probabilistic point of view. The probability-based approach takes advantage of the law of large numbers, and leads to computationally tractable and implementable swarm guidance laws. Agents following a probabilistic guidance algorithm make statistically independent probabilistic decisions based solely on their own state, which ultimately guides the swarm to the desired density distribution in the configuration space. Two different synthesis methods are introduced for designing probabilistic guidance laws. The first is based on the Metropolis-Hastings (M-H) algorithm, and the second is based on using Linear Matrix Inequalities (LMIs). The M-H approach ensures convergent swarm behavior subject to enforced desired motion constraints, while the LMI approach additionally ensures exponential convergence with a prescribed decay rate, and allows minimization of a cost function that reflects fuel expenditure. In addition, both algorithms endow the swarm with the property of self-repair, and the capability to strictly enforce zero-probability keep-out regions. This last property requires a slight generalization of Perron-Frobenius theory, and can be very useful in swarm applications that contain regions where no agents are allowed to go. Simulation examples are given to illustrate the methods and demonstrate desired properties of the guided swarm.

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### **2.3. CFN: SIAG/Control and Systems Theory Prize**

Contributed by: SIAM Prize Program, [prizeadmin@siam.org](mailto:prizeadmin@siam.org)

Deadline for Nominations Approaching - SIAG/CST Prize

SIAM is accepting nominations for the 2017 SIAG/Control and Systems Theory Prize (SIAG/CST Prize). Submit your nomination at [http://www.siam.org/prizes/nominations/nom\\_siag\\_cstprize.php](http://www.siam.org/prizes/nominations/nom_siag_cstprize.php). For inquiries, contact the SIAM Prize Program at [prizeadmin@siam.org](mailto:prizeadmin@siam.org).

The SIAG/CST Prize is awarded every two years to one individual in their early career for outstanding research contributions to the mathematical theory of control or systems. The SIAM Activity Group on Control and Systems Theory (SIAG/CST) will award the prize at the SIAM Conference on Control and its Applications (CT17), to be held jointly with the SIAM Annual Meeting, July 10-12, 2017, in Pittsburgh, PA, USA.

Eligibility Criteria:

The research must contain significant contributions to the mathematical theory of control or systems, as commonly defined in the mathematical and engineering literature. One key paper must be cited as evidencing the contributions, though a body of papers may be discussed in the nomination.

The qualifying key paper must have been published in English in a peer-reviewed journal. For the 2017 award, the paper must have been published between the dates of January 1, 2014 -December 31, 2016. The candidate must have been awarded their PhD no earlier than 2008. The key paper must have been published no more than six (6) years after the candidate received their PhD.

Nomination Deadline:

October 15, 2016

Required Materials:

Nominator's Letter of Recommendation for Candidate

Candidate's CV

Bibliographic Citation for Candidate's Key Contributing Paper

2-3 Letters of Support from experts in the field

Contact [prizeadmin@siam.org](mailto:prizeadmin@siam.org) with questions regarding nomination procedure.

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#### **2.4. CFN: SIAG/CST Best SICON Paper Prize**

Contributed by: SIAM Prize Program, [prizeadmin@siam.org](mailto:prizeadmin@siam.org)

Call for Nominations - SIAG/CST Best SICON Paper Prize

SIAM is accepting nominations for the 2017 SIAG/CST Best SICON Paper Prize. Submit your nomination at [http://www.siam.org/prizes/nominations/nom\\_best\\_sicon\\_paper.php](http://www.siam.org/prizes/nominations/nom_best_sicon_paper.php). For inquiries, contact the SIAM Prize Program at [prizeadmin@siam.org](mailto:prizeadmin@siam.org).

The SIAG/CST Best SICON Paper Prize is awarded every two years to the authors of the two most outstanding papers published in the SIAM Journal on Control and Optimization (SICON) in the two calendar years prior to the year of the award, as determined by the prize committee. The SIAM Activity Group on Control and Systems Theory (SIAG/CST) will award the prize at the SIAM Conference on Control and its Applications (CT17), to be held jointly with the SIAM Annual Meeting, July 10-12, 2017, in Pittsburgh, PA, USA.

Eligibility Criteria:

The qualifying paper must contain significant research contributions to the field of control and systems theory. For the 2017 award, the paper must have been published in SICON between the dates of January 1, 2015 - December 31, 2016.

Nomination Deadline:

February 15, 2017

Required Materials:

Nominator's Letter of Recommendation for Candidate

Bibliographic Citation for Candidate's Paper

Digital version of the Candidate's Paper (PDF preferred)

Contact [prizeadmin@siam.org](mailto:prizeadmin@siam.org) with questions regarding nomination procedure.

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### **3. Books**

#### **3.1. Lectures in Feedback Design for Multivariable Systems**

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

Lectures in Feedback Design for Multivariable Systems

by Alberto Isidori

ISBN: 978-3-319-42030-1

August 2016, Springer

Hardcover, 424 pages, \$99.00/euro 84.99

<http://www.springer.com/gp/book/9783319420301>

This book focuses on methods that relate, in one form or another, to the "small-gain theorem". It is aimed at readers who are interested in learning methods for the design of feedback laws for linear and nonlinear

multivariable systems in the presence of model uncertainties. With worked examples throughout, it includes both introductory material and more advanced topics.

Divided into two parts, the first covers relevant aspects of linear-systems theory, the second, nonlinear theory. In order to deepen readers' understanding, simpler single-input-single-output systems generally precede treatment of more complex multi-input-multi-output (MIMO) systems and linear systems precede nonlinear systems. This approach is used throughout, including in the final chapters, which explain the latest advanced ideas governing the stabilization, regulation, and tracking of nonlinear MIMO systems. Two major design problems are considered, both in the presence of model uncertainties: asymptotic stabilization with a "guaranteed region of attraction" of a given equilibrium point and asymptotic rejection of the effect of exogenous (disturbance) inputs on selected regulated outputs.

Much of the introductory instructional material in this book has been developed for teaching students, while the final coverage of nonlinear MIMO systems offers readers a first coordinated treatment of completely novel results. The worked examples presented provide the instructor with ready-to-use material to help students to understand the mathematical theory.

Readers should be familiar with the fundamentals of linear-systems and control theory. This book is a valuable resource for students following postgraduate programs in systems and control, as well as engineers working on the control of robotic, mechatronic and power systems.

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Contributed by: Kyriakos G. Vamvoudakis, [kyriakos@vt.edu](mailto:kyriakos@vt.edu)

Control of Complex Systems: Theory and Applications

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The book presents a variety of state-of-the-art methods for the control of complex systems. These methods cover the theory and applications of complex dynamical systems. Given the presence of modeling uncertainties, the unavailability of the model, and the possibility of cooperative/noncooperative goals and malicious attacks compromising the security of networked systems, there is a need for novel approaches to respond to situations not programmed or anticipated in the design. This book has five sections. The first section

provides an introduction to complex systems and background on the control mechanisms that will be used in the subsequent sections of the book to solve several problems. The second section provides techniques from adaptive control and neuroscience. Several adaptive learning algorithms from different perspectives are presented in the third section. Cyber-physical systems are an example of complex dynamical systems, and cooperative control for such systems is included as a collection of chapters in the fourth section. Finally, the fifth section provides real-world examples of complex systems.

#### Key Features

- Includes chapters from several well-known professors and researchers that showcase their recent work
- Presents different state-of-the-art control approaches and theory for complex systems
- Explores the presence of modelling uncertainties, the unavailability of the model, the possibility of cooperative/non-cooperative goals, and malicious attacks compromising the security of networked teams
- Serves as a helpful reference for researchers and control engineers working with machine learning, adaptive control, and automatic control systems

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## 4. Journals

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#### **4.2. Contents: Control Theory and Technology**

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Control Theory and Technology

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#### 4.4. Contents: Journal of Dynamical and Control Systems

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#### **4.6. Contents: International Journal of Applied Mathematics and Computer Science**

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International Journal of Applied Mathematics and Computer Science (AMCS)

2016, Volume 26, Number 3 (September)

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#### **4.7. Contents: TWMS Journal of Pure and Applied Mathematics**

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

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- Discontinuous  $H_\infty$  Control of Underactuated Mechanical Systems with Friction and Backlash, Raul Rascon\*, Joaquin Alvarez, and Luis T. Aguilar 1213-1222
- Consensus Gain Conditions of Stochastic Multi-agent System with Communication Noise, Jianchang Liu, Pingsong Ming\*, and Songhua Li 1223-1230
- Forwarding-based Trajectory Tracking Control for Nonlinear Systems with Bounded Unknown Disturbances, Xu Zhang, Xianlin Huang\*, and Hongqian Lu 1231-1243

- Lumped Disturbance Compensation using Extended Kalman Filter for Permanent Magnet Linear Motor System, Jonghwa Kim, Kwanghyun Cho, and Seibum Choi\* 1244-1253
- Observer-based  $H_\infty$  Guaranteed Cost Control for Uncertain Singular Time-delay Systems with Input Saturation, Yuechao Ma and Yifang Yan\* 1254-1261
- Stability Analysis of Switched Delay Systems with All Subsystems Unstable, Qingzhi Wang, Haibin Sun, and Guangdeng Zong\* 1262-1269
- Nonlinear Control for Rotational Movement of Cart-pendulum System Using Homoclinic Orbit, Hiroya Oka, Yuji Maruki, Haruo Suemitsu, and Takami Matsuo\* 1270-1279
- Stochastic Admissibility and Stabilization of Singular Markovian Jump Systems with Multiple Time-varying Delays, Baoping Jiang\*, Cunchen Gao, and Yonggui Kao 1280-1288
- Angular Velocity Observer for Attitude Tracking on  $SO(3)$  with the Separation Property, Tse-Huai Wu\* and Taeyoung Lee 1289-1298
- Integrated Guidance and Control Design based on a Reference Model, Jian Chen, Qingdong Li, Cunjia Liu, Peng Li, and Zhang Ren\* 1299-1308
- Quality Improvement of Shunt Active Power Filter with Direct Instantaneous Power Estimator Based on Virtual Flux, Salem Saidi\*, Rabeh Abbassi, and Souad Chebbi 1309-1321
- Design of Modular Gripper for Explosive Ordinance Disposal Robot Manipulator Based on Modified Dual-Mode Twisting Actuation, Ho Ju Lee, Jae-Kwan Ryu, Jongwon Kim, Young June Shin, Kyung-Soo Kim\*, and Soohyun Kim 1322-1330
- Three-dimensional Locomotion Control of Single-legged Robot: Resonance Hopping and Running Direction, Tae Hun Kang and Jeon Il Moon\* 1331-1339
- Guaranteed Cost Non-fragile Tracking Control for Omnidirectional Rehabilitative Training Walker with Velocity Constraints, Ping Sun\* and Shuoyu Wang 1340-1351
- Obstacle Avoidance with Translational and Efficient Rotational Motion Control Considering Movable Gaps and Footprint for Autonomous Mobile Robot, Ayanori Yorozu\* and Masaki Takahashi 1352-1364
- Adaptive Control for Robot Manipulators using Multiple Parameter Models, Shafiqul Islam\*, Peter X. Liu, Jorge Dias, and Lakmal D. Seneviratne 1365-1375
- Improved Position Tracking Performance of a Pneumatic Actuator using a Fuzzy Logic Controller with Velocity, System Lag and Friction Compensation, Vahid Nazari and Brian Surgenor\* 1376-1388
- Inverse Statics Analysis of Planar Parallel Manipulators via Grassmann-Cayley Algebra, Kefei Wen, Jeh Won Lee\*, and TaeWon Seo\* 1389-1394

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## 5. Conferences

### 5.1. Chinese Control Conference

Contributed by: Tao Liu, [liurouter@ieee.org](mailto:liurouter@ieee.org)

The 36th Chinese Control Conference (CCC2017)

<http://ccc2017.dlut.edu.cn>

Chinese Control Conference (CCC) is a well-reputed international control conference, the largest control conference in Asia, which is held annually with 1500+ attendees in the past three years. The 36th CCC will be held from Wednesday to Friday, July 26-28, 2017, in Dalian, China. CCC is initiated by the Technical Committee on Control Theory (TCCT), Chinese Association of Automation (CAA). It aims to bring together the international community of systems & control to discuss the latest findings & advances in control theories

& technologies. CCC2017 will feature plenary lectures, contributed & invited papers, panel discussions, preconference workshops, oral presentation sessions & interactive sessions. The conference language will be both Chinese and English. The papers of CCC in English will be included in the IEEE Xplore library and indexed by EI Compendex.

Dalian is an outstanding traveling tourist city in China, honored as a Pearl of the North China & a City of Romance. There is a light blue sky, dark blue sea, and undulating coast, where you can enjoy the beautiful coastal scenery and taste local delicious seafood. The conference venue, Dalian International Conference Center, is a very majestic building of structuralism, which has been the main venue of the Summer Davos Forum in China.

Welcome to Dalian for CCC2017!

Invited Plenary Lectures will be delivered by

Prof. Karl Johan Åström, Lund University, Sweden;

Prof. Tianyou Cai, Northeastern University, China;

Prof. Stephen Morse, Yale University, USA;

Prof. Denis Dochain, Université Catholique de Louvain, Belgium;

Prof. Jie Chen, City University of Hong Kong, Hong Kong;

Prof. Xiaohua Xia, University of Pretoria, South Africa;

Prof. Zongben Xu, Xi'an Jiaotong University, China.

Submission Information for Authors:

1. All submissions (including papers, proposals of invited sessions) should be completed via the conference website <http://ccc2017.dlut.edu.cn>
2. The CCC presents the Guan Zhao-Zhi Best Paper Prize and the Best Poster Award. Detailed application information can be found at <http://ccc2017.dlut.edu.cn>
3. Invited session proposals should include a package consisting of a proposal about 1000 words and a list of all the invited papers including the paper titles, abstracts, and the authors' names & affiliations. Typically, an invited session consists of 6 papers.

Important dates:

Deadline for all submissions: December 15th, 2016

Notification of acceptance: April 1st, 2017

Final submission: April 30th, 2017

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## **5.2. International Symposium on Neural Networks**

Contributed by: Nian Zhang, [nzhang@udc.edu](mailto:nzhang@udc.edu)

Call for Papers:

The 14th International Symposium on Neural Networks (ISNN 2017) in Sapporo, Hokkaido, Japan, June 21-23, 2017

Conference Website: <https://conference.cs.cityu.edu.hk/isnn/>

Following the successes of previous events, the 14th International Symposium on Neural Networks (ISNN 2017) will be held in Sapporo, Hokkaido, Japan. Located in northern island of Hokkaido, Sapporo is the fourth largest Japanese city and a popular summer/winter tourist venue.

The Sponsors/Organizers are Hokkaido University and City University of Hong Kong. The Technical Co-sponsors are IEEE Computational Intelligence Society, International Neural Network Society, and Japanese



Neural Network Society. The Publishers are Springer and Lecture Notes in Computer Science.

ISNN 2017 aims to provide a high-level international forum for scientists, engineers, and educators to present the state of the art of neural network research and applications in related fields. The symposium will feature plenary speeches given by world renowned scholars, regular sessions with broad coverage, and special sessions focusing on popular topics.

#### Call for Papers and Special Sessions

Prospective authors are invited to contribute high-quality papers to ISNN 2017. In addition, proposals for special sessions within the technical scopes of the symposium are solicited. Special sessions, to be organized by internationally recognized experts, aim to bring together researchers in special focused topics. Papers submitted for special sessions are to be peer-reviewed with the same criteria used for the contributed papers. Researchers interested in organizing special sessions are invited to submit formal proposals to ISNN 2017. A special session proposal should include the session title, a brief description of the scope and motivation, names, contact information and brief biographical information of the organizers.

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

Contributed by: Jose García-Tirado, [ieeccac2017@gmail.com](mailto:ieeccac2017@gmail.com)

#### First Call for Papers

##### 3rd IEEE Colombian Conference on Automatic Control 2017

Scope: The 3rd IEEE Colombian Conference on Automatic Control (CCAC) will be held on October 18-20, 2017 in Cartagena-Colombia. The objective of the Conference is to gather academic and industrial researchers and practitioners, to discuss the state of the art, research and developments in advance control-robotics and its applications for sharing and encouraging technology development in Colombia and the Latin American region. The thematic emphasis of the Conference will be covering the theory, the implementation issues and the experiences related to the applications of control, automation and robotics methods in research, academy and industry. The main 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, process and power systems, process automation, process optimization, sensing and sensor fusion, system identification, systems and signals, control in power electronics and electrical drives.

#### Important Dates:

- May 9, 2017 Papers submission deadline
- June 30, 2017 Papers acceptance notification
- August 11, 2017 Final manuscripts in camera-ready format

Paper submission: The program committee invites you to submit 4 to 6 pages long papers in English or Spanish through [www.ieeccac2017.org](http://www.ieeccac2017.org)

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. The paper format and submission instructions are available at [www.ieeelarc.org](http://www.ieeelarc.org). All articles will be published in the Conference Proceedings. Only English versions will be published in IEEEExplore.

Venue: The conference will be held at Cartagena de Indias, city on the northern coast of Colombia in the Caribbean Coast Region and capital of the Bolívar Department. It is the fifth-largest city in Colombia

and the second largest in the region, after Barranquilla. The Cartagena urban area is also the fifth largest urban area in the country. Economic activities include maritime and petrochemicals industry, as well as tourism. During the colonial period Cartagena served a key role in administration and expansion of the Spanish empire. It was a center of political and economic activity due to the presence of royalty and wealthy viceroys. In 1984, Cartagena's colonial walled city and fortress were designated a UNESCO World Heritage Site. (further details soon).

Contact: Additional details and Conference updates are available at: <http://www.ieeeccac2017.org>  
Inquiries and doubts about the Conference may be addressed to: [info@ieecccac2017.org](mailto:info@ieecccac2017.org)

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#### **5.4. International Conference on Systems and Control**

Contributed by: Driss MEHDI, [driss.mehdi@univ-poitiers.fr](mailto:driss.mehdi@univ-poitiers.fr)

The 6th 2017 International Conference on Systems and Control

The 6th edition of the International Conference on Systems and Control will be held on April 23-25, 2017, at the University of Batna 2, Batna, Algeria.

Topics of interest include but not limited: Linear and nonlinear systems, Modeling of complex systems, Robust control and H-infty control, Stochastic control, Estimations and identification, Variable structure Systems, Observation and Observer, Multivariable control, Time-delay systems, Industrial control, Manufacturing systems, Intelligent and AI based control, Mathematical systems theory, Fuzzy and neural systems, Robotics, Control algorithms implementation, Control applications, Control education, Guidance and control theory, Motion control, Optimal control, Real time systems, Mechatronics, Networks optimization, Fault detection, Power systems, Modeling and simulation, Optimization, Process control and instrumentation, Control of telecommunications systems

Paper submission: Papers must be submitted electronically via the Web upload system only at

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

for more information please visit the web site of the conference at

<http://lias.labo.univ-poitiers.fr/icsc/icsc2017/>.

Important Dates:

Submission Site closing January 15th, 2017

Decision notification : February 15th, 2017,

Final paper submission : March 5th, 2017,

Congress opening April 23, 2017.

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#### **5.5. International Symposium on Distributed Autonomous Robotic Systems**

Contributed by: Roderich Gross, [r.gross@sheffield.ac.uk](mailto:r.gross@sheffield.ac.uk)

CALL FOR PARTICIPATION - DARS 2016

13th International Symposium on Distributed Autonomous Robotic Systems

November 6-9, 2016. Natural History Museum, London, UK

<http://dars2016.org>

We warmly invite you to participate in DARS 2016. Now in its 13th edition, DARS provides a forum for scientific advances in the theory and practice of distributed autonomous robotic systems.

Distributed robotics is an interdisciplinary and rapidly growing area, combining research in computer science, communication and control systems, and electrical and mechanical engineering. Distributed robotic systems can autonomously solve complex problems while operating in highly unstructured real-world environments. They are expected to play a major role in addressing future societal needs, for example, by improving environmental impact assessment, food supply, transportation, manufacturing, security, and emergency and rescue services.

DARS 2016 will build upon past successes and provide an exciting environment to present and discuss the latest technologies, algorithms, system architectures, and applications. The single-track symposium features a strong technical program, international keynote speakers, a welcome reception in a beautiful Victorian townhouse, a banquet offering finest Polish cuisine, and ample opportunity to network.

Fittingly, DARS 2016 will be located in the famed Natural History Museum in London, a powerhouse of scientific enquiry and a voice of authority on the natural world. Its central location in London will give you the opportunity to explore the fabulous Kensington neighborhood, and provide easy access to the wider London area.

#### REGISTRATION

Registration for DARS 2016 is open:

<http://dars2016.org/registration/>

Normal registration till 14 October

Late / on-site registration from 15 October (subject to availability)

#### KEYNOTES

- Coordination, cooperation, and collaboration in multi-robot systems (Vijay Kumar - University of Pennsylvania, USA)
- Go to the bee and be wise: Swarm engineering inspired by house-hunting honeybees (James AR Marshall - The University of Sheffield, UK)
- Material-integrated intelligence for robot autonomy (Nikolaus Correll - University of Colorado Boulder, USA)
- Robust human control of multi-robot swarms (Katia Sycara - Carnegie Mellon University, USA)

#### TECHNICAL PROGRAM

The full technical program can be found here:

<http://dars2016.org/program/>

#### ACCOMMODATION

Special rates have been reserved for DARS participants at some hotels and will be allocated on a first-come first-served basis:

<http://dars2016.org/accommodation/>

#### SOCIAL EVENTS

DARS 2016 is above all a social event for the advancement of knowledge in distributed autonomous robotic systems. Social events will include a welcome reception, poster & lunch sessions, a banquet and the presentation of the awards:

<http://dars2016.org/social-events/>

#### SPONSORS & EXHIBITORS

DARS is technically co-sponsored by the IEEE Robotics and Automation Society. Vicon Motion Systems is a Platinum Sponsor of DARS 2016.

If you wish to become a sponsor of, or exhibitor at, DARS 2016, please visit <http://dars2016.org> .

## SOCIAL MEDIA

Follow us on social media for all the latest updates.

Facebook: <https://www.facebook.com/DARSSymposium>

Twitter: <https://twitter.com/DARS2016>

Google+: <https://plus.google.com/104027908184261516130>

More information at

<http://dars2016.org>

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### 5.6. CDC Workshop: “Robust and Quantum Control Theory”

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

CDC Workshop WS21 - Robust and Quantum Control Theory: A Workshop Dedicated to Ian R Petersen’s 60th Birthday

Organizers: Daoyi Dong (University of New South Wales, Australia), S. O. Reza Moheimani (University of Texas at Dallas, USA), Valery Ougrinovski (University of New South Wales, Australia)

Speakers: B. Ross Barmish (University of Wisconsin, USA), Matthew R. James (Australian National University, Australia), S. O. Reza Moheimani (University of Texas at Dallas, USA), Valery Ougrinovski (University of New South Wales, Australia), Alexander Lanzon (University of Manchester, UK), Andrey V. Savkin (University of New South Wales, Australia)

Abstract: Ian R. Petersen, a Fellow of the IEEE and the IFAC, a key figure in the development of robust and quantum control theory, and an ARC Laureate Fellow at UNSW Canberra, will turn 60 this year. We propose to celebrate this occasion with a half-day workshop as well as a following dinner reception (8:00 pm-10:00 pm). This workshop brings together 6 of his collaborators and former postdocs and students who will present a broad range of contemporary topics in different areas of systems and control theory. These talks involve: On a state-space model for matching buyers and sellers in the stock market; Linear quantum systems theory: An overview; Fast estimation of amplitude and phase in high-speed dynamic mode atomic force microscopy; On distributed robust estimation via optimization of  $H_\infty$  disagreement and minimum energy; Negative imaginary systems theory: An overview; Robust control theory framework for safe autonomous robot navigation.

Target Audience: All are welcomed. For more information, please see

<http://cdc2016.ieeecss.org/workshops.php#w21>

<https://sites.google.com/site/dongdaoyi/join-us>

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### 5.7. CDC Workshop: “Solving Large-Scale Semidefinite Programs (SDPs) in Control, Machine Learning, and Robotics”

Contributed by: Amir Ali Ahmadi, [a\\_a\\_a@princeton.edu](mailto:a_a_a@princeton.edu)

Dear friends and colleagues,

We are organizing a one-day workshop on “Solving large-scale semidefinite programs (SDPs) in control, machine learning, and robotics” at the 55th Annual Conference on Decision and Control, in Las Vegas (<http://cdc2016.ieeecss.org/>). The date of the workshop is on Sunday, December 11, 2016.

We have a great lineup of speakers to cover recent algorithmic and mathematical innovations around large-scale SDPs. You can find more information about the format of the event by clicking on the Workshop Proposal link here:

<http://aaa.princeton.edu/largesdps>

Registration for the CDC conference (in addition to registration to the workshop) is required for workshop attendance. The early registration deadline is September 30th (<http://cdc2016.ieeecss.org/registration.php>).

Kindly share this email with students/postdocs/colleagues who might be interested.

Amir Ali Ahmadi

Assistant Professor, Princeton ORFE

<http://aaa.princeton.edu/>

Georgina Hall

Graduate Student, Princeton ORFE

<http://scholar.princeton.edu/ghall>

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## 5.8. IFAC World Congress Open Invited Track: “Event-Triggered and Self-Triggered Control”

Contributed by: Sandra Hirche, [hirche@tum.de](mailto:hirche@tum.de)

Open invited track on “Event-triggered and self-triggered control” at the IFAC World Congress 2017 in Toulouse, France

We were approached by the organisers of IFAC WC 2017 to setup an open invited track on ETC and STC for their conference. We decided to go for that. It is a new sort of open session and there is no strict upper limit on the number of papers submitted. Also we do not have to cluster the papers in sessions; this will be done by the IPC (probably in consultancy with us), see <https://www.ifac2017.org/OIT> for more details.

The deadline for submitting papers is 31 october 2016. See also <https://www.ifac2017.org>.

If you decide to submit to this track please use the code below to direct your submission to it. Essentially, you do not have to inform us that you are submitting as it will be handled by the IPC of the conference (via TC 1.5 ‘networked systems’ and TC 1.3 ‘discrete-event and hybrid systems’)

Details:

Title: Event-triggered and self-triggered control

Track proposed by: W.P.M.H. Heemels (Eindhoven University of Technology, The Netherlands), S. Hirche (Technische Universität München, Germany), and K.H. Johansson (KTH, Sweden)

Abstract: Recent developments in computer and communication technologies are leading to an increasingly networked and wireless world. This raises new challenging questions in the context of networked control and cyber-physical systems, especially when the computation, communication, and energy resources of the system are limited. To efficiently use the available resources, it is desirable to limit the control actions to instances when the system really needs attention. Unfortunately, the classical time-triggered control paradigm is based on performing sensing and actuation actions periodically in time (irrespective of the state of the system) rather than when the system needs attention. Therefore, it is of interest to consider event-triggered control (ETC) and self-triggered control (STC) as alternative paradigms that trigger control actions based on the system state, output, or other available information. ETC and STC can thus be seen as control strategies introducing feedback in the sensing, communication, and actuation processes. To enable the wide exploitation of these aperiodic control concepts in various domains, there is a strong need for both a rigorous system theory and proof-of-concepts of the main ideas in experimental and real-life applications. To support the development of this system theory and stimulate the application of ETC and STC, we organise a special track in the IFAC World Congress that will present recent advances in the area of ETC and STC

and their applications.

Website: none

Code for submitting contributions: 179fp

We hope you will consider submitting your finest work to this invited track. Please forward this information to anybody who might potentially be interested.

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### **5.9. IFAC World Congress Open Invited Track: “Design of Fault Diagnosis and Fault-Tolerant Control methods in Unmanned Aerial Vehicle/Fleet”**

Contributed by: Marcin Witczak, [M.Witczak@issi.uz.zgora.pl](mailto:M.Witczak@issi.uz.zgora.pl)

CFP: “Design of Fault Diagnosis and Fault-Tolerant Control methods in Unmanned Aerial Vehicle/Fleet” Track at IFAC World Congress 2017

Contributed by: Marcin Witczak, [M.Witczak@issi.uz.zgora.pl](mailto:M.Witczak@issi.uz.zgora.pl)

We would like to kindly draw your attention to the open invited track at the IFAC World Congress, July 9-14, 2017, Toulouse, France untitled Design of Fault Diagnosis and Fault-Tolerant Control methods in Unmanned Aerial Vehicle/Fleet.

Open Invited Track Submission Code: 7t459

The objective of this open invited track (see <https://www.ifac2017.org/invited> for more details about open invited tracks) is to present recent significant advances, developments and applications in the design of Fault Diagnosis (FD) and Fault-Tolerant Control (FTC) methods devoted to Unmanned Aerial Vehicle/Fleet. The Open Invited track session will consider linear and nonlinear techniques for modeling, fault diagnosis, fault-tolerant control, path and trajectory planning/re-planning, cooperative/formation flight guidance, navigation and control.

Important Dates:

- 1 Draft paper submission deadline: October 31, 2016
- 2 Notification of acceptance/rejection: February 20, 2017
- 3 Final paper submission deadline: March 31, 2017
- 4 IFAC World Congress: July 9-14, 2017.

Submission procedure can be found at <https://www.ifac2017.org/submit>

Weblink on Open invited track can be found at: <https://www.ifac2017.org/OIT#7t459>

Track Organizers:

Didier Theilliol (Universite de Lorraine)

Marcin Witczak (University of Zielona Gora)

Youmin Zhang (Concordia University)

Please feel free to forward this message to researchers and colleagues. In case of any further questions please do not hesitate to contact us.

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### **5.10. IFAC World Congress Open Invited Track: “Modelling, Identification and Control of Quantum Systems”**

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

CFP: “Modelling, identification and control of quantum systems” Open Invited Track at IFAC World Congress 2017

Submissions invited for “Modelling, identification and control of quantum systems” Open Invited Track at IFAC World Congress 2017

We kindly invite you to submit your papers to the Open Invited Track on:

“Modelling, identification and control of quantum systems”,

organized as part of the IFAC World Congress 2017, Toulouse, France, July 2017.

Topics include but not limited to

- Modelling and analysis of quantum control systems
- State estimation of quantum systems
- Hamiltonian identification of quantum systems
- Parameter identification of open quantum systems
- Linear quantum systems theory
- Quantum optimal control
- Quantum robust control
- Quantum measurement-based feedback and quantum coherent feedback
- Learning control of quantum systems
- Quantum control applications in molecular systems, quantum metrology and quantum information

Deadline for submission of papers is October 31, 2016.

For details, please see the IFAC World Congress’s website:

<https://www.ifac2017.org/OIT#5mny2>

Open Invited Track Organizers:

Daoyi Dong (University of New South Wales, Australia)

Naoki Yamamoto (Keio University, Japan)

Rebing Wu (Tsinghua University, China)

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## 6. Positions

### 6.1. MS Intern: University of Lorraine, France

Contributed by: Samuel Martin, [samuel.martin@univ-lorraine.fr](mailto:samuel.martin@univ-lorraine.fr)

Masters student research internship position available

Title: “Data analysis for opinion dynamics in on-line social networks”

Duration: 3-6months starting between February and April 2017

Contact: [samuel.martin@univ-lorraine.fr](mailto:samuel.martin@univ-lorraine.fr)

<http://w3.cran.univ-lorraine.fr/perso/samuel.martin/index.php>

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### 6.2. PhD: CNRS, France

Contributed by: Hannah-Christina Walter, [Hannah-Christina.Walter@gipsa-lab.fr](mailto:Hannah-Christina.Walter@gipsa-lab.fr)

PhD: CNRS, Grenoble, France.

PhD position: EVOLUTIONARY SCALE-FREE MODELS FOR LARGE SCALE COMPLEX NETWORKS

NeCS group (joint CNRS (GIPSA-lab)-INRIA team), in Collaboration with the University of Padova.

Supervisors: Carlos Canudas-de-Wit (CNRSmain supervisor), Sandro Zampieri (UDP co-supervisor).

Context: ERC-AdG Scale-FreeBack

TOPIC DESCRIPTION. This research proposal deals with the problem of setting up a suitable modelling framework for complex systems corresponding to large-scale networks. The original system is assumed to describe a homogenous network in which the node/link distribution of  $G$  gives a bell-shaped, exponentially decaying curve. Homogenous networks cover many critical systems of interest (such as road traffic networks, power grids, water distribution systems, etc.), but are inherently complex. Scale-FreeBack is elaborated on the idea that complexity can be broken down by abstracting an aggregated scale-free model (represented by a network with a power law degree distribution), by merging/lumping neighboring nodes in the original network. In that, super-nodes (nodes with a lot of connections) are created and represented by “aggregated” variables. Controlling only boundary inputs and observing only aggregated variables allows to cut-off the system complexity. The following questions will be addressed:

- 1) Defining the most suitable level of aggregation for the model. This boils down to defining and sizing the state-vector, the control inputs and outputs. A first question is how to define the right level of aggregation, and investigate new metrics trading quantifiers reflecting an optimal level of scalability (a suited node/link distribution) of the associated network graph, with other performance indexes reflecting the system’s closed-loop operation.
- 2) The second question focuses on how the aggregation process, in addition to the scale-free property, will yield models consistent with the design of control and the observation goals. The aggregation process will have to include observability and controllability properties which are consistent with the evolutionary nature of scale-free aggregated models (aggregation process is evolutionary in the sense that the network changes and so the aggregated modules will change accordingly while preserving the scale-free properties).
- 3) Finally, innovative concepts such as peripheral controllability (i.e. controlling the boundary flows in a lumped node rather than controlling each single node separately), and energy-weighted controllability metrics (where controllability is qualified by assessing the energy costs as a function of the controllable nodes [Zamet-al’14]) will be extended in this project to the context of scale-free models. While only open loop metrics have been considered so far, we aim to propose new closed loop metrics also taking inspiration from road traffic networks application. Moreover we intend to extend these concepts to the estimation and monitoring by investigating the observability of aggregated networks. Finally, we will propose and investigate different new weak notions of controllability/observability in which the controllability/observability is determined with respect to a limited subspace (peripheral and/or sparse controllability/observability)

QUALIFICATION: knowledge and mathematical background in systems and control theory, Complex and/or networked controlled systems.

EMPLOYMENT AND CONTEXT: This full-time position for 3 years. The position will be open from Sept 2016 until filled. In our NeCS team at Grenoble, we offer a dynamical research environment with a strong activity in networked controlled systems. This PhD position is part of the large research project Scale-FreeBack ERC Advanced Grant 2016-2021. The ERC is hosted by the CNRS, and the project will be conducted within the NeCS group (which is a joint CNRS (GIPSA-lab)-INRIA team).

APPLICATIONS: Please follow instructions:

<http://www.gipsa-lab.grenoble-inp.fr/~carlos.canudas-de-wit/ERC.php>

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### 6.3. PhD: CNRS, France

Contributed by: Hannah-Christina Walter, [Hannah-Christina.Walter@gipsa-lab.fr](mailto:Hannah-Christina.Walter@gipsa-lab.fr)

PhD position: ON-LINE PARTITIONING ALGORITHMS FOR EVOLUTIONARY SCALE-FREE NETWORKS



CNRS, Grenoble, France.

A phd position is available at the GIPSA-lab, CNRS in Grenoble, France, on the topic “On-line Partitioning Algorithms for Evolutionary Scale-free Networks”. The proposed research will be part of the Scale-FreeBack ERC grant and will be performed under the joint supervision of Carlos Canudas-de-Wit and of Paolo Frasca.

Scale-FreeBack is an ERC Advanced Grant 2015 awarded to Carlos Canudas-de-Wit, Director of Research at the National Center for Scientific Research, (CNRS), during Sept. 2016-2021. The ERC is hosted by the CNRS. The project will be conducted within the NeCS group (which is a joint CNRS (GIPSA-lab)-INRIA team). Scale-FreeBack is a project with ambitious and innovative theoretical goals, which were adopted in view of the new opportunities presented by the latest large-scale sensing technologies.

Qualifications: knowledge and mathematical background in systems and control theory, Complex and/or networked controlled systems.

Detailed information on the position is available at

<http://www.gipsa-lab.grenoble-inp.fr/carlos.canudas-de-wit/ERC.php>

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#### **6.4. PhD: University of North Texas, USA**

Contributed by: Tao Yang, [Tao.Yang@unt.edu](mailto:Tao.Yang@unt.edu)

Multiple fully funded Ph.D. positions are available starting immediately in the Department of Electrical Engineering at the University of North Texas.

The research areas of these positions are generally related to network control, distributed optimization, cyber-physical systems, and their applications to power system, unmanned aerial vehicles and transportation applications.

Required qualifications:

- (1) B.S. degree in engineering field related to control and/or power systems
- (2) Strong background in systems and control, optimization, and mathematics
- (3) Excellent writing and communication skills
- (4) Proficiency in programming languages, such as MATLAB, C/C++, Julia, Python, etc

Preferred qualifications:

- (1) M.S. degree
- (2) Previous research experience in control systems and/or power systems with a good publication record
- (3) Previous research experience on networked control systems, distributed control and optimization for power systems application, building and/or unmanned aerial vehicles is a plus.

Interested applicants please send the application to Dr. Tao Yang by email: [Tao.Yang@unt.edu](mailto:Tao.Yang@unt.edu). Please send one single pdf document that includes a 1-page cover letter that states their qualifications and career plans, detailed CV, transcripts, and a list of professional references.

Information about UNT

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

excellent school districts.

The Electrical Engineering Department offers BS, MS, and Ph.D. degrees in electrical engineering. It is home to over 400 undergraduate and graduate students. Additional information about the department is available at the website: <http://engineering.unt.edu/electrical/>.

More information is available on <https://engineering.unt.edu/electrical/tao-yang>

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### **6.5. PhD: KTH, Sweden**

Contributed by: Dimos Dimarogonas, [dimos@kth.se](mailto:dimos@kth.se)

Two PhD positions in distributed hybrid control systems are available at KTH. The full announcement and details on the requirements for the positions can be found here:

<https://www.kth.se/en/om/work-at-kth/lediga-jobb/what:job/jobID:114226/where:4/>

For any further required information, please contact Assoc. Prof. Dimos Dimarogonas, [dimos@kth.se](mailto:dimos@kth.se), <http://people.kth.se/~dimos/>.

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### **6.6. PhD: TU Berlin, Germany**

Contributed by: Christian Hans, [hans@control.tu-berlin.de](mailto:hans@control.tu-berlin.de)

2 PhD positions at TU Berlin

In the context of the 6th Energy Research Program (“Research for an environmentally-friendly, reliable and affordable energy supply”), the Federal Ministry of Economic Affairs and Energy (BMWi) will fund a project on “Distributed energy management for microgrids with high share of renewable energy infeed”. The objective of the project is to develop a plug-and-play energy management (EM) for electric power systems with high share of renewable energy sources (RES). This EM should be able to continuously adapt to the changing structure of the network and hence to allow for the optimal operation of the installed units in all conditions. Consequently, new units will be integrated automatically and seamlessly into the EM. To assess the practical applicability, the EM will be tested in a Hardware-in-the-loop simulator. Furthermore, it will be used for the operation of a 200kW microgrid testbed.

The BMWi will fund two research assistants / PhD students in the Control Systems Group at TU Berlin ([www.control.tu-berlin.de](http://www.control.tu-berlin.de)). They will primarily focus on control theoretic aspects within this project. They will interact closely with an industrial partner. We expect the two research assistants to work towards a PhD during this project. Salary will be according to the pay-scale E13 TV-L Berliner Hochschulen (full time). The position will be available for three years, starting in October 2016.

Requirements:

As a successful candidate you should have

- a university degree (Master, Diploma or equivalent) in Electrical Engineering, Engineering Cybernetics, Applied Mathematics, etc.
- excellent knowledge in automatic control and numerical optimization
- basic knowledge in electrical power engineering and microgrids
- the ability and motivation for interdisciplinary cooperation
- excellent English language skills

How to apply

Please send your application with reference name “EMERGE” before October 7th 2016 to

[hans@control.tu-berlin.de](mailto:hans@control.tu-berlin.de)

To ensure equal opportunities between women and men, applications by women with the required qualifications are explicitly desired. Qualified individuals with disabilities will be favored.

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### **6.7. PhD: University of Groningen, Netherlands**

Contributed by: Ming Cao, [ming.cao@ieee.org](mailto:ming.cao@ieee.org)

PhD position at the University of Groningen, the Netherlands

Institute of Engineering and Technology

University of Groningen, the Netherlands

Project title: Distributed coordination of autonomous agents in complex networks

General description: This project is funded by the Dutch Organization for Scientific Research (NWO). The aim is to study how to design novel strategies and algorithms to coordinate large numbers of autonomous agents coupled together through local interactions. The PhD position is for 4 years and the starting gross salary is about euro 2000 per month in the first year and increases to about euro 2600 gross per month in the final year. After the first year, there will be an evaluation. The position will start in 2017.

Research group profile: The Department of Discrete Technology and Production Automation (DTPA) at the University of Groningen, the Netherlands, provides a leading education and research environment for students and researchers who are interested in the inter-disciplinary study in engineering, computer science, mathematics and applied sciences in general. The research activities at DTPA focus on developing quantitative and analytical theories and methodologies for complex industrial processes and systems, such as autonomous robots, sensor networks, micro-assemblies, energy systems and space systems. The research of the group is funded by both public agencies and industrial partners.

Candidate profile: Applicants should have a Master's degree in one of the following disciplines: electrical or mechanical engineering, applied mathematics, computer science or applied physics. It is desirable for the applicants to have solid knowledge about systems and control theory or network theory.

Application: Applicants must submit the following materials:

- Curriculum vitae;
- Transcripts;
- List of two references

These should be emailed to Prof. Ming Cao ([ming.cao@ieee.org](mailto:ming.cao@ieee.org)), who is available for further inquiry.

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### **6.8. PostDoc: University of Washington & University of Texas at Austin, USA**

Contributed by: Behcet Acikmese, [behcet@uw.edu](mailto:behcet@uw.edu)

Postdoctoral researcher opportunity

Description:

A postdoctoral researcher position is available. The research objective is to develop analytical and numerical methods to bring together optimization based control with formal methods.

The position will be a joint appointment with University of Washington (UW), Seattle, and University of Texas at Austin (UT). Primary advisor is Behcet Acikmese (UW) and secondary advisor is Ufuk Topcu (UT). The position is available for one year with a possibility of second year.

Required qualifications:

- PhD in control theory, optimization, computer science or a relevant field.
- Strong background in optimization and control theory. Formal methods background is valuable.
- Experience with numerical optimization, particularly with convex optimization and mixed integer convex programming.

The application should include

- CV
- Statement of purpose
- List of at least three references

Please contact Behcet Acikmese

Email: [behcet@uw.edu](mailto:behcet@uw.edu)

<http://www.aa.washington.edu/people/faculty/acikmese>

<http://www.aa.washington.edu/research/acl>

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### **6.9. PostDoc: Colorado School of Mines & University of Colorado Boulder, USA**

Contributed by: Lucy Pao, [pao@colorado.edu](mailto:pao@colorado.edu)

We are seeking an outstanding post-doctoral researcher for the development, validation, implementation, and experimental field testing of controllers for a novel wind turbine rotor design. This post-doctoral position is available starting approximately April 2017 for a duration of up to 24 months. Candidates should have a strong background in aerospace, mechanical, and/or electrical engineering with a specialization in control systems, and have strong hands-on experimental skills. Familiarity with issues related to the control of wind turbines and NREL-developed software tools for evaluating wind turbine control algorithms will be beneficial, as will leadership and mentoring skills. The candidate will work as part of a collaborative, creative, interdisciplinary team and should have excellent written and oral communication skills. The position will be jointly appointed at both Colorado School of Mines (Golden, CO) and University of Colorado Boulder (Boulder, CO), and the applicant must meet requirements to gain site access at the US National Renewable Energy Laboratory where the field testing will be performed.

To apply for the position, please send the following all in one PDF file to both email addresses below: (1) a cover letter summarizing your interest, (2) CV, and (3) contact information for at least three references.

Professor Kathryn E. Johnson

Electrical Engr. & Computer Sci. Dept.

Colorado School of Mines

1610 Illinois St.

Golden, CO 80401 USA

Email: [kjohnson@mines.edu](mailto:kjohnson@mines.edu)

<http://inside.mines.edu/~kjohnson/>

Professor Lucy Y. Pao

Electrical, Computer, & Energy Engr. Dept.

425 UCB

University of Colorado Boulder

Boulder, CO 80304 USA

Email: [pao@colorado.edu](mailto:pao@colorado.edu)

<http://ecee.colorado.edu/~pao>

For more information, see <https://inside.mines.edu/~kjohnson/postdoc.html> and <http://ecee.colorado.edu/~pao/SUMR-controls-postdoc>

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### **6.10. PostDoc: IMT School for Advanced Studies Lucca, Italy**

Contributed by: Alberto Bemporad, [alberto.bemporad@imtlucca.it](mailto:alberto.bemporad@imtlucca.it)

The Dynamical Systems, Control, and Optimization group of the IMT School for Advanced Studies Lucca (Italy) is seeking candidates for a post-doctoral position within the framework of the H2020-SPIRE project "DISIRE" funded by the European Commission. The applicant is required to have a Ph.D. in engineering, applied mathematics, or equivalent, with a focus on optimization, control, or systems identification, earned before the starting date of the appointment. Experience in model predictive control, convex optimization methods, or systems identification/machine learning algorithms will be considered as a plus.

Candidates must have a strong theoretical background, the ability or willingness to apply the research methodologies to case studies of industrial interest, and an excellent level of both written and spoken English. The main tasks of the successful candidate will be to participate to the research activities of the group related to data-driven integrated process control, interacting with the PhD students and other researchers of the group, and with the European universities and companies involved in the collaborative project that supports the postdoctoral fellowship.

The appointment compensation package will depend on the candidate, and be competitive on an international level. The duration of the appointment is one year, renewable for an additional year.

The deadline for applications is October 31st, 2016.

For further information regarding the position, as well as the online form, please see <https://www.imtlucca.it/school/job-opportunities/academic/295>.

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### **6.11. PostDoc: Ben-Gurion University of the Negev, Israel**

Contributed by: Avishy Carmi, [avcarmi@bgu.ac.il](mailto:avcarmi@bgu.ac.il)

Postdoctoral position at Ben-Gurion University of the Negev – Information fusion in networks using tangle machines.

\* Application deadline: 1st November\*

\* Start date: as soon as possible \*

A postdoctoral position is available for an energetic candidate in the areas of information fusion and statistical signal processing. The focus of this two-year funded research is a new approach to information fusion in networks named "tangle machines". Tangle machines are graphical models reminiscent of objects studied in low dimensional topology, in particular knot theory. Among their attractive features is their flexibility; an information fusion network may have many different tangle machine representations. This endows tangle machines with an unprecedented capacity to describe adaptive topologically resilient networks.

Candidates should have or be close to finishing a PhD degree in electrical engineering, computer science, applied mathematics, or a related field. Excellent technical writing in English is required. Candidates should send their CV and a list of two references with full contact information to Dr. Avishy Carmi at:

[avcarmi@bgu.ac.il](mailto:avcarmi@bgu.ac.il)

About the university:

Ben-Gurion University is a major center for teaching and research, with campuses in Beer-Sheva, Eilat and

Sede Boqer. More than 18,000 students are enrolled in the Faculties of Engineering Sciences, Health Sciences, Natural Sciences, Humanities and Social Sciences, School of Business and Management and the School of Advanced Graduate Studies. The University also includes major research institutes such as the National Institute for Biotechnology in the Negev, the Jacob Blaustein Institutes for Desert Research with its Albert Katz International School for Desert Studies and the Ben-Gurion Research Institute for the Study of Israel and Zionism.

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### **6.12. PostDoc: University of Bristol, UK**

Contributed by: Andres Marcos, [andres.marcos@bristol.ac.uk](mailto:andres.marcos@bristol.ac.uk)

Two (2) Post-Doctoral positions are available at the Aerospace Engineering Department of the University of Bristol (U.K.) to work on development & flight test of aircraft control schemes. Both positions will be within the Technology for AeroSpace Control (TASC) group, <http://www.tasc-group.com>. They require an aerospace degree and a PhD in automatic control, signal processing or other relevant field of work, with knowledge of robust control techniques (H-infinity, LPV). A practical orientation is also preferred.

The first position, for 1.5 years, is part of the European Horizon 2020 Transport project entitled: “Flutter Free FLight Envelope eXpansion for ecOnomical Performance improvement (FLEXOP)”, <http://www.flexop.eu>. The objective of FLEXOP is to demonstrate the maturity of (i) wing aeroelastic tailoring and (ii) active flight control for flutter flight envelope expansion. Towards this goal an unmanned demonstrator aircraft (MTOW 80 kg & wing span of 7 meters) is being designed to provide a safe flight testing platform for the developed flutter techniques. The PD position at TASC will focus on the investigation of robust control methods for active on-board flutter control. It will include the development, implementation and verification of the designs, as well as supporting their hardware implementation and flight demonstration in FLEXOP flexible wing demonstrator.

The second position, for 2 years, is part of the European Horizon 2020 Mobility for Growth project entitled “Validation of Integrated Safety-enhanced Intelligent flight cONTrol (VISION)”, [http://w3.onera.fr/h2020\\_vision](http://w3.onera.fr/h2020_vision). This project is part of a call for international cooperation in aeronautics with Japan, and has the objective to demonstrate smart technologies for aircraft Guidance, Navigation and Control (GNC). The work at TASC focuses on the development, design and flight test of a system-wide aircraft Fault Monitoring and Tolerant Control (FMTC) approach based on robust control and using standard sensing units and potentially, also vision-based systems. The designed schemes will be flight tested in JAXA’s MuPAL-alpha aircraft in Tokyo (Japan). The project will be carried out at the University of Bristol but will entail yearly visits to JAXA in Tokyo during the application and validation phases.

The positions are offered on a fixed term contract with a starting salary per annum of £31,342 - £35,256 depending on qualifications. The position is open to all nationalities. The starting date for both positions is December 2016 or as soon thereafter. Interviews are expected to be carried out in November and until positions are filled.

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### **6.13. PostDoc: Université catholique de Louvain, Belgium**

Contributed by: Andrea Simonetto, [andrea.simonetto@uclouvain.be](mailto:andrea.simonetto@uclouvain.be)

A Postdoctoral position has been opened at Université catholique de Louvain, Belgium, in the faculty of applied mathematics, and specifically in the cyber-physical group of Prof. R. Jungers. The aim of the postdoctoral position is to strengthen the group in one or more of its research areas.

Prof. R. Junger's group works on several research lines: large-scale optimization over networks, switching systems, discrete optimization and automata theory, control theory (esp. convex relaxations and Lyapunov theory), as well as game theory. We have just acquired a H2020 European project in the field of air traffic management, for which we plan to leverage tools from robust control, large-scale optimization, network science, and game theory.

We are asking:

- A open-minded, self-motivated, and independent postdoctoral researcher, who has a PhD in control theory, signal processing, machine learning, or related fields, or about to graduate. She/he has a very strong theoretical background, and yet no problem in programming (especially in Python)
- The candidate must be fluent in English and be committed to excellence.
- She/he must be a team player and have a cooperative attitude.

We are offering:

- A one year post doctoral position (with possible extensions) in a vibrant research institute in the heart of Europe.
- A competitive salary.
- The freedom to pursue your own research ideas and collaborations within the broad domain of cyber-physical systems.

Please apply sending an email to [raphael.jungers@uclouvain.be](mailto:raphael.jungers@uclouvain.be), with a single PDF file containing: motivation letter detailing how your profile would fit in the group, CV with publication lists, and at least two reference contacts.

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#### **6.14. PostDoc: INRIA, France**

Contributed by: Jean-Baptiste Pomet, [Jean-Baptiste.Pomet@inria.fr](mailto:Jean-Baptiste.Pomet@inria.fr)

PostDoc: Inria Sophia Antipolis, France.

One post-doc position (one year) to be filled by the end of 2016.

Topic: optimal control and averaging

This takes place in the body of work conducted by the team MCTAO (common with University of Bourgogne (Dijon), University of Nice and INRIA) on averaging in control, especially in celestial mechanics and space engineering.

Both theoretical and numerical explorations have to be conducted.

More information on

<https://team.inria.fr/mctao/postdoc-position-at-inria-sophia-optimal-control-and-averaging/>

Contacts: [Jean-Baptiste.Caillau@u-bourgogne.fr](mailto:Jean-Baptiste.Caillau@u-bourgogne.fr), [Jean-Baptiste.Pomet@inria.fr](mailto:Jean-Baptiste.Pomet@inria.fr).

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#### **6.15. PostDoc: Concordia University, Canada**

Contributed by: Horizon Postdoctoral Fellowships, [tatiana.st-louis@concordia.ca](mailto:tatiana.st-louis@concordia.ca)

POSTDOCTORAL FELLOWSHIP AVAILABLE IN ELECTRICAL AND COMPUTER ENGINEERING

Are you an exceptional early researcher, keen to explore exciting challenges at the leading edges of research and creative activity, to mentor your researchers, and to make an impact with your work? Apply now to receive a Horizon Postdoctoral Fellowship from Concordia University.

Project title: Cyber Security, Monitoring, Diagnostics and Resilient Control Recovery of Critical Cyber-Physical Systems (CPS) Infrastructure

Additional Salary Information: \$47,500 per year plus benefits and full access to Concordia's services

For more information on the program, including academic and eligibility requirements and details regarding the application process, please visit

<https://www.concordia.ca/research/students-and-postdocs/postdoctoral-fellows/horizon-postdoctoral-fellowships/1025.htm>

About Concordia University

Concordia University has secured a unique legacy for supporting and developing people and their aspirations in order to enrich the world's wealth of knowledge, bridge communities and, most important of all, enable individuals to grow and contribute. A next-generation university, Concordia is one of the top 100 universities under 50 and top 200 international universities in the world.

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### **6.16. PostDoc: University of Washington, USA**

Contributed by: Mehran Mesbahi, [mesbahi@aa.washington.edu](mailto:mesbahi@aa.washington.edu)

Professors Mesbahi, Klavins, and Fairhall of the University of Washington in Seattle are seeking two postdoctoral scholars to work on a collaborative project at the intersection of control theory, neuro-engineering, and synthetic biology. Our aim is to genetically reprogram the neural behavior of Hydra, organisms with simple, decentralized nervous systems. These positions will focus on the development of nonlinear network models and control theory and work closely with experimentalists to design and predict the behavior of new neural circuits. The work will be conducted at the University of Washington in collaboration with researchers at Columbia University, UC Davis, and UC Irvine. Candidates must have a PhD in engineering, computer science, physics, or mathematics with (required) prior research focus on control/dynamical systems theory. Prior experience in synthetic biology and/or neuroscience is desired, though not required. We are looking for candidates who can start as early as December, 2016. Applicants should email Prof. Eric Klavins ([klavins@uw.edu](mailto:klavins@uw.edu)) or Prof. Mehran Mesbahi ([mesbahi@uw.edu](mailto:mesbahi@uw.edu)) attaching a cover letter, a CV, and contact information of three references.

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### **6.17. PostDoc: CMU, USA**

Contributed by: Bruno Sinopoli, [sinopoli@cmu.edu](mailto:sinopoli@cmu.edu)

Postdoctoral position at Carnegie Mellon University, Pittsburgh, PA, USA

A postdoctoral position in the broad area of system theory. The candidate will be working on different aspect of Cyber-Physical Systems, with emphasis on security.

Requirements: Candidates must have a PhD in engineering, computer science, physics, or mathematics with prior research focus on systems theory. A solid theoretical foundation is a requirement, together with creativity and desire to explore new problems. Good communication skills, breadth of knowledge, and ability to work as a part of a large team are a plus.

Timeline and application instructions: Start date is as soon as possible. The appointment will be for 12 months, with a possibility of reappointment based on performance.

Applicants should email Prof. Bruno Sinopoli at [sinopoli@cmu.edu](mailto:sinopoli@cmu.edu) attaching the following items:

1) Cover letter - describing previous experience and research/career goals,



- 2) CV - with list of publications/research accomplishments (2 pages max),
- 3) Contact information for three references.

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### **6.18. PostDoc: Delft University of Technology, Netherlands**

Contributed by: Tamas Keviczky, [t.keviczky@tudelft.nl](mailto:t.keviczky@tudelft.nl)

A Postdoctoral position is available at the Delft Center for Systems and Control (DCSC), Delft University of Technology, The Netherlands, with the following focus:

Distributed Control of Aquifer Thermal Energy Storage Smart Grids

Project description:

This project offers an opportunity to develop and implement distributed control solutions (based on stochastic predictive control) for cooperative operation of Aquifer Thermal Energy Storage (ATES) systems coupled with local building climate control systems. The candidate will be responsible for the development, testing, implementation, and evaluation of control algorithms for a proof-of-concept pilot study involving a research team at TU Delft and several industrial partners (including building operators) in Amsterdam, The Netherlands. The study consists of investigation of integrated ATES solutions based on distributed predictive control for Amsterdam at a regional scale, and also focuses on several large buildings at a specific test and implementation site. As such, detailed control-oriented building models will be constructed, and the generic control algorithms will be adapted according to the characteristics of the specific building systems (hydraulic connections and components of the existing HVAC), and the required communication infrastructure in order to implement the developed software within the control systems of the associated buildings.

Candidate:

Applicants for this challenging project should have a PhD degree and background in systems and control, or civil-, electrical-, computer engineering with a clear focus on building control systems. The applicant should have demonstrated ability to conduct high-quality research according to international standards, as demonstrated by publications in international journals. Familiarity or previous experience with the following topics is a plus: decentralized and distributed control, model predictive control, stochastic optimization, building climate control and automation, modeling of building performance applications, HVAC, networked control systems, distributed computing, monitoring and embedded systems, systems modeling and identification, smart grids. In addition, excellent communication skills are important for this position and a good command of the English language is required.

Project term:

Employment and salary are according to the Collective Employment Agreement of Dutch Universities, with excellent secondary benefits and an annually increasing salary starting at approximately EUR 3000 gross per month or higher depending on the candidate's experience. The appointment will be for one year with the possibility of extension. The position will be filled as soon as a suitable candidate is found, with an intended starting date of January 1, 2017. The project will be supervised by dr. Tamás Keviczky.

Information and application:

Interested applicants should send their detailed Curriculum Vitae, the names of two professional referees, a list of courses taken with grades obtained, a list of publications (with a copy of three selected ones), a summary of their Ph.D. thesis and a cover letter stating their motivation to:

dr. Tamás Keviczky, tel. +31 15 278 2928, [t.keviczky@tudelft.nl](mailto:t.keviczky@tudelft.nl)

General information is also available from the website <http://www.dcsc.tudelft.nl/>.

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### **6.19. PostDoc: NC A&T State University, USA**

Contributed by: Ali Karimodini, [akarimod@ncat.edu](mailto:akarimod@ncat.edu)

The Testing, Evaluation, and Control of Heterogeneous Large Scale systems of Autonomous Vehicles (TECHLAV) Center, located in the Inter-Disciplinary Research Center (IRC) at NC A&T State University, invites applications for a full-time, post-doctoral research associate position in Machine Learning particularly on approximate reasoning using Fuzzy Type-2 for handling of uncertainty. The project uses these methods to develop and implement test and evaluation techniques for autonomy algorithms of autonomous vehicles.

This is a non-tenure-track, year-to-year appointment, renewable annually for up to four years subjected to satisfactory performance, availability of resources, and the needs of the Center. The research results of this project are expected to reach a high Technology Readiness Level (TRL) to be applied to testing and evaluation of autonomous vehicles. We thus look for applicants that have a demonstrated track record in the applications of Machine Learning techniques to systems and control problems. Programming skills and practical experiences with embedded real-time systems are desired.

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

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### **6.20. Lecturer: University of Pennsylvania, USA**

Contributed by: George J Pappas, [pappasg@seas.upenn.edu](mailto:pappasg@seas.upenn.edu)

The University of Pennsylvania's Department of Electrical and Systems Engineering invites applicants for two full-time Lecturer positions. The department seeks individuals with exceptional promise for, or a proven record of, excellence in teaching, course and curriculum innovation. Applicants should have a Ph.D. degree in Electrical and Systems Engineering or related field. We are particularly interested in candidates that enhance our educational curricula in the broad areas of:

1. Computer engineering & embedded systems (embedded programming, distributed systems, hardware/software co-design, model-based design, internet of things), and
2. Information & systems engineering (control systems, optimization, signal processing, data science, stochastic systems, model based systems engineering, systems engineering projects).

The department is strongly interested in individuals that will balance principles-based lectures with hands-on projects addressing emerging application domains (such as energy, transportation, health). The initial appointment is for three years before promotion to the rank of Senior Lecturer is considered.

Diversity candidates are strongly encouraged to apply. Interested persons should submit an online application at <http://www.ease.upenn.edu/faculty-positions> and include curriculum vitae, statement of teaching interests, and three references. Review of applications will begin immediately Applications will be evaluated on a rolling basis until the positions are filled.

The University of Pennsylvania is an Equal Opportunity Employer. Minorities/Women/Individuals with Disabilities/Veterans are encouraged to apply.

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## 6.21. Faculty: Zhejiang University of Technology, China

Contributed by: Xiang Qiu, [qiuxiang@zjut.edu.cn](mailto:qiuxiang@zjut.edu.cn)

Faculty Position: Zhejiang University of Technology , Hangzhou, China

Contributed by: Xiang Qiu, [qiuxiang@zjut.edu.cn](mailto:qiuxiang@zjut.edu.cn)

<http://www.auto.zjut.edu.cn/WebSite/Job/JobList.aspx>

Zhejiang Control Science and Engineering First-Class (Class A) Discipline Recruitment Announcement

Zhejiang University of Technology (ZJUT), sitting by the beautiful West Lake, Hangzhou, is a Zhejiang Province and the Ministry of Education co-supported, provincially governed key university, who owns one of the only 14 Collaborative Creation Centers in the first initiative of the state “2011 Program”. ZJUT has its beautiful campus covering more than 3000 mu, which accommodates 24 Colleges, more than 37,000 full-time students and more than 3,300 staffs. ZJUT is proudly to have 2 self-owned and 2 sharing Fellows of the Chinese Academy of Engineering, as well as more than 1400 faculties with senior professional titles. ZJUT has State Key Disciplines, State Engineering Research Centers, State University Science Parks, Centers for Postdocs, as well as the power of awarding Doctors, Masters, MBAs and recruiting foreign students and those from Hong Kong, Macao and Taiwan.

The Control Science and Engineering Discipline within the College of Information Engineering was one of the Priority-among-Priorities Disciplines (selected by Zhejiang Provincial Government in 2009), and is now one of the Zhejiang First-Class (Class A) Disciplines in the first initiative of the Program in 2015. The Discipline now has the Doctoral Program at the first-level discipline, the Center for Postdocs, and the Zhejiang Collaborated Key Laboratory of Embedded Systems. The College of Information Engineering where the Discipline is in has 5 undergraduate programs: Automation, Electrical Engineering and Its Automation, Electronic Information Engineering, Communication Engineering, and Electronic Science and Technology. The Discipline is now recruiting faculties in the following areas at the levels of State and Zhejiang Provincial “1000 Plan” high-level talents, Zhejiang “Qianjiang Scholars”, ZJUT “Yunhe Specially-Appointed Professors”, “ZJUT Professors”, outstanding PhDs and postdocs, etc.

- (1) Control Science and Engineering, including advanced control theory, robotics, machine vision, pattern recognition, industrial networked control systems, MES, etc.
- (2) Electrical Engineering, including electric drive, power electronics, new energy, etc.
- (3) Mechatronic Engineering, including high-precision servo control of mechatronic devices, the modelling and dynamic analysis of robots, etc.
- (4) Computer Science and Technology, including smart city, smart healthcare, big data, cloud computing, IoT, industrial control software, etc.

### A. Selection criteria

High-level talents (Changjiang Scholars, 1000 Plan Scholars, Qianjiang Scholars, etc.): You have major achievements and influence in your research area that have already been recognized by national and international researchers, or have great potentials of future development; You also meet the criteria of corresponding talents programs.

ZJUT Professors /Associate Professors: You have a PhD degree obtained from a recognized university or research institutes with at least one year of oversea research experience in a well-known foreign institute; You have research achievements recognized by national and international researchers; Your application also passes the review process at the university level (ZJUT).

Outstanding PhDs/Postdocs: You have a PhD degree obtained from a recognized university or research institute; You have high-quality research outputs and the professional skills required by a university lecturer, and great potentials of your future career.

## B. Salary and welfare

(1)National-Level Top Tier Talents:Fellows of Chinese Academy of Sciences or Chinese Academy of Engineering, “Special Support Program” Distinguished Talents, Principal Investigators of NSFC Innovative Research Team, or other talents at the equivalent level. Treatment:Negotiation on the case by case basis.

(2)National-Level Top Tier Talents: National “1000 Plan” Scholars (long-term), Changqiang Scholars, NSFC Distinguished Young Scholars, “Special Support Program” Outstanding Talents, winners (rank first) of three major national science awards, or other talents at the equivalent level. Salary (CNY):  $\geq 700\text{K}$  /Year; Housing Benefit(CNY):3M-5M; Startup Funds(CNY):Case by case.

(3)National-Level Young Talents:“Special Support Program” Outstanding Young Talents, “1000 Plan” Young Scholars, “Changjiang Young Scholars, NSFC Outstanding Young Scholars, 973 Program Young Scholars, “Millions of Talents Program” Scholars, or other talents at the equivalent level. Salary (CNY): $\geq 450\text{K}$  /Year; Housing Benefit(CNY):1.5M-2.5M; Startup Funds(CNY):1M-3M.

(4)Provincial-and-Ministry-Level Talents,Yunhe Specially-Appointed Professors: CAS “100 Plan” Scholars, Zhejiang “Qianjiang Scholars”, Zhejiang “1000 Plan” (long-term) Scholars, or other talents who have made significant academic contributions with great potentials of development and who are awarded “Yunhe Specially-Appointed Professors” after the review of ZJUT. Salary (CNY): $\geq 350\text{K}$  /Year; Housing Benefit(CNY):1.5M; Startup Funds(CNY):0.5M-1M.

(5)ZJUT Professors,ZJUT Associated Professors: You have a PhD degree obtained from a recognized university or research institutes with at least one year of oversea research experience in a well-known foreign institute; You have research achievements recognized by national and international colleges; Your application also passes the review process at the university level. Salary (CNY):Salaries at the appropriate levels; Housing Benefit(CNY):0.4M-0.5M; Startup Funds(CNY):0.1M-0.2M.

(6)Outstanding PhDs/Postdoctors: You have a PhD degree obtained from a recognized university or research institute; You have high-quality research outputs and the professional skills required by a university lecturer, and great potentials of your future career. Salary (CNY):Salaries at the appropriate levels; Housing Benefit(CNY):0.3M.

(7)Postdocs (leading to a faculty): Besides the basic salary and welfare, 50K/Year subsidy is provided for the first two years, with the possibility of continuing this subsidy plus a one-off 200K housing benefit if you are accepted to ZJUT public institution business unit.

## C. Required documents

(1)One self-recommendation letter covering your study and professional records, your teaching and research statements, your achievements, your work plan as well as your possible requirements from us.

(2)A list of your research funds, awards, and publications in the recent five years.

## D. Contact us

Dr. Qiu,

Email : qiuxiang@zjut.edu.cn

Mobile: +86-13867469319

Address: Xiaoheshan College Park, College of Information Engineering, Zhejiang University of Technology, 310023

Zhejiang Control Science and Engineering First-Class (Class A) Discipline

Sep 02, 2016

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## 6.22. Faculty: University of Southern Denmark, Denmark

Contributed by: Alan Wervick, [awe@signatur.dk](mailto:awe@signatur.dk)

Associate Professor in Mechanical Engineering

SDU Mechatronics, part of the Mads Clausen Institute and the Faculty of Engineering at the University of Southern Denmark, offer a full-time position as associate professor in mechanical engineering as of 1 January 2017 or as soon as possible thereafter.

The Mads Clausen Institute is located at SDU's campus in Sønderborg. The university has close bonds to the industrial environment of Sønderborg and several projects within SDU Mechatronics are conducted in close cooperation with enterprises of the active industrial area.

SDU Mechatronics bring together experts from different scientific fields, such as embedded systems, electrical and mechanical engineering, signal processing and control towards research, education and innovation in the field of mechatronics.

SDU Mechatronics is looking for a specialist in design and modelling of mechanical systems, in order to do research and teaching towards increasing the level of design and analysis of mechanical components in mechatronic devices, specifically fatigue properties and vibration analysis, also developing simplified mathematical models for potential control purposes.

Main tasks

- Teaching of mechanical systems (CAD, standard components, production technology)
- Supervision of student projects and thesis within the engineering programmes in mechatronics at both bachelor and master level
- Active involvement in research efforts

Requirements and qualifications

- PhD degree in mechanical engineering or similar
- Documented experience with research dissemination in international scientific journals and conferences
- Experience with writing research applications
- Good communication skills in English
- Self-motivation and the ability to work both independently and as a team player with researchers from different disciplines

The following qualifications are preferred

- Expertise in Mathematical modelling of mechanical components and systems
- Experience with mechatronic systems
- Experience in teaching of mechanics (specifically mechanical components, joining methods and fatigue)
- Ability to develop course curricula

For further information, please contact Jerome Jouffroy, associate professor and PhD, tel. +45 6550 1642, e-mail: [Jerome@mci.sdu.dk](mailto:Jerome@mci.sdu.dk) or Ib Christensen, head of SDU Mechatronics, tel. +45 6550 1606, e-mail: [ic@mci.sdu.dk](mailto:ic@mci.sdu.dk)

Application, salary and conditions of employment, etc.

Applications will be assessed by an expert committee. Applicants will be informed of their assessment by the Faculty.

As part of the overall assessment of the applicant's qualifications, an interview may be applied.

The successful applicant will be employed in accordance with the agreement between the Ministry of Finance and AC (the Danish Confederation of Professional Associations), Cirkulare om overenskomst for Akademikere i staten 2015.

Applications must be submitted online using the link below. Attached files must be in Adobe PDF or Word format. Each box can only contain a single file of max. 10 Mb.

Read the guideline for applicants.

An application must include:

- Curriculum Vitae
- Diplomas/Certificates (Master's degree certificate and the latest certificate)
- Teaching portfolio (please see below)
- List of publications indicating the publications attached
- Examples of the most relevant publications. Please attach one pdf-file for each publication, a possible co-author statement must be part of this pdf-file.

Applicants for an associate professorship at the Faculty of Engineering are requested to submit a teaching portfolio with the application as documentation for teaching experience as well as supervision qualifications. Please read more here.

The University encourages all interested persons to apply, regardless of age, gender, religious affiliation or ethnic background.

You can only apply for the position through our website [www.sdu.dk/en/service/ledige\\_stillinger](http://www.sdu.dk/en/service/ledige_stillinger).

Your application must be registered in our system on the 15/10/2016 at 23.59.59 CET at the latest.

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### **6.23. Faculty: University of Southern Denmark, Denmark**

Contributed by: Alan Wervick, [awe@signatur.dk](mailto:awe@signatur.dk)

Assistant Professor in Control Systems

SDU Mechatronics, part of the Mads Clausen Institute and the Faculty of Engineering at the University of Southern Denmark, offer a full-time position as associate professor or assistant professor in control systems as of 1 January 2017 or as soon as possible thereafter.

The Mads Clausen Institute is located at SDU's campus in Sønderborg. The university has close bonds to the industrial environment of Sønderborg and several projects within SDU Mechatronics are conducted in close cooperation with enterprises of the active industrial area.

SDU Mechatronics bring together experts from different scientific fields, such as embedded systems, electrical and mechanical engineering, signal processing and control towards research, education and innovation in the field of mechatronics.

SDU Mechatronics is looking for a specialist in control systems to do research and teaching towards increasing the level of intelligence of mechatronic devices through increased autonomy, adaptivity, self-diagnosis, and fault tolerance.

Main tasks

- Teaching of control systems
- Active involvement in research efforts
- Supervision of student projects and thesis within the engineering programmes in mechatronics at both bachelor and master level

Requirements and qualifications

- PhD degree in control systems or similar
- Documented experience with research dissemination in international scientific journals and conferences

- Experience with writing research applications
- Good communication skills in English
- Self-motivation and the ability to work both independently and as a team player with researchers from different disciplines

The following qualifications are preferred

- Expertise in nonlinear control and/or intelligent control methods
- Experience with mechatronic systems
- Experience in teaching of control systems
- Ability to develop course curricula

For further information, please contact Jerome Jouffroy, associate professor and PhD, tel. +45 6550 1642, e-mail: [Jerome@mci.sdu.dk](mailto:Jerome@mci.sdu.dk) or Ib Christensen, head of SDU Mechatronics, tel. +45 6550 1606, e-mail: [ic@mci.sdu.dk](mailto:ic@mci.sdu.dk)

Application, salary, etc.

- An assistant professorship is a 3-year position.
- Applications will be assessed by an expert committee. Applicants will be informed of their assessment by the Faculty.
- As part of the overall assessment of the applicant's qualifications, an interview may be applied.
- Appointment to this position may also include teaching obligations in regard to related degree programmes.
- The successful applicant will be employed in accordance with the agreement between the Ministry of Finance and AC (the Danish Confederation of Professional Associations), Cirkulare om overenskomst for Akademikere i staten 2015.

Applications must be submitted electronically using the link below. Attached files must be in Adobe PDF or Word format. Each box can only contain a single file of max. 10 Mb.

Read the guideline for applicants.

An application must include:

- Application
- Curriculum Vitae
- Certificates/Diplomas (Master's degree certificate and the latest certificate)
- Information on any previous teaching experience, please attach as Teaching portfolio
- List of publications indicating the publications attached
- Examples of the most relevant publications. Please attach one pdf-file for each publication, a possible co-author statement must be a part of this pdf-file

The University encourages all interested persons to apply, regardless of age, gender, religious affiliation or ethnic background.

You can only apply for the position through our website [www.sdu.dk/en/service/ledige\\_stillinger](http://www.sdu.dk/en/service/ledige_stillinger).

Your application must be registered in our system on the 15/10/2016 at 23.59.59 CET at the latest.

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

Contributed by: Kimberly Johnson, [berlykim@umich.edu](mailto:berlykim@umich.edu)

Aerospace Engineering, University of Michigan - Faculty Search

The Department of Aerospace Engineering at The University of Michigan invites applications for multiple tenure-track/tenured faculty positions in all areas of Aerospace Engineering. We are seeking exceptional

candidates who will develop a world-class research program and innovative educational experiences for our students. This is a broad search, and while we will be considering all levels, preference will be given to junior-level applicants.

The Aerospace Engineering Department completed its 100th anniversary in 2014 and our undergraduate and graduate programs continue to be among the very best in our nation. Research interests of the faculty cover a broad spectrum of topics including high-performance multiphysics computational sciences, aerostructures, smart structures and materials, flight dynamics and control, avionics and software systems, multidisciplinary design optimization, propulsion, combustion, and sustainable energy with a mix of air and space applications. More information about the department can be found at [aerospace.engin.umich.edu](http://aerospace.engin.umich.edu). Applicants should have earned a doctoral degree in Aerospace Engineering or a closely related field. The successful candidate will be expected to participate in all aspects of the Department's mission, including the development of a strong and relevant externally funded research program, the teaching of undergraduate and graduate courses, and the supervision of graduate students.

Please prepare a single PDF file to the Faculty Search Committee that contains the curriculum vita, statements of research and teaching interests, three representative publications, and the names and contact information of five references. The evaluation process will start in the Fall semester and will continue until the positions are filled.

The University of Michigan is an equal opportunity/affirmative action employer with an active dual-career assistance program. The college is especially interested in candidates who can contribute, through research, teaching, and/or service, to the diversity and excellence of the academic community.

Click here to apply: [https://umich.qualtrics.com/jfe/form/SV\\_3K855RLMX9B5W2F](https://umich.qualtrics.com/jfe/form/SV_3K855RLMX9B5W2F)

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#### **6.25. Faculty: Queen's University, Canada**

Contributed by: Serdar Yuksel, [yuksel@mast.queensu.ca](mailto:yuksel@mast.queensu.ca)

The Department of Mathematics and Statistics, Faculty of Arts and Science at Queen's University, Kingston, Canada, invites applications for a Tenure-track faculty position in Applied Mathematics and Mathematics and Engineering at the rank of Assistant Professor with a starting date of July 1, 2017.

In areas related to Mathematics and Engineering, there are presently prominent research groups in Information and Communication Theory, Control Theory, and Geometric Mechanics. For more information about the Mathematics and Engineering program, please see <http://www.mast.queensu.ca/meng/>. A successful candidate will be expected to work in any of these or complementary research areas, and to contribute to both the graduate and undergraduate programs. A candidate who joins the Mathematics and Engineering group will be expected to obtain a license as a Professional Engineer; an undergraduate degree in Engineering is a strong asset towards obtaining the license.

For the full position announcement, please visit: <http://www.mast.queensu.ca/positions/>.

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#### **6.26. Faculty: Caltech, USA**

Contributed by: Sheila Shull, [sheila@caltech.edu](mailto:sheila@caltech.edu)

The Computing and Mathematical Sciences (CMS) department at the California Institute of Technology (Caltech) invites applications for tenure-track or tenured faculty positions. CMS is a unique environment



where innovative, interdisciplinary, and foundational research is conducted in a collegial atmosphere. Candidates in all areas of computing and mathematical sciences are invited to apply, including (but not limited to) learning and computational statistics, security and privacy, networked and distributed systems, optimization and computational mathematics, control and dynamical systems, theory of computation and algorithmic economics, scientific computing, etc. Additionally, we are seeking candidates who have demonstrated strong connections to other fields, including the mathematical, physical, biological, and social sciences.

A commitment to world class research, high-quality teaching, and mentoring is expected. The initial appointment at the Assistant-Professor level is for four years and is contingent upon the completion of a Ph.D. degree in Computer Science, Applied Mathematics or related field.

Applicants are encouraged to have all their application materials on file by October 21st, 2016, but applications will be accepted until the end of December. For a list of documents required and full instructions on how to apply on-line, please visit <http://www.cms.caltech.edu/search>.

Questions about the application process may be directed to: [search@cms.caltech.edu](mailto:search@cms.caltech.edu).

Caltech is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.

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## **6.27. Faculty: University of Pennsylvania, USA**

Contributed by: Goerge J Pappas, [pappasg@seas.upenn.edu](mailto:pappasg@seas.upenn.edu)

MEAM Tenured and Tenure-track positions - Robotics and Controls

The School of Engineering and Applied Science at the University of Pennsylvania is growing its faculty by 33% over a five-year period. As part of this initiative, the Department of Mechanical Engineering and Applied Mechanics is engaged in an aggressive, multi-year hiring effort for multiple tenured and tenure-track positions at the Assistant, Associate, and Full Professor levels.

We seek applicants with exceptional research achievements and future promise, a commitment to excellence in undergraduate and graduate education in mechanical engineering, and dedication to service and collegiality. Candidates should couple strongly with the department's core disciplinary strengths in mechanical systems, mechanics of materials, fluid mechanics, and thermal sciences. We seek applicants whose training and future research is strongly rooted in mechanical engineering, and who work in Robotics and Controls. Connections with other domains (e.g., medicine, biomechanics, design, energy, aerospace, or manufacturing) are encouraged. The Department seeks applicants whose research aligns with the School's new strategic plan (<http://www.seas.upenn.edu/PennEngineering2020>). For this search, candidates at the Assistant Professor level are preferred; candidates at higher levels will be considered in exceptional circumstances.

The Department maintains strong collaborations with all other engineering departments, the School of Arts and Sciences, the Perelman School of Medicine, the Wharton School of Business, and the School of Design. Our faculty engage strongly with leading centers including the General Robotics, Automation, Sensing, and Perception (GRASP) Laboratory, the Penn Institute for Computational Science (PICS), and the Laboratory for Research on the Structure of Matter (LRSM). The Department encourages candidates who can leverage and add to these relationships. Successful candidates will conduct innovative, leading research programs benefiting from Penn's strong interdisciplinary tradition and excellent facilities such as the state-of-the-art Singh Center for Nanotechnology. Candidates who enrich the diversity of our community are strongly encouraged to apply. For full consideration, candidates must apply by Dec. 15, 2016.

<https://facultysearches.provost.upenn.edu/postings/989>

The University of Pennsylvania is an affirmative action/equal opportunity employer. All qualified applicants will receive consideration for employment and will not be discriminated against on the basis of race, color, religion, sex, sexual orientation, gender identity, creed, national or ethnic origin, citizenship status, disability, veteran status, or any other characteristic protected by law.

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### **6.28. Faculty: University of Waterloo, Canada**

Contributed by: Baris Fidan, [fidan@uwaterloo.ca](mailto:fidan@uwaterloo.ca)

Faculty Position (Mechatronics) at University of Waterloo, Canada

The Department of Mechanical and Mechatronics Engineering, in the Faculty of Engineering at the University of Waterloo, invites applications from highly qualified candidates for a tenure-track position in Mechatronics Engineering, with a particular focus on Intelligent Vehicles or Additive Manufacturing. Candidates will be considered at all levels, though preference will be given to individuals applying at the Assistant and/or Associate Professor levels.

The successful candidate will hold a PhD in Mechatronics or Mechanical Engineering or a similar discipline. Duties will include developing and maintaining an active and internationally recognized research program, teaching at the undergraduate and graduate levels, and advising graduate and undergraduate students. Applicants should have demonstrated research strength in Intelligent Vehicles or Additive Manufacturing, and have a commitment to establishing a multi-disciplinary collaborative program. Applicants must have excellent communication skills and a dedication to both teaching and research. Applicants should send their full curriculum vitae, a concise research and teaching vision statement, and the names of three references to: Dr. Jan Huissoon Chair,

Department of Mechanical and Mechatronics Engineering

University of Waterloo

Waterloo, Ontario, Canada N2L 3G1

Email: [mmechair@uwaterloo.ca](mailto:mmechair@uwaterloo.ca)

Applications will be accepted until October 31, 2016, with an anticipated start date of May 1, 2017. The successful applicant is expected to have an engineering license for practice in Canada or to apply for an engineering license with Professional Engineers Ontario within five years of joining the University. The salary range for this position is \$100,000 to \$150,000 CAD. Negotiations beyond this salary range will be considered for exceptionally qualified candidates. Information about the Faculty, Department and Research Group can be found at [www.eng.uwaterloo.ca](http://www.eng.uwaterloo.ca), [www.mme.uwaterloo.ca](http://www.mme.uwaterloo.ca) and

<https://uwaterloo.ca/mechanical-mechatronics-engineering/research/automation-and-controls-research>.

The University of Waterloo respects, appreciates and encourages diversity. We welcome applications from all qualified individuals including women, members of visible minorities, aboriginal peoples and persons with disabilities. All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority.

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### **6.29. Faculty: University of Waterloo, Canada**

Contributed by: Baris Fidan, [fidan@uwaterloo.ca](mailto:fidan@uwaterloo.ca)

Faculty Position (Biomechanical and Assistive Robotics) at University of Waterloo, Canada

The Department of Mechanical and Mechatronics Engineering, in the Faculty of Engineering at the University of Waterloo, invites applications from highly qualified candidates for a tenure-track position in Biomechanical

and Assistive Robotics. Candidates will be considered at all levels, though preference will be given to individuals applying at the Assistant and/or Associate Professor levels.

The successful candidate will hold a PhD in Mechatronics or Mechanical Engineering or a similar discipline. Duties will include developing and maintaining an active and internationally recognized research program, teaching at the undergraduate and graduate levels, and advising graduate and undergraduate students. Applicants should have demonstrated research strength in Biomechanical, Biomedical, and/or Assistive Robotics, including, but not limited to, interests in exoskeletons, rehabilitation robots, human-robot interaction, and/or collaborative robots. Applicants must have a commitment to establishing a multi-disciplinary collaborative program, and have excellent communication skills and a dedication to both teaching and research.

Applicants should send their full curriculum vitae, a concise research and teaching vision statement, and the names of three references to:

Dr. Jan Huissoon

Chair, Department of Mechanical and Mechatronics Engineering

University of Waterloo Waterloo, Ontario, Canada N2L 3G1

Email: [mmechair@uwaterloo.ca](mailto:mmechair@uwaterloo.ca)

Applications will be accepted until October 31, 2016, with an anticipated start date of May 1, 2017. The successful applicant is expected to have an engineering license for practice in Canada or to apply for an engineering license with Professional Engineers Ontario within five years of joining the University. The salary range for this position is \$100,000 to \$150,000 CAD. Negotiations beyond this salary range will be considered for exceptionally qualified candidates. Information about the Faculty, Department and Research Group can be found at [www.eng.uwaterloo.ca](http://www.eng.uwaterloo.ca), [www.mme.uwaterloo.ca](http://www.mme.uwaterloo.ca) and <https://uwaterloo.ca/mechanical-mechatronics-engineering/research/automation-and-controls-research>.

The University of Waterloo respects, appreciates and encourages diversity. We welcome applications from all qualified individuals including women, members of visible minorities, aboriginal peoples and persons with disabilities. All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority.

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### **6.30. Faculty: MIT, USA**

Contributed by: Jonathan How, [jhow@mit.edu](mailto:jhow@mit.edu)

The MIT Department of Aeronautics and Astronautics invites applications for tenure-track faculty positions with a start date of July 1, 2017 or on a mutually agreeable date thereafter. The department is conducting a search for exceptional candidates with a strong background in any discipline related to Aerospace Engineering, broadly defined. Areas of interest include, but are not limited to, autonomous systems, materials and structures, atmospheric and space sciences, space and jet propulsion, manufacturing, real-time safety-critical software, cyber-security, space systems and exploration, air transportation, and fluid mechanics. We are seeking highly qualified candidates with a commitment to research and education. Faculty duties include teaching at the graduate and undergraduate levels, advising students, leading a research program, and service to the institute and the profession.

Candidates should hold a doctoral degree in a field related to aerospace engineering by the beginning of employment. The search is for a candidate to be hired at the assistant professor level; however, under special circumstances, a senior faculty appointment is possible. MIT is building a culturally diverse faculty and strongly encourages applications from female and minority candidates.

Applications must include a cover letter, curriculum vitae, 2-3 page statement of research and teaching interests and goals, and names and contact information of at least three individuals who will provide letters of recommendation. Applicants with backgrounds outside aerospace should describe how a substantial part of their work will apply to aerospace problems.

Applications must be submitted as a pdf at

<https://school-of-engineering-faculty-search.mit.edu/aeroastro/register.tcl>

Letters of recommendation must be submitted directly by the recommenders at

<https://school-of-engineering-faculty-search.mit.edu/letters>

To ensure full consideration, complete applications should be received by December 1, 2016. Applications will be considered complete only when both the applicant materials and at least three letters of recommendations are received.

For more information on the MIT Department of Aeronautics and Astronautics, please visit <http://aeroastro.mit.edu/>

Applicants may find reading our Strategic Plan (<http://aeroastro.mit.edu/aeroastro/strategicplan2015>) helpful in preparing their applications.

Questions can be directed to faculty search chair Prof. Steven Barrett ([sbarrett@mit.edu](mailto:sbarrett@mit.edu)).

MIT is an Equal Opportunity/Affirmative Action employer.

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### **6.31. Faculty: University of Florida, USA**

Contributed by: Warren Dixon, [wdixon@ufl.edu](mailto:wdixon@ufl.edu)

The Department of Mechanical and Aerospace Engineering (MAE) in the Herbert Wertheim College of Engineering at the University of Florida invites applicants for multiple tenure-track positions at the rank of Assistant/Associate/Full Professor. Although consideration will be given to all ranks, the anticipated hiring rank is Assistant Professor. Areas of focus include: (1) autonomy and autonomous systems, (2) soft matter engineering, (3) energy, and (4) computational sciences, including computational science in support of the above areas. Exceptional candidates in other areas may also be considered. Applicants must have a Ph.D. in mechanical or aerospace engineering, or a related field in engineering or science.

Successful applicants will be expected to be an effective teacher at undergraduate and graduate levels, and to build a vibrant externally-funded research program. The MAE Department currently has 53 faculty members, over 450 graduate students, total annual expenditures in excess of \$26 million, and is the largest academic department on the UF campus. Persons joining the Department will find outstanding facilities, interdisciplinary opportunities, a collaborative and collegial work environment, and a strong dedication to diversity and excellence in research and education. The Herbert Wertheim College of Engineering is undergoing a significant expansion to 300 faculty members. Potential applicants seeking more information are encouraged to visit our website at <http://www.mae.ufl.edu>.

All candidates must submit applications electronically to Prof. Nam-Ho Kim, Search Committee Chair, at [maesearch@mae.ufl.edu](mailto:maesearch@mae.ufl.edu). In addition, candidates must submit through the University of Florida's Employment website, Careers at UF at <https://jobs.ufl.edu/> to be considered for the position. Applications must include in a single pdf document: 1) a cover letter mentioning the specific area, and briefly outlining the candidate's qualifications, research and educational interests; 2) 3-5 year research plan, potential collaborative activities and statement of teaching philosophy; 3) a complete CV; and 4) the names and full contact information for at least four references. The search committee will begin screening of applicants immediately and will continue to accept applications until all positions are filled.

University of Florida counts among its greatest strengths - and a major component of its excellence - that it values broad diversity in its faculty, students, and staff and creates a robust, inclusive and welcoming climate for learning, research and other work. UF is committed to equal educational and employment opportunity and access and seeks individuals of all races, ethnicity, genders and other attributes who, among their many exceptional qualifications, have a record of including a broad diversity of individuals in work and learning activities. The selection process will be conducted in accord with the provisions of Florida's "Government in the Sunshine" and Public Records Laws.

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### **6.32. Faculty: University of California at Santa Cruz, USA**

Contributed by: Qi Gong, [qigong@soe.ucsc.edu](mailto:qigong@soe.ucsc.edu)

The Department of Applied Mathematics and Statistics (AMS) in the Jack Baskin School of Engineering at University of California, Santa Cruz (UCSC) invites applications for a tenure-track position in Control Systems at the Assistant Professor level. We seek outstanding applicants whose research complements our existing strengths in control theory, stochastic modeling, and uncertainty quantification. We are particularly interested in candidates who have expertise in control of stochastic systems and its applications in areas, such as autonomous vehicles, power systems, biology, network systems, economics, or other related fields.

The successful candidate will be expected to develop and maintain first-class, externally-funded research programs; to teach, mentor, and advise students at the graduate and undergraduate level individually and in the classroom; to contribute significantly to graduate education; and, to perform university and professional service. The candidate must be able to work with students, faculty, and staff from a wide range of social and cultural backgrounds. We are especially interested in candidates who can contribute to the diversity and excellence of the academic community through their research, teaching, and service.

The Department of Applied Mathematics and Statistics is a dynamic and growing department with fourteen faculty, six in applied mathematics and eight in statistics. Our graduate program has approximately 50 students. Research and instruction are supported by excellent computing facilities and state-of-the-art laboratories. There are strong opportunities to collaborate with colleagues in the other departments in the Baskin School of Engineering, including Computer Engineering, Computer Science, Electrical Engineering, Biomolecular Engineering, Technology Management, and Computational Media. More widely, our campus offers a fertile environment for scientific research in mathematical, physical, biological, and social sciences. Given the proximity of the campus to Silicon Valley, there are multiple opportunities for collaboration with investigators working on cutting edge engineering and science problems in institutions (for example, NASA Ames, Lawrence Livermore National Laboratory) and high-tech companies in the area.

**BASIC QUALIFICATIONS:** Ph.D. or equivalent foreign degree in Applied Mathematics or Control or closely related or relevant field expected to be conferred by June 30, 2017. Teaching experience (demonstrated by college level teaching experience, TA experience, research presentations and/or professional training seminars). Demonstrated record of research and publication.

**PREFERRED QUALIFICATIONS:** University teaching experience, graduate student mentoring experience, demonstrated record of research excellence and productivity, participation and achievement in professional or university organizations, and a record of honors or awards.

**POSITION AVAILABLE:** July 1, 2017 (with academic year beginning September 2017). Review of applications will begin on December 9, 2016. To ensure full consideration, applications should be complete - including letters of recommendation received - by this date. The position will remain open until filled, but not later than 6/30/2017.

Apply at <https://recruit.ucsc.edu/apply/JPF00390>

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### **6.33. Faculty: Abdullah Gul University, Turkey**

Contributed by: Faruk Kececi, [faruk.kececi@agu.edu.tr](mailto:faruk.kececi@agu.edu.tr)

Abdullah Gul University (AGU) invites applications from qualified academics for 4 tenure-track fulltime Assistant Professor faculty positions in the Department of Mechanical Engineering.

The candidate is expected to have a PhD in mechanical engineering or in a closely related field with an expertise in one or more of the following areas: Robotics, design, fluid dynamics, manufacturing and thermal sciences; however, other research areas will also be considered for exceptional candidates. Successful candidates will be expected to initiate and maintain externally funded research programs, be committed to teaching excellence and student mentorship at both undergraduate and graduate levels, and be involved in service to the university and the profession.

About AGU:

AGU is a recently established state university in Kayseri, Turkey with a strong foundation support that significantly supplements the state-provided resources. The university aspires to stimulate innovation and creativity in addressing global problems and to provide added value to society through focused cooperation projects that involve students, faculty, and for- and non-profit organizations. To this end, the university places great emphasis on interdisciplinary research, university-industry collaboration, and innovative teaching. Having a strong community of international faculty and students with a rich multicultural atmosphere is an integral part of the University's vision. AGU, with an English medium of instruction, admitted its first students in the Fall semester of the 2013- 2014 academic year.

The benefits of working at AGU also include eligibility for state pension and other advantages that accrue from being an employee of the state. The university offers internationally competitive salaries and benefit packages, thanks to the support of the AGU Foundation.

Applicants should submit a cover letter, curriculum vitae, statements of research and teaching (only 1 page each), contact information of three professional references to [mefacultysearch@agu.edu.tr](mailto:mefacultysearch@agu.edu.tr) as one pdf file and indicate the field of expertise in the subject line of the email. All applications received before October 14th, 2016 will get full consideration and the positions are open until filled. Detailed information about the university can be found at [www.agu.edu.tr](http://www.agu.edu.tr)

For further questions:

Dr. Kececi

Head of Mechanical Engineering Department

Abdullah Gul University

[mefacultysearch@agu.edu.tr](mailto:mefacultysearch@agu.edu.tr)

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### **6.34. Faculty: University of New South Wales Canberra, Australia**

Contributed by: Valery Ugrinovskii , [v.ougrinovski@adfa.edu.au](mailto:v.ougrinovski@adfa.edu.au)

University of New South Wales Canberra, Australia

School of Engineering and Information Technology - Lecturer/Senior Lecturer/Associate Professor

Employment type: Full time

Salary Range:

Level B: \$98,546 - \$116,171 pa (+17% super) Fixed Term Appointment (2 or 3 years)

Level C: \$119,693 - \$137,320 pa (+17% super) Tenure Track Appointment (5 years)

Level D: \$145,343 - \$159,649 pa (+17% super) Continuing Appointment

Multiple Positions at Level B, C and D.

The School of Engineering and Information Technology delivers research informed education in electrical, mechanical, aeronautical and civil engineering as well as in aviation and information technology to graduates and professionals who will be Australia's future technology decision makers. A number of positions are available for staff to contribute to the excellent teaching programs and research profile of the School. Candidates with expertise in aviation, geotechnical or pavement engineering, mechanical (particularly in practical mechanical engineering design) and systems engineering & technical project management are of particular interest however candidates who can demonstrate synergy with current School Research and Education, High Impact Strategic Themes, School Capabilities or Associated Research Centres or the capacity to develop synergy and collaborate with these areas are also encouraged to apply.

The position will be required to teach at any level of the undergraduate and postgraduate coursework programs within the School of Engineering and Information Technology, advance the School's profile by conducting scholarly research and publishing the outcomes of that research, and to contribute to the effective functioning of the School by other activities as required.

An applicant may be required to undergo pre-employment checks prior to appointment to this role.

To Apply: Please follow the link to UNSW Career Portal

<https://www.unsw.adfa.edu.au/career/academic-job-opportunities>,

Position 56945. Please sign in or register as a new user.

Enquiries: Associate Professor Tapabrata Ray, Phone: +61 2626 88248, Email: [t.ray@adfa.edu.au](mailto:t.ray@adfa.edu.au)

Closing date: 16/10/2016 - 23:30

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### **6.35. Faculty: University of North Texas, USA**

Contributed by: Tao Yang, [Tao.Yang@unt.edu](mailto:Tao.Yang@unt.edu)

The Department of Electrical Engineering at the University of North Texas (UNT) is seeking candidates for three faculty positions at the Assistant (tenure-track) or Associate Professor (tenure-track or tenured) level starting Fall 2017. The positions are open to all areas in electrical engineering with an emphasis on the department's three current thrust areas: aerial communication and signal processing, RF/circuit design and electronic design automation, and systems and control. An earned Ph.D. degree in electrical engineering or a closely related field is required. For the Assistant Professor position we are looking for candidates with a strong publication record and the potential to succeed in securing research funding and mentoring graduate students. For the Associate Professor position we expect a sustained record of providing mentoring to junior faculty, advising graduate students, providing service to the University and profession, and securing external funding for research activities. For the Associate Professor position a significant publication record, and current research funding and graduate student mentoring are also required.

The Electrical Engineering Department offers BS, MS, and Ph.D. degrees in electrical engineering. It is home to over 460 undergraduate and graduate students. Additional information about the department is available at the website: <http://engineering.unt.edu/electrical/>.

Application Procedure:

All applications must be submitted online at: <http://facultyjobs.unt.edu>.

Questions regarding the positions can be directed to the search committee Chair, Dr. Xinrong Li at [xinrong@unt.edu](mailto:xinrong@unt.edu). Offers of employment for these positions will be made dependent upon available funding.

Application Deadline:

The committee will begin its review of applications on November 1, 2016, and continue to accept and review applications until the position is filled.

The University:

UNT, classified in the Carnegie Classification as a Doctoral University: Highest Research Activity (R1), is a major research university with rapidly growing engineering research and educational programs. As the nation's 24th largest public university and the largest, most comprehensive in the Dallas-Fort Worth area, UNT is dedicated to providing an excellent educational experience to its almost 38,000 students through 99 bachelor's, 83 master's, and 36 doctoral degree programs in its 12 colleges and schools, many nationally and internationally recognized. UNT is strategically located in Denton, Texas, a vibrant city with a lively arts and music culture, at the northern end of the Dallas-Fort Worth metropolitan area. The DFW area has more than six million people, with significant economic growth, numerous industrial establishments, and excellent school districts.

The University of North Texas is an Equal Opportunity/Access/Affirmative Action/Pro Disabled & Veteran Institution committed to diversity in its employment and educational programs, thereby creating a welcoming environment for everyone.

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### **6.36. Faculty: Georgia Institute of Technology, USA**

Contributed by: Magnus Egerstedt, [magnus@robotics.gatech.edu](mailto:magnus@robotics.gatech.edu)

Multiple faculty positions in robotics at Georgia Tech

Robotics — as interpreted broadly — is of strategic importance to the Georgia Institute of Technology, and we are continuing to grow our faculty robotics (see <http://robotics.gatech.edu/jobs>).

This year we have a number of faculty openings across the different Schools and Colleges on campus, including in the School of Interactive Computing (job posting: <http://www.ic.gatech.edu/about/faculty-hiring>); the School of Electrical and Computer Engineering (job posting: <https://www.ece.gatech.edu/faculty-openings>); the George W. Woodruff School of Mechanical Engineering (job posting: <http://www.me.gatech.edu/about/employment>); and the Wallace H. Coulter Department of Biomedical Engineering (job posting: <https://academicjobsonline.org/ajo/jobs/7753>).

Interested candidates are encouraged to consult the individual job postings directly for more information.

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### **6.37. Faculty: Norwegian University of Science and Technology, Norway**

Contributed by: Morten Breivik, [morten.breivik@ntnu.no](mailto:morten.breivik@ntnu.no)

The Norwegian University of Science and Technology (NTNU, <http://www.ntnu.edu/>) is establishing the world's first professorship in Big Data Cybernetics in collaboration with KONGSBERG (<http://kongsberg.com/>), combining the fields of automatic control and multivariate data modelling.

For the successful applicant, this represents a unique opportunity to play a central role in the development of a new interdisciplinary field. The position will be affiliated with the Department of Engineering Cybernet-



ics (Institutt for teknisk kybernetikk - ITK, <http://www.ntnu.edu/itk>) at NTNU's Faculty of Information Technology, Mathematics and Electrical Engineering

ITK has 17 full-time professors, 11 adjunct professors, about 10 postdocs and researchers as well as 70 PhD candidates. Approximately 100 MSc candidates graduate annually from the three study programs in cybernetics, which comprise about 650 students in total. The department is involved in numerous research projects and centers, including the Centre of Excellence for Autonomous Marine Operations and Systems (NTNU AMOS, <http://www.ntnu.edu/amos>).

The new field Big Data Cybernetics is envisioned to combine methods from automatic control and multivariate data modelling in order to discover systematic structures in the spatial, temporal and property-profile domains, and to convert these structures into quantitative, human-interpretable information.

The main goal is to translate “big data” from a large number of sensor channels into “smart data” represented by a combination of theory-driven and data-driven models, by combining science’s prior knowledge with nature’s unexpected patterns to identify the relevant structures and develop interpretable and useful models. The overlap between cybernetic subspace identification and chemometric partial-least-squares regression could for instance be a fruitful common ground for the desired high-dimensional, spatio-temporal modelling. The outputs from such models shall be intuitively understandable by humans, who then can use their background knowledge and creativity for further refinement and development. This means that black-box modelling, such as e.g. artificial neural networks or support vector machines, are not the focus of Big Data Cybernetics.

The applicants’ methodological basis should include theory and tools for describing scientific knowledge in terms of both first-principles mathematical models as well as unexpected cluster and subspace structures in large data sets. It is required to document solid competence in at least one of the two fields of automatic control and multivariate data modelling, and the applicant must demonstrate a strong interest in merging these two fields. Knowledge in system identification, nonlinear dynamics, feedback control and self-organization, signal processing, image analysis, visualization or machine learning is an advantage. Thus, several different scientific backgrounds are relevant for this new interdisciplinary field.

The candidate will join a research community at ITK which was rated “excellent from an international perspective” in the Norwegian Research Council’s evaluation of 53 ICT communities in Norway in 2012, as one of three ICT communities to receive such a rating in the Norwegian university and college sector.

The position is announced at

<https://www.jobbnorge.no/en/available-jobs/job/127389/professor-associate-professor-in-big-data-cybernetics>, with final application deadline on Monday October 31.

About NTNU, Trondheim and Norway:

- About NTNU: <http://www.ntnu.edu/>
- NTNU Facts and Figures: <http://www.ntnu.edu/facts>
- NTNU International Researcher Support: <http://www.ntnu.edu/nirs>
- About Trondheim: <http://trondheim.com/>
- About Norway: <https://www.visitnorway.com/about/>
- Working in Norway: <https://www.nav.no/workinnorway/en/Home>
- Practical info about Norway: <http://www.nyinorge.no/en/Ny-i-Norge-velg-sprak/New-in-Norway/>

NTNU is Norway’s largest university, with an annual budget of almost USD 1 billion. Its 70 departments are spread out over fourteen faculties, educating 39.000 students at any one time, of which half study technology and the natural sciences. NTNU graduates about 6.500 bachelor and master students every year, while about 380 doctoral degrees are awarded annually. The university has more than 100 laboratory facilities

distributed among the different faculties and departments.

Many of the technological and cultural innovations that allow Norway to extract oil and gas from the North Sea, grow healthy salmon in fish farms, or interpret the country's 9,000 years of human history have been developed at NTNU. The university itself, founded in 1910, has contributed a solid century of academic achievements and discoveries that have shaped Norwegian society.

While Norway lies at the very top of Europe – and in fact includes the island archipelago of Svalbard, home to the most northerly communities on the planet – the country's climate is moderated by the Gulf Stream, and features four distinct seasons. Norway's natural beauty and a history of famous polar explorers are two reasons why the outdoors is such an important part of Norwegian culture.

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### **6.38. Faculty: San José State University, USA**

Contributed by: Kamran Turkoglu, [kamran.turkoglu@sjsu.edu](mailto:kamran.turkoglu@sjsu.edu)

Assistant Professor in Aerospace Engineering, San José State University

Subject to Budgetary Approval Job Opening ID (JOID):

23790 Rank: Assistant Professor (Tenure-track)

Qualifications: Ph.D. degree in Aerospace Engineering or closely related field by start of appointment.

Specialization in hypersonics and re-entry systems or rotorcraft design preferred. Applicants should have an awareness and sensitivity to the educational goals of a diverse multicultural student population as might have been gained in cross-cultural study, training, teaching and other comparable experience.

Responsibilities: The successful candidate is expected to

- (a) teach and assess undergraduate and graduate courses in their area of specialization,
- (b) develop laboratory experiments to support teaching and research,
- (c) supervise graduate and undergraduate student projects,
- (d) advise graduate and undergraduate students,
- (e) participate in departmental, college, university, and professional service activities, and
- (f) engage in peer-reviewed scholarly work.

Aerospace Engineering faculty members are expected to collaborate with each other as well as with other faculty within and outside the College for course and curriculum design, course and program assessment, and other scholarly pursuits. The candidate must address the needs of a student population of great diversity — in age, cultural background, ethnicity, primary language and academic preparation — through course materials, teaching strategies, and advising.

Salary Range: Commensurate with qualifications and experience.

Starting Date: August 21, 2017

Eligibility: Employment is contingent upon proof of eligibility to work in the United States.

Application Procedures: For full consideration, please upload the following documents:

- (a) letter of application,
- (b) curriculum vitae,
- (c) statement of teaching,
- (d) research interests, and
- (e) at least three original letters of reference with contact information by October 30, 2016 at

<http://apptrkr.com/887575>.

Please include Job Opening ID (JOID) on all correspondence.

For inquiries, please contact: Nikos J. Mourtos, Ph.D. Chair, Aerospace Engineering San Jose State University One Washington Square San Jose, CA 95192-0179 Voice: 408 924-3867 E-mail: [nikos.mourtos@sjsu.edu](mailto:nikos.mourtos@sjsu.edu)

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### **6.39. Researcher: GE, Germany**

Contributed by: Axel Busboom, [busboom@ge.com](mailto:busboom@ge.com)

Researcher / Senior Researcher Automatic Control

\*About us\*

GE Global Research Europe, based in Munich, Germany, is the European branch of GE Global Research - one of the world's most diverse industrial labs with over 3,000 technologists around the globe. The Controls Europe group is an international team of highly qualified research engineers and scientists with backgrounds in controls and related disciplines. The group is conducting research on modeling, estimation, model based control and data science. We closely work with various industrial GE businesses, in particular GE Renewables, GE Power and GE Aviation Systems. We also work with academic and industry partners in collaborative research programs, e.g. H2020 or German government funded projects.

\*Responsibilities\*

We are currently looking for several engineers / scientists with a background in automatic control. Industry experience is not a prerequisite, but applications from experienced candidates are specifically encouraged. Depending on the duration and relevance of your experience, we will rank you in our Technical Career Path (TCP) as a Research Engineer, Lead Engineer, Senior Engineer, or Principal Engineer.

In this role, you will perform applied research in the areas modeling, estimation, control, and real-time optimization for a broad range of industrial applications. You will closely work with other GE Global Research sites around the world, GE businesses, and external collaboration partners. You will validate your results in simulations, on test rigs, and in the field. You will closely work with the GE businesses to ensure a seamless transition of your results into product and service innovations. You will keep abreast of technological and scientific developments in your area, and identify suitable opportunities for new technologies. You will document your results in invention disclosures, reports, conference papers, and presentations to all levels of leadership.

As an experienced candidate, you will have a broader role which additionally includes leading projects and teams, acquiring new research projects internally and externally, influencing technology roadmaps and strategies, and providing guidance and coaching to more junior colleagues.

\*Qualifications\*

- Doctorate in controls or a related discipline (or M.Sc. degree plus at least 3 years of relevant professional experience in advanced controls)
- Very good knowledge of linear and non-linear controls, dynamic systems, estimation, optimization, system identification
- Proficiency with MATLAB / Simulink
- Excellent academic track record and proven scientific achievements (please attach your publication list to your application)
- Excellent communication and presentation skills
- Can-do attitude
- Global mindset and customer focus
- Open, creative and flexible

- Willingness to travel internationally
- Fluency in English

**\*Desired Qualifications\***

- Industry and/or post-doc experience in control systems analysis, design, implementation, integration and verification is a big advantage.
- You should, at least once in your career, have closed a loop on a real physical system, and have a sense of the practical intricacies.
- Experience in at least one application domain relevant to GE is a big advantage (e.g. wind energy, smart grids, avionics, internal combustion engines, compressors, pumps, etc.).

**\*Application\***

For more information and to apply online, visit [www.GECareers.com](http://www.GECareers.com) and search for job number 2730638.

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## **6.40. Engineer: United Technologies Research Center, China**

Contributed by: Zhen Jia, [jjaz@utrc.utc.com](mailto:jjaz@utrc.utc.com)

Electronic Control Systems Engineer / Scientist

United Technologies Research Center (China) - Shanghai

United Technologies Research Center (UTRC) is an internationally recognized corporate research organization of United Technologies Corporation (UTC) that conducts research and development across a range of technology areas to drive its mission of “growth through innovation”. UTRC partners with UTC business units and renowned external research organizations to impact organic growth of the Corporation through new product and process innovations. The operating units of UTC include: Pratt & Whitney (aircraft engines), Otis (elevators and escalators), UTC Climate Controls & Security (HVAC, building controls and security solutions), and UTC Aerospace Systems (aerospace products). Our headquarters is in East Hartford, USA with partnerships worldwide and a research and development center in Shanghai, China.

United Technologies Research Center (China) Ltd. was established in Shanghai in 1997 to provide a technology base for UTC business units via partnerships and collaborative R&D (universities and government institutes). Our engineers and scientists work on global projects in conjunction with other UTC business units and renowned research organizations to bring product and process innovation to enhance UTC products competitiveness in Asia and world-wide. We are a world-class research center advancing technologies that serve energy, environment, controls, security, and embedded systems.

United Technologies Research Center (China) Ltd. invites qualified individuals to apply for the following position in the Shanghai office. This position will compensate the chosen candidate at competitive local Shanghai market wage rate, and benefits will be administered based on local Shanghai benefit practices.

Senior Research Engineer: Electronic Control Systems

Job Description:

- Develop and implement novel control system architecture and algorithms for Heating, Ventilation, and Air-Conditioning (HVAC), security and building related applications.
- Team up with modeling engineers to perform simulation analysis using physics-based and data-driven models as well as design experiments to calibrate physics-based models and verify control performance.
- Interact with UTRC customers for requirements definition, controllers design and implementation for different UTC applications and system solutions.
- Define control algorithms and tuning rules based on system stability analyses, control objectives, sound

theoretical principles for both MIMO and SISO control systems.

- Lead and participate in multidisciplinary projects, ensuring high quality deliverables and seamless integration with other UTRC and UTC business unit teams, as well as university partners.
- Enhance UTRC's recognition through the writing of technical papers and support the recruitment of world-class talent to UTRC.

Minimum Qualifications Required:

- Master with 5+ years' experience or Ph.D. with 3+ years' experience in controls engineering, electrical engineering, applied mathematics, or a closely related field.
- Strong experience in system identification, control system architecture, and algorithm development and implementation.
- Experience in system modeling and identification with data-driven or physics-based models and sensor networks and optimization. Windows or Linux OS based software design.
- Experience in integration solution development in C/C++ and Matlab / Simulink / Stateflow.
- Fluent English (both written and spoken) and excellent communication skills.

Preferred Qualifications:

- Expert knowledge with 10+ years experience in controls technology and implementation, and system optimization.
- Strong experience with model-based control development, including rapid prototyping implementation.
- Demonstrated ability to work effectively with multi-disciplinary teams in dispersed locations.
- Solid technical writing, presentation, project management, and communication skills. Record of technical contributions including patents and publications.
- Strong leadership skills and entrepreneurial attitude towards innovation.

FOR FURTHER INFORMATION OR TO SUBMIT CREDENTIALS PLEASE CONTACT  
jjaz@utrc.utc.com

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#### **6.41. Engineer: NextEV, USA**

Contributed by: Dennis Polischuk, [dennis.polischuk@nextev.com](mailto:dennis.polischuk@nextev.com)

As a senior computer vision engineer, you will be part of a team working towards NextEV's autonomous vehicle vision. You will be working with bright, passionate people to implement the next generation automotive vision, sensing, motion/path planning and machine learning algorithms.

Key Responsibilities:

- Expert knowledge of object detection and classification, with a focus on machine learning and deep learning
- Image labeling and annotation for training
- Vision aided navigation
- Camera calibration techniques, online and offline
- Deep understanding of automotive camera sensor technologies, interfaces, data formats
- Object tracking and data association, sensor fusion, estimation, scene recognition
- Generation and tracking of key performance indicators and regression testing
- Skilled knowledge with parallel programming in CUDA or OpenCL
- Development or use of simulation environments
- Experience working on robotic and/or automotive electronics hardware is a plus

Preferred Qualifications:

- Previous experience in developing automotive vision a plus (lane tracking, vehicle detection and tracking, traffic light/sign detection, ground plane estimation)
- Experience with existing ADAS technologies such as adaptive cruise control, automatic emergency braking, and lane keeping
- Understanding of ADAS sensors such as radar, camera, ultrasonic, and lidar, including the measurement and data-reduction, target identification and environmental synthesis, and sensor fusion
- Previous use or contributions to open source computer vision libraries, such as OpenCV
- Previous use of machine learning frameworks such as Caffe and TensorFlow.
- 2+ years of experience developing software for shipping products
- Strong C/C++ software development experience
- Experience using issue tracking (JIRA) and source control (git) tools

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#### **6.42. Engineer: NextEV, USA**

Contributed by: Michael Harris, [michael.harris@nextev.com](mailto:michael.harris@nextev.com)

Senior Autonomous Control Engineer

Michael Harris

[michael.harris@nextev.com](mailto:michael.harris@nextev.com)

You will be part of a team working towards NextEV's autonomous vehicle vision. You will be architecting and contributing to system that processes input from a variety of vehicle sensors, evaluates possible vehicle strategies/trajectories, and automates the safe control of the vehicle.

Key Responsibilities:

- Path planning, motion planning and decision making (A\*, RRT, etc..)
- Vehicle modeling and dynamics, motion prediction, kinematics
- Control theory and model predictive/adaptive control background
- Machine learning and reinforcement learning
- Mapping and localization algorithms, vehicle state estimation, dead reckoning
- Proficient in high level design and analysis to low level software implementation
- A practical creative hands-on approach to apply the theory required to solve autonomous driving
- Excellent communication skills
- Desire to work in a fast-paced, production oriented environment

Preferred Qualifications:

- MS or PhD in computer science, robotics, aerospace, mechanical engineering or related field
- Professional experience in path planning/decision-making algorithm development
- C/C++ software development
- Hands-on experience in robotic or autonomous vehicle system design and implementation

About NEXTEV USA, Inc.

Our goal is to create a different user experience on a full range of increasingly accessible electric cars. NEXTEV USA, in San Jose, researches and designs EVs. Our product is a connected vehicle - engineered from the ground up as an electric vehicle.

NEXTEV USA is intent on hiring and developing great talent for all disciplines. We have a non-conventional, collaborative, automotive product development philosophy with technical contribution at all levels.

You are expected to be challenged, to create and innovate. You must have a genuine passion for building the most connected vehicles in the world.

NextEV USA is committed to a policy of equal employment opportunity. We recruit, employ, train, compensate, and promote without regard to race, color, age, sex, ancestry, marital status, religion, national origin, disability, sexual orientation, veteran status, present or past history of mental disability, genetic information or any other classification protected by state or federal law.

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