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7.37 Research Scientist: French German Research Institute of Saint-Louis, France
7.38 Control System Engineer: Cornell University, USA
1. IEEE CSS Headlines

1.1. Code Ocean and IEEE DataPort Now Available to IEEE TAC Authors
Contributed by: Alessandro Astolfi, ieeeetac@imperial.ac.uk

Code Ocean and IEEE DataPort are now available to authors of the IEEE T. on Automatic Control.
- Code Ocean is a cloud-based executable research platform that allows authors to share their algorithms in an effort to make the world’s scientific code more open and reproducible. Uploading your algorithms and associated data files to the Code Ocean site is easy. Anyone can run an algorithm posted to Code Ocean, modify it, and test the modifications. The published algorithm that an author posts will remain unchanged.

Any author that has had an IEEE journal article published on IEEE Xplore in the past five years can upload associated algorithms to Code Ocean by visiting
https://codeocean.com/ieee/signup

Once the algorithm is uploaded to Code Ocean, it will be automatically linked to the associated article in IEEE Xplore. Users in IEEE Xplore will be able to discover and access the link to run the algorithm in Code Ocean.

Further information about using Code Ocean can be found at:
https://help.codeocean.com/

- IEEE DataPort™ serves as a valuable and easily accessible repository of datasets and data analysis tools. The repository is designed to accept all types of datasets, including Big Data datasets up to 2TB, and it provides both downloading capabilities and access to Cloud services to enable data analysis in the Cloud. IEEE DataPort™ is a universally accessible web-based portal that serves four primary purposes:
  * Enable individuals and institutions to make datasets easily accessible to a broad set of researchers, engineers and industry;
  * Enable researchers, engineers and industry to gain access to datasets that can be analyzed to advance technology;
  * Make data analysis tools and capabilities available to enable analysis of datasets;
  * Retain referenceable data for reproducible research.

IEEE DataPort™ is an online data repository created and supported by both the IEEE Signal Processing Society (SPS) and the IEEE Big Data Initiative (BDI). IEEE DataPort™ will support IEEE’s overall mission of Advancing Technology for Humanity.
https://ieee-dataport.org/about-ieee-dataport

1.2. IEEE Control Systems Society Technically Cosponsored Conferences
Contributed by: Luca Zaccarian, CSS AE Conferences, zaccarian@laas.fr

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

1.3. IEEE Transactions on Automatic Control

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

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1.4. IEEE Control Systems Society Publications Content Digest

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

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

The CSS Publications Content Digest, available at http://ieeecss.org/publications-content-digest

provides lists of current tables of contents of the periodicals sponsored by the Control Systems Society. Each issue offers readers a rapid means to survey and access the latest peer-reviewed papers of the IEEE Control Systems Society. We also include links to the Society’s sponsored Conferences to give readers a preview of upcoming meetings.

2. Awards

2.1. European Control Award

Contributed by: Paul Goulart, paul.goulart@eng.ox.ac.uk

The “European Control Award (ECA)” is to recognize outstanding contributions by a young researcher in the area of systems and control. The award is sponsored by the European Control Association (EUCA), and will be presented during the annual European Control Conference. The recipient will give a plenary lecture during the final day of the ECC. Details of this award and the nomination procedure can be found at http://www.euca-control.org/eca.html.

We encourage you to identify and to promote potential candidates for the European Control Award 2019, before November 30th 2018.
3. MISC

3.1. Magnetic Bearing Experiment Used for Nonlinear and Multivariable Control Research
Contributed by: Brad Paden, bpaden@launchpnt.com

http://www.launchpnt.com/products/magnetic-bearing-control-engineering-lab-experiment

This magnetic bearing experiment is a 4x4 multivariable control experiment that has been used in a number of research projects [1-5]. The system dynamics are comprised of the rotor bending resonances, actuator inductances, and magnetic nonlinearities in the actuators and sensors. Some versions of the experiment incorporate an air-turbine and can reach two critical speeds of the rotor. A number of publications report experimental results on a range of topics including: system identification, H-infinity control, nonlinear control, decoupling control, rotor dynamics research, active rotor balancing, repetitive control, and sliding mode control. The experiment has a simple interface with BNC connectors for interfacing with many of commercial digital controllers available from Mathworks, National Instruments, dSpace, and others. Preplanned experiments are available.


4. Books

Contributed by: Yasmin Brookes, yasmin.brookes@springer.com

Control Strategies for Advanced Driver Assistance Systems and Autonomous Driving Functions: Development, Testing and Verification by Harald Waschl, Ilya Kolmanovsky and Frank Willems (Eds.)
ISBN: 978-3-319-91568-5
June 2018, Springer
Hardcover, 223 pages, $149.99/EUR 119,99

This book describes different methods that are relevant to the development and testing of control algorithms for advanced driver assistance systems (ADAS) and automated driving functions (ADF). These control algorithms need to respond safely, reliably and optimally in varying operating conditions. Also, vehicles have to comply with safety and emission legislation.
The text describes how such control algorithms can be developed, tested and verified for use in real-world driving situations. Owing to the complex interaction of vehicles with the environment and different traffic participants, an almost infinite number of possible scenarios and situations that need to be considered may exist. The book explains new methods to address this complexity, with reference to human interaction modelling, various theoretical approaches to the definition of real-world scenarios, and with practically-oriented examples and contributions, to ensure efficient development and testing of ADAS and ADF.

Control Strategies for Advanced Driver Assistance Systems and Autonomous Driving Functions is a collection of articles by international experts in the field representing theoretical and application-based points of view. As such, the methods and examples demonstrated in the book will be a valuable source of information for academic and industrial researchers, as well as for automotive companies and suppliers.

Contents
1. Cooperation and the Role of Autonomy in Automated Driving
2. Robust Real-World Emissions by Integrated ADF and Powertrain Control Development
3. Gaining Knowledge on Automated Driving’s Safety—The Risk-Free VAAFO Tool
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4.2. Input-to-State Stability for PDEs

Contributed by: Yasmin Brookes, yasmin.brookes@springer.com

Input-to-State Stability for PDEs by Iasson Karafyllis and Miroslav Krstic
ISBN: 978-3-319-91010-9
June 2018, Springer
Hardcover, 287 pages, $179.99/EUR 149.99

This book lays the foundation for the study of input-to-state stability (ISS) of partial differential equations (PDEs) predominantly of two classes—parabolic and hyperbolic. This foundation consists of new PDE-specific tools.

In addition to developing ISS theorems, equipped with gain estimates with respect to external disturbances, the authors develop small-gain stability theorems for systems involving PDEs. A variety of system combinations are considered:
- PDEs (of either class) with static maps;
- PDEs (again, of either class) with ODEs;
- PDEs of the same class (parabolic with parabolic and hyperbolic with hyperbolic); and
- feedback loops of PDEs of different classes (parabolic with hyperbolic).

In addition to stability results (including ISS), the text develops existence and uniqueness theory for all systems that are considered. Many of these results answer for the first time the existence and uniqueness problems for many problems that have dominated the PDE control literature of the last two decades,
including—for PDEs that include non-local terms—backstepping control designs which result in non-local boundary conditions.

Input-to-State Stability for PDEs will interest applied mathematicians and control specialists researching PDEs either as graduate students or full-time academics. It also contains a large number of applications that are at the core of many scientific disciplines and so will be of importance for researchers in physics, engineering, biology, social systems and others.

Contents
Part I: ISS for First-Order Hyperbolic PDEs
Part II: ISS for Parabolic PDEs
Part III: Small-Gain Analysis

4.3. Stabilizing and Optimizing Control for Time-Delay Systems: Including Model Predictive Controls
Contributed by: Yasmin Brookes, yasmin.brookes@springer.com

Stabilizing and Optimizing Control for Time-Delay Systems: Including Model Predictive Controls by Wook Hyun Kwon and PooGyeon Park
ISBN: 978-3-319-92703-9
July 2018, Springer
Hardcover, 425pp, $179.99/EUR 149.99
https://www.springer.com/gp/book/9783319927039

Stabilizing and Optimizing Control for Time-Delay Systems introduces three important classes of stabilizing controls for time-delay systems: non-optimal (without performance criteria); suboptimal (including guaranteed costs); and optimal controls. Each class is treated in detail and compared in terms of prior control structures. State- and input-delayed systems are considered. The book provides a unified mathematical framework with common notation being used throughout.

Receding-horizon, or model predictive, linear quadratic (LQ), linear-quadratic-Gaussian and $H_\infty$ controls for time-delay systems are chosen as optimal stabilizing controls. Cost monotonicity is investigated in order to guarantee the asymptotic stability of closed-loop systems operating with such controls.

The authors use guaranteed LQ and $H_\infty$ controls as representative sub-optimal methods; these are obtained with pre-determined control structures and certain upper bounds of performance criteria. Non-optimal stabilizing controls are obtained with predetermined control structures but with no performance criteria.

Recently developed inequalities are exploited to obtain less conservative results.

To facilitate computation, the authors use linear matrix inequalities to represent gain matrices for non-optimal and sub-optimal stabilizing controls, and all the initial conditions of coupled differential Riccati equations of optimal stabilizing controls. Numerical examples are provided with MATLAB® codes (downloadable from http://extras.springer.com/) to give readers guidance in working with more difficult optimal and suboptimal controls.

Academic researchers studying control of a variety of real processes in chemistry, biology, transportation, digital communication networks and mechanical systems that are subject to time delays will find the results presented in Stabilizing and Optimizing Control for Time-Delay Systems to be helpful in their work. Practitioners working in related sectors of industry will also find this book to be of use in developing real-world control systems for the many time-delayed processes they encounter.
5. Journals

5.1. Contents: Automatica
Contributed by: John Coca, j.coca@elsevier.com

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5.2. Contents: Systems & Control Letters
Contributed by: John Coca, j.coca@elsevier.com

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This monograph focuses on the key operations of distributed average consensus and weight/flow balancing under a variety of communication topologies and adversarial network conditions such as delays and packet drops. Divided into two parts, Theory and Applications, it first provides the reader with thorough grounding into the theory underpinning the research before discussing two applications in detail. Namely, the coordination of distributed energy resources and the computation of PageRank values.

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5.15. Contents: IFAC Journal of Systems and Control
Contributed by: John Coca, j.coca@elsevier.com

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Volume 4
June 2018
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5.16. CFP: IEEE Transactions on Automatic Control
Contributed by: Zhiyong Chen, zhiyong.chen@newcastle.edu.au

IEEE TRANSACTIONS ON AUTOMATIC CONTROL
Special Issue on: ”Security and Privacy of Distributed Algorithms and Network Systems”

Introduction
The integration of computation, communication and control technologies has led to the emergence and burgeoning of large scale engineering systems, a.k.a., the network systems. These systems find various applications in different fields, including electric and smart grids, transportation and smart cities, healthcare and manufacturing, etc. Due to the rapid growth of the number of geographically deployed units, such as sensors, computers and controllers, traditional centralized control and optimization algorithms may not be applicable or work anymore. Distributed control and optimization algorithms are more promising and desirable to operate and guarantee the well-functioning of the systems, and have the advantages of being flexible, scalable, robust and efficient. Yet, due to their very nature, distributed algorithms are particularly vulnerable to cyber and physical attacks. For example, in the consensus optimization problem, each participant has to cooperatively communicate with its neighbors and update its states according to a predefined rule. If even a single participant is compromised by the attacker, then convergence of the whole network can be prevented easily. Similarly, because distributed control and optimization algorithms usually operate based on predefined rules, attackers can obtain private information by compromising a portion of the participants or eavesdropping broadcast information. For example, in the consensus problem, the state of the agents can be recovered by an attacker by simply spoofing few transmitted messages. Security and privacy issues of distributed control and optimization algorithms are critical in network systems and, if not addressing properly, can result in critical economic losses or even threaten human safety.

It is usually difficult to design secure distributed control and optimization algorithms for network systems. On the one hand, because each participant only knows its own parameters or settings in distributed control and optimization problems, it is challenging to identify the compromised participants. On the other hand, since
practical optimization and control problems in network systems are usually complicated, the attack space is extremely large. Thus, these algorithms inevitably become more complicated. Designing privacy-preserving distributed algorithms while guaranteeing system performance, e.g., high accuracy, fast convergence speed, low computational cost, is another challenging issue for network systems.

Traditional studies on attack modelling, attack detection, privacy preservation, among others, apply usually to centralized systems. Because of different structure and assumptions, these results cannot be applied to the distributed systems in a straightforward way. Recently, researchers have made great efforts to tackle significant security and privacy problems in different network systems, e.g., secure time synchronization in wireless sensor networks, secure and privacy preserving distributed energy management in smart grid, secure distributed estimation, detection and control, privacy preserving decision making, secure and privacy preserving coordination and cooperative control. However, most of these results apply the specific settings, and have limited extensions. Further, with the development of new technologies and the emergence of new demand requirements, existing theoretical results cannot be applied to the distributed networks directly. For example, a lot of efforts have been made to achieve the fault-tolerant consensus. Resilient distributed optimization algorithms have been designed under Byzantine or malicious attacks. But it is still an open question to evaluate the sub-optimality of the final solution of the resilient algorithms under different attacks. Meanwhile, the distributed network system has its special properties, e.g., decentralized resources, complicated algorithm and system structure, which make the attack space much huge. As a result, security and privacy problems in distributed algorithms in network systems, such as attack modeling, defense strategy and privacy analysis, can be more challenging. Thus, we believe that it’s important and timely to launch a special issue in the flagship journal of the control society to emphasize the importance of the analysis and design of secure distributed control and optimization in network systems, which should include both in-depth system theory as well as important applications.

— Thematic Scope

Such a special issue is expected to link practical challenges and requirements with the most recent theoretical advances in this hot research area. This would be the first special issue in a major control journal to have a systematic study of secure and privacy-preserving distributed control and optimization problems in network systems. Some urgent research questions to be answered include but are not limited to the following questions:

- Application-driven models of cyber-physical attacks in network systems
- Secure distributed state estimation and control of network systems
- Effective verification/validation and mechanism design
- Detection, isolation, and classification of attacks
- Self-healing and self-recovery
- Novel privacy notions and properties for network systems
- Privacy preserving distributed algorithms
- Group decision making under security and privacy constraints
- Trading off security, privacy and system performance
- Unified approaches to security and privacy in distributed algorithms and network systems
- Validation of control-theoretic security and privacy methods in real-world applications

— Manuscript Submission

All papers submitted to the special issue will be subject to peer review in accordance with the established practices of the IEEE Transactions on Automatic Control. Papers that do not fall within the scope of the special issue will be returned to the authors without review, to enable them to submit them as regular papers.
through the normal channels. Hardcopy submission will not be accepted. Authors are invited to submit their manuscripts through the Transactions submission site http://css.paperplaza.net/journals/tac/scripts/login.pl (once you login, click on “Submit a new paper to IEEE-TAC” and select the type of submission to correspond to the special issue). The manuscript format should follow the guidelines posted at the website: http://www.nd.edu/ieeetac/information.html.

--- Important Deadlines

Paper submission DEADLINE: January 15 2019
Acceptance: July 15 2019
Tentative Publication: early 2020

--- Guest Editors

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5.17. CFP: Journal of Intelligent and Robotic Systems
Contributed by: George Nikolakopoulos, geonik@ltu.se

Journal of Intelligent and Robotic Systems
Special Issue on: “Visual Perception for Micro Aerial Robots”
--- Introduction

During the last decades, aerial robots have emerged from a concept to a leading-edge technology with the enormous potential to become a valuable tool in multiple applications, in terms of human life safety
and task execution efficiency. So far, the commercial use of aerial robots is mainly restricted within the photography-filming industry, but its growth is rapid, investing nowadays in applications that require autonomous inspection and environmental interaction. The vision of integrating aerial robotic platforms in the industrial process is in its infancy, with quite a few open challenges remaining. One of the backbone functionalities that these platforms should possess to enable and support such tasks are advanced perception capabilities. Specifically, from a scientific point of view, reliable localization, navigation, mapping and object perception are topics that have received a lot of attention, but still require further developments to reify aerial robot autonomous inspection and physical interaction.

— Thematic Scope

The purpose of this special issue is to address theoretical and application-oriented problems in the general area of visual perception for micro-aerial robots and to identify and provide key perception solutions that meet the real-time constraints posed by aerial vehicles, following recent advances in computer vision and robotics. Topics of interest include (but are not limited to):

· Vision-based control and visual servoing
· Visual navigation, mapping, and SLAM
· Cooperative perception using multiple platforms
· Vision-assisted floating-base manipulation
· Deep Learning for visual perception
· Object recognition, tracking, semantic and 3D vision techniques
· Fusion of vision with other sensing systems, e.g., laser scanner
· Advanced visual sensors and mechanisms (event-based, solid state sensors, LiDAR, RGB-D, time-of-flight cameras, etc.)
· Aerial robot applications on key enabling perception technologies
· Model predictive control for vision-based autonomous navigation
· Reinforcement learning for visual perception

— Manuscript Submission

Manuscripts should describe original and previously unpublished results which are currently not considered for publication in any other journal. All the manuscripts shall be submitted electronically at http://www.editorialmanager.com/jint/, and will undergo a peer-review process.

— Additional Information

For further details, please, consult the Journal website at http://www.springer.com/engineering/robotics/journal/10846 or contact the Guest Editors.

— Important Deadlines

Manuscript Submission: 22nd of October 2018
First decision after review: 28th of January 2019
Final acceptance decision: 26th of March 2019

Guest Editors
George Nikolakopoulos
Head of Robotics Team
Luleå University of Technology
Luleå, Sweden

Andreas Nüchter
Robotics and Telematics
6. Conferences

6.1. Allerton Conference on Communication, Control, and Computing

Contributed by: Peggy Wells, pwells@illinois.edu

56th Allerton Conference on Communication, Control, and Computing – October 2-5, 2018

CONFERENCE CO-CHAIRS — Negar Kiyavash & Daniel Liberzon

Manuscripts can be submitted from June 15-July 9, 2018 with the submission deadline of July 9th being firm. Please follow the instructions at allerton.csl.illinois.edu.

PLENARY SPEAKER — A. Stephen Morse, Dudley Professor of Electrical Engineering at Yale University

IMPORTANT DATES

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

AFTER AUGUST 6 — Registration Opens

OCTOBER 2 — Opening Tutorial Lectures given by Paulo Tabuada and Joao Hespanha at the Coordinated Science Lab, University of Illinois at Urbana-Champaign

OCTOBER 3-5 — Conference Sessions at the University of Illinois Allerton Park & Retreat Center. The Allerton House is located 26 miles southwest of the Urbana-Champaign campus of the University of Illinois in a wooded area on the Sangamon River. It is part of the 1,500 acre Robert Allerton Park, a complex of natural and man-made beauty designated as a National natural landmark. Allerton Park has 20 miles of well-maintained trails and a living gallery of formal gardens, studded with sculptures collected from around the world.

OCTOBER 7 — Final Paper Deadline Final versions of papers that are presented at the conference must be submitted electronically in order to appear in the Conference Proceedings and IEEE Xplore.

6.2. International Conference on Control, Automation and Systems

Contributed by: Zee-Yeon Lee, conference@icros.org

2018 18th International Conference on Control, Automation and Systems (ICCAS 2018)

October 17 20, 2018 YongPyong Resort, PyeongChang, GangWon Province, Korea

http://2018.iccas.org

Call for Papers: http://icros.org/data/download/ICCAS2018/ICCAS2018_CFP.pdf

The aim of the ICCAS is to bring together researchers and engineers worldwide to present their latest works, and disseminate the state-of-the-art technologies related to control, automation, robotics, and systems.

IMPORTANT DATES

- June 17, 2018 : Submission of Regular Papers (3-6 pages)
- July 13, 2018: Submission of Organized Session/Mini-symposium Proposal with Papers and Research Poster Papers (1-2 pages)
- July 31, 2018: Notification of Acceptance
- August 31, 2018: Submission of Final Camera-ready Papers

PAPER SUBMISSION:

PAPER SUBMISSION GUIDELINE: http://2018.iccas.org/?page_id=81

Indexed in: IEEE Xplore, EI compendex, and SCOPUS

PLENARY SPEAKERS-
- Edwin K. P. Chong (Colorado State Univ., USA)
- Matthew W. Smuck (Stanford Univ., USA)
- Janan Zaytoon (Univ. of Reims, France)
- Xiaoyan Zhu (Tsinghua Univ., China)
- Hideaki Ishii (Tokyo Inst. of Tech., Japan)

Welcome to PyeongChang, 2018 Winter Olympics Venue –
PyeongChang is a county in Gangwon Province, South Korea. It’s known for Odaesan National Park, with trails crisscrossing the Taebaek Mountains. The park is also home to several Buddhist temples, including Woljeongsa Temple, with its 9-story octagonal pagoda. Lee Hyo-seok Culture Village explores the life of early-20th-century poet Lee Hyo-seok. On the Heungjeong Valley bank are the 7 themed gardens of Herbnara Farm.

General Chair: Chul Joo Hwang (President of ICROS; Jusung Engineering, Korea)
Organizing Chair: Sungwan Kim (Seoul Nat’l Univ., Korea)
Program Chair: Jung Kim (KAIST, Korea)
Organized by Institute of Control, Robotics and Systems (ICROS)
Technically Co-sponsored by: IEEE CSS; IEEE RAS; IEEE IES; SICE; ACA; ISA; CACS; TCCT, CAA; ECTI; CAAI

6.3. CEAS Conference on Guidance, Navigation and Control
Contributed by: Marco Lovera, marco.lovera@polimi.it

Second announcement and call for papers

On behalf of the Organizing Committee and the Council of European Aerospace Societies (CEAS) it is a pleasure to invite you to participate in the 5th CEAS Conference on Guidance, Navigation and Control (EuroGNC 2019), which will be held Wednesday through Friday, April 3-5, 2019 at the Bovisa Campus of Politecnico di Milano, Italy.

EuroGNC brings together on a biannual basis an international community of researchers and practitioners in the field of aerospace guidance, navigation and control to discuss new research results, perspectives on future developments, and innovative applications relevant to aeronautics and space. Scientists and engineers from industry, research institutes and universities involved in the development of novel GNC methods, applications or technologies are invited to attend the 5th EuroGNC. Presentations should focus on technical and scientific
aspects of GNC architectures, algorithms and methods as well as on actual experience gained from real-life applications in those fields.

The 2019 EuroGNC is organized by the Council of European Aerospace Societies (CEAS), with the support of the Italian Member Society – Associazione Italiana Di Aeronautica e Astronautica (AIDAA) and the co-sponsorship of the American Institute of Aeronautics and Astronautics (AIAA) and of the Japan Society for Aeronautical and Space Science (JSASS).

Conference topics include (but are not limited to):
Flight experiments and lessons learned; atmospheric applications; manned fixed-wing and rotary-wing aircraft; missiles; unmanned aerial vehicles; autonomous aerial vehicles; special and unconventional configurations; space applications; reentry, descent and landing; attitude and orbit control; multi-spacecraft applications; high performance satellite control; launcher and ascent control; innovative methods, algorithms, systems and architectures for guidance and control; fault-tolerant control; FDIR algorithms and techniques; nonlinear, adaptive and other novel methods and algorithms; certification aspects; development methods and tools (modeling & simulation, control design, testing, verification and validation); sensors, data fusion, navigation and estimation; inertial & coupled navigation; novel navigation methods (visual, bio-inspired, acoustic, terrain-based).

IMPORTANT DATES
September 15, 2018: Full Papers/Invited Papers Due
December 15, 2018: Acceptance/Rejection Notification
January 15, 2019: Upload Final, Camera Ready Papers

PAPER SUBMISSION
Paper submission site: controls.papercept.net
See the conference website eurognc19.polimi.it for detailed instructions.

CONFERENCE CHAIR
Marco Lovera, Politecnico di Milano, marco.lovera@polimi.it

6.4. IEEE Conference on Industrial Electronics and Applications
Contributed by: Changyun Wen, ecywen@ntu.edu.sg

The 14th IEEE Conference on Industrial Electronics and Applications (ICIEA 2019)
19–21 June 2019, Xi’an, China
http://www.ieeeiciea.org

The 14th IEEE Conference on Industrial Electronics and Applications (ICIEA 2019) will be held during 19-21 June 2019, in Xi’an, China. The Conference is organized by IEEE Industrial Electronics Chapter of Singapore, Xi’an University of Technology, and IEEE Singapore Section. IEEE Industrial Electronics Society is the financial and technical sponsor. The proceedings of past ICIEA have been included in the IEEE Xplore database, Web of Science and indexed by EI Compendex.

ICIEA provides an excellent forum for scientists, researchers, engineers and industrial practitioners throughout the world to present and discuss the latest technology advancement as well as future directions and trends in Industrial Electronics. Authors are invited to submit full papers describing original research works in the following tracks:

- Artificial Intelligence
- Control and Systems: Adaptive and intelligent control, Distributed and decentralized control, Games,
Hybrid control, Networked control, Nonlinear systems, Optimization and optimal Control, Predictive control, Process control, Robust control, System identification and filtering, Uncertain systems, Control system applications
- Cyber-physical Systems: Smart grid, Intelligent transportation systems, Internet of things, Mobile healthcare, Distributed computing, Infrastructure simulations, Security and privacy, Data integration and visualization, New sensing platform and senses computing
- Energy and Environment
- Industrial Informatics and Computational Intelligence
- Robotics
- Network and Communication Technologies
- Power Electronics
- Signal and Information Processing:

Important Dates:
Deadline for Full Paper submission: 1 November 2018
Deadline for Invited and Special Sessions: 15 November 2018
Notification of Acceptance: 15 February 2019
Deadline for Camera Ready Manuscript Submission: 15 March 2019
Deadline for Authors' Registration: 15 April 2019
For more details about the conference, please visit the website http://www.ieeeiciea.org.
Apart from participating in ICIEA 2019, you can also visit the numerous attractions such as Army of Terracotta Warriors and Horses of Xi’an, which was the ancient capital of China for over 1000 years. It has often been said that, "if you have not been to Xi’an, you have not been to China!"

6.5. CDC 2018 Meet the Faculty Candidate Poster Session
Contributed by: Warren Dixon, wdixon@ufl.edu

CDC 2018 Meet the Faculty Candidate Poster Session.
Monday, December 17th, 6:30pm-7:30pm, Glimmer 5, Fontainbleau Hotel, Miami Beach
Abstract: Building on the success of the past several events, the 2018 CDC will also feature the "Meet the Faculty Candidate" poster session. This poster session provides a great opportunity for faculty, search committee members, and recruiters to speak directly with current graduate students and postdoctoral researchers who are seeking faculty positions.
Faculty candidates, registered for the conference, are invited to register for this poster session by completing the online registration form on the conference website by Wednesday October 31st, 2018.
The session will be held on Monday 17th December, 6:30pm-7:30pm in the Glimmer 5 room, Fontainbleau Hotel, Miami Beach. Space will be available on a first-come first-serve basis.
Presenters are asked to bring a poster no larger than 4ft x 6ft along with pushpins to attach the poster. Presenters will likely be more successful providing high level discussions of their work such as motivation, strategies, unique insights, rather than narrow mathematical detailed discussions, unless asked specifically for those details. Presenters are also encouraged to bring copies of their CV for distribution.

6.6. CDC 2018 Workshop on “Traffic Flow Control via PDE Techniques”
Contributed by: Nikolaos Bekiaris-Liberis, nikos.bekiaris@dssl.tuc.gr
CDC 2018 Workshop on “Traffic Flow Control via PDE Techniques”

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

Speakers:
Miroslav Krstic, University of California, San Diego, USA.
Christophe Prieur, CNRS, France.
Iasson Karafyllis, National Technical University of Athens, Greece.
Christian Claudel, University of Texas at Austin, USA.
Maria Laura Delle Monache, Inria, France.
Benedetto Piccoli, Rutgers University, USA.
Paola Goatin, Inria, France.
Gabor Orosz, University of Michigan, Ann Arbor, USA.
Nikolaos Bekiaris-Liberis, Technical University of Crete, Greece.

Registration is available at a rate of 170 USD via https://cdc2018.ieeecss.org/registration.php (for logistic reasons we kindly ask you to register as early as possible).

For more details follow the link http://users.isc.tuc.gr/~nlimperis/Workshop_CDC_2018.html

6.7. CDC 2018 Workshop on “Learning for Control”
Contributed by: Konstantinos Gatsis, kgatsis@sens.upenn.edu

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

Over the past two decades, advances in computing and communications have resulted in the creation, transmission and storage of data from all sectors of society. Over the next decade, the biggest generator of data is expected to be Internet-of-Things devices which sense and control the physical world. This explosion of data that is emerging from the physical world requires a rapprochement of areas such as machine learning, control theory, and optimization. The availability and scale of data, both temporal and spatial, brings a wonderful opportunity for our community to both advance the theory of control systems in a more data-driven fashion, as well as have a broader industrial and societal impact. The goals of our workshop are:
- Present state-of-the-art results in the theory and application of Learning for Control, including topics such as statistical learning for control, reinforcement learning for control, online and safe learning for control
- Bring together some of the leading researchers across the fields in order to promote cross-fertilization of results, tools, and ideas, and stimulate further progress in the area
- Attract new researchers in these exciting problems, creating a larger yet focused community that thinks rigorously across the disciplines and ask new questions

KEYNOTE SPEAKER
Michael I. Jordan, University of California, Berkeley

INVITED SPEAKERS
Dimitri P. Bertsekas, Massachusetts Institute of Technology
Francesco Borrelli, University of California, Berkeley
Giuseppe Carlo Calafiore, Politecnico di Torino
7. Positions

7.1. MS/PhD: Université Laval, Canada

Contributed by: Andre Desbiens, desbiens@gel.ulaval.ca

M.Sc. or Ph.D.: Université Laval, Québec City, Canada

Economic MPC for Reducing the Energy Footprint of a Mineral Processing Plant

Mineral processing plants are infamous for being high intensity energy consumers. The low efficiency of comminution stages, i.e. ore crushing and grinding, largely accounts for the electricity footprint, which incidentally could be significantly reduced by taking advantage of formal process control and optimisation techniques. If such approaches have enabled noteworthy advances for aerospace and petrochemical industry applications, they are still struggling to penetrate the field of mineral processing that is more prone to adopt ad hoc and/or heuristic methods.

The LOOP (Laboratoire d’observation et d’optimisation des procédés / Process observation and optimisation laboratory) is currently looking for an M.Sc. or Ph.D. candidate to study the benefits of unmeasured state observation, and economic MPC (model-based predictive control) for reducing the specific energy consumption of a mineral processing plant. The project is sponsored by Nemaska Lithium, a Canadian mining company developing a world-class spodumene orebody. It is funded through the Programme de recherche en partenariat sur la réduction des émissions de gaz à effet de serre du Fonds de recherche du Québec – Nature et Technologies (FRQNT). The candidate will be part of a research team studying process modelling, regulatory/advanced control, and real-time optimisation issues related to reducing the energy footprint of mineral processing plants.

BACKGROUND

• Electrical/electronic/computer engineering,
Engineering physics, or
Chemical engineering.

**FUNDING**
- Ph.D. : $30,000/year for 3 years;
- M.Sc. : $22,500/year for 2 years.

**APPLICATION**
- Cover letter,
- CV including list of published papers, and
- Academic records.

Send your application to:
Jocelyn Bouchard, Eng., Ph.D.
Associate professor
jocelyn.bouchard@gch.ulaval.ca

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**7.2. PhD: Chalmers University of Technology, Sweden**
Contributed by: Jonas Sjöberg, jonas.sjoberg@chalmers.se

PhD student position in Design and validation methodology of safety systems for cyclists

We invite applications for a Ph.D position in design and validation methodology of safety systems for cyclists. A self-driving bikes is being designed that will be used for validating active safety functions and testing algorithms for manual and self-driving vehicles. The bike is intended to be used in tests together with vehicles and control algorithms will be designed so that it behaves as realistically as possible with the ability to move dynamically and roll around curves. The bike must be self-balancing and be able to carry a dummy to closely resemble a human cyclist. The Ph.D student will be involved in design of the bike to meet the requirements for the tests. Further, developing models and algorithms for the bike and, in cooperation with partners, perform driving tests and evaluate the results from them.

The research project is strongly connected with other ongoing research projects on autonomous vehicles, some of them within the WASP (Walleberg Autonomous Systems Program).

Position summary:
Full-time temporary employment. The position is limited to a maximum of five years.

Application deadline: 31 August, 2018

For more information and application procedure see:

For questions, please contact:
Jonas Sjöberg, (jonas.sjoberg@chalmers.se)
Division of Systems and Control
Tel: +46 31 772 1855

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**7.3. PhD: University of Georgia, USA**
Contributed by: Javad M. Velni, javadm@uga.edu

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Three open positions are available for PhD students at Complex Systems Control Lab in the School of ECE at Univ. of Georgia. The positions are available as early as January 2019. The topics and the desired background are as follows:

1. Control-oriented Modeling and Predictive Control Design for Advanced Combustion Engines

The objective of this project is to develop fundamental tools for dynamic modeling and predictive control of nonlinear and stochastic systems and apply them to high-efficiency low-emission advanced internal combustion engines (ICEs) and in particular dual fuel natural gas engines. The modeling and control design will be done in the linear-parameter varying (LPV) framework.

Strong background in system identification, robust control and optimization theory is required. Prior knowledge of automotive engines modeling and control, MPC and machine learning is desired.

2. Coverage Control of Heterogeneous Multi-agent Systems in Unstructured Environments

The general goal of this project is to develop a robot-assisted field-based high throughput phenotyping system that integrates both ground and aerial vehicles to collect data and unmask plant responses that can inform a new level and quality of decision making in selection of crop genotypes for specific production conditions. A strong computational core of this research is to develop a suite of analytical tools aiming at successful deployment of teams of heterogeneous vehicles (ground and aerial) that can collaboratively collect different types of data, while minimizing energy consumption in a minimum time and meeting practical constraints pertinent to phenotyping.

Strong background in optimization theory is required. Prior knowledge of graph theory and statistical machine learning is desired.

3. Stochastic Control Design for LED Lights Intensity and Spectrum in Greenhouses

The general goal of the project is to develop models and stochastic control schemes to maximize the return on investment of lighting, based on physiological responses, crop value, energy prices, and weather in a network of greenhouses. PhD student will be working on developing a coordinated strategy for lighting control and the energy management system in a greenhouse microgrid.

Strong background in optimization theory and stochastic analysis is required. Prior knowledge of MPC and statistical machine learning is desired.

A competitive research assistantship and full tuition waiver will be offered. Outstanding candidates will also be considered for other fellowships provided by the UGA College of Engineering and Graduate School.

To apply, please send an application package to javadm@uga.edu. The application should be submitted as a single PDF and include a cover letter (explicitly describing the candidate background and how they fit the open positions), a detailed CV (including the list of publications), and unofficial copies of their BS (and, if applicable, MS) transcripts.

University of Georgia (UGA), a top tier one research institution, is ranked 16th overall among all public national universities in the 2018 U.S. News & World Report rankings, and a Princeton Review top ten in value. UGA is recognized as a Public Ivy, a publicly-funded university considered to provide a quality of education comparable to that of an Ivy League university. Athens, GA is located approximately 70 miles northeast of Atlanta, GA. Consistently voted one of the best college towns in the United States, Athens has a thriving business, restaurant and music scene and is the gateway to numerous leisure activities in northern Georgia.
7.4. PhD: French-German Research Institute of Saint-Louis, France  
Contributed by: Spilios Theodoulis, Spilios.Theodoulis@isl.eu  
The Guidance, Navigation & Control (GNC) group of the French-German Research Institute of Saint-Louis (ISL) is inviting applications (only EU citizenship applications will be considered) for three (3) fully funded PhD positions in the general area of flight dynamics and robust guidance and control of aerial vehicles. The successful candidate must hold (or soon complete) an MSc degree on automatic control with additional skills in flight mechanics being also appreciated. Excellent programming skills in MATLAB/Simulink are also required. The positions are to be filled starting from October 2018 and are in collaboration with industry and academia from France and Germany. The institute offers an attractive salary, a multidisciplinary working environment with great scientific interactions and is located near the metropolitan area of Basel.  
To apply for this position, send a CV, transcripts and motivation letter to Spilios.Theodoulis@isl.eu  

7.5. PhD: Robert Bosch GmbH, Germany & IMS Laboratory, France  
Contributed by: SABATIER, jocelyn.sabatier@u-bordeaux.fr  
PhD Student on “Lithium-ion cell thermal modelling with application to temperature and ageing management of a battery pack”  
Supervisors:  
Olivier COIS, Rainer HOERLEIN – Robert Bosch GmbH, Stuttgart, Germany (Rainer.Hoerlein@de.bosch.com)  
Jocelyn SABATIER, Christophe FARGES, Patrick LANUSSE – IMS Laboratory, Bordeaux, France (Jocelyn.sabatier@u-bordeaux.fr)  
Employment:  
3 years, Robert Bosch GmbH PhD salary, conditional to positive admission into the doctoral school  
Key dates:  
To receive full consideration, applications must be done before November 1st, 2018.  
Application must be done with the website:  
Context:  
In order to reduce CO2 emissions, car manufacturers have marketed hybrid vehicles, incorporating boosting and recuperation functions. The implementation of these functions uses 48V battery packs based on lithium-ion cells that currently allow a better compromise between embedded energy and weight (or volume). For these boosting and recuperation applications, and for the sake of economy, the battery packs are dimensioned as tightly as possible in terms of available power and size. In fact, whether in discharge (for starting or boosting the combustion engine) or charge (braking recovery), the cells are highly stressed inducing strong heating. Raising the temperature can be critical for the pack’s operational safety and in any case induces faster aging of the pack cells. Faced with these thermal constraints, the solution currently used is a derating of the electrical power exchanged with the pack in case of excessive temperature. As part of the production of a new generation pack, the aim of the thesis is to go further in thermal management and to propose active management solutions for the pack temperature.  
Candidate profile:  
The candidate will have a MS degree in Control Systems, or related disciplines. Skills in the field of thermal modeling will be appreciated.
7.6. PhD: Centrale Lille, France
Contributed by: Ying TANG, ying.tang@univ-lille.fr

A three years PhD position is available at Centrale Lille, France.

Topic: Stabilization of infinite dimensional systems by hybrid control laws

Job description: Cyber-physical systems integrate simultaneously computational and physical elements. Such systems are typically designed as a network of embedded computers with sensors as physical inputs and actuators as outputs, used in the feedback loop. These systems have received more and more attention in recent years and have become one of the most important research areas. Their massive deployment is due to their advantages in terms of low cost, better performance, flexibility, etc. From the control theory point of view, the design of cyber-physical systems implies the analysis of complex systems with hybrid dynamics. Many studies on stability and control for complex dynamic systems (hybrid systems, sampled-data systems, time-delay systems) have been carried out. The majority of these works are dedicated to the finite dimensional systems (described by ordinary differential equations). On the other hand, we can frequently encounter physical networks represented by infinite dimensional equations (partial differential equations). Among the different models, we can highlight hydraulic networks, road traffic networks or gas pipeline networks. Various approaches of the continuous time control laws have been reported for such infinite dimensional systems. However, the practical implementation of the controllers results in a numerical realization in the form of an algorithm. This implementation can have a crucial effect under control implementation. For the moment, there are few research works on numerical implementation of controllers in the systems described by infinite dimensional equations. From a theoretical point of view, such classes of systems are very interesting since the study of their properties (in terms of stability, stabilization, performance, etc.) remains a very open problem.

In this thesis, we propose to the candidate to develop new theoretical tools of analysis and control for hybrid systems involving infinite dimensional equations and discontinuous controllers. Two main problems will be studied: (1) stability analysis of the system to ensure some performance criteria. (2) hybrid control design to stabilize the system. Numerical applications will be subsequently carried out by the candidate.

More details can be found at
https://sujets-these.lille.inria.fr/details.html?id=a2e92006cbda4217ab23300e1916113b

Applicants should have the following qualifications:
- Solid background in automatic control and/or applied mathematics
- Experience (not mandatory but preferred) with Partial differential equations
- Good level in English
- Skills in Matlab, Latex, and programming (not mandatory but preferred)

To apply, please send the following documents to Laurentiu Hetel (laurentiu.hetel@centralelille.fr) and Ying Tang (ying.tang@univ-lille.fr)
- Detailed CV
- Motivation letter
- Transcripts of records (Undergraduate degree and Master degree)
- Recommendation letters
- Research-oriented documents (e.g. thesis, conference/journal publication)
Resilient Control in Scale-Free Networks
Supervisors: Carlos Canudas-de-Wit (DR-CNRS, main supervisor), Federica Garin (CR-INRIA),
Application type: PhD student. Gross salary: 1757 Euros/month (CNRS official salary for PhD students).
Start: anytime from Sept. 2018. Duration: 36 months. Employer: CNRS. Location: Grenoble, France
Applications: http://scale-freeback.eu/openings/
Required background: Master in control systems engineering or applied mathematics

Context.
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. The overall aim is to
develop holistic scale-free control methods of controlling complex network systems in the widest sense, and
to set the foundations for a new control theory dealing with complex physical networks with an arbitrary
size. Scale-FreeBack envisions devising a complete, coherent design approach ensuring the scalability of the
whole chain (modelling, observation, and control). It is also expected to find specific breakthrough solutions
to the problems involved in managing and monitoring large-scale road traffic networks. Field tests and
other realistic simulations to validate the theory will be performed using the equipment available at the
Grenoble Traffic Lab center (see GTL), and a microscopic traffic simulator replicating the full complexity of
the Grenoble urban network. The proposed work will be undertaken in the context of this project.

Topic description.
Vulnerabilities in network systems involve faults and disruptions not only of some system components (sensors
and actuators), but also of the communication interconnections. Such faults might be either random intrinsic
malfunctions, or malicious external attacks. For example, in an intelligent road infrastructure, intrinsic faults
might be the breakdown of some traffic lights, some closed roads for repair work, or failures of some sensors,
while an example of external attack is a deception attack, where some roadside access point is shunted, so as
to compromise data integrity (injection of fake signals replacing the sensor measurements) and possibly create
a congestion compromising the system. Resilient closed-loop control must preserve correct functioning, or
at least a graceful degradation, under a variety of possible risks, including malicious attacks exploiting some
partial or total knowledge of the system dynamics.
Finding means of detecting and mitigating failures and attacks are the two main goals of this work. Resilient
control of cyber-physical systems is a recent topic attracting a growing attention. Most current literature
concerns linear network systems, in particular for electrical power-distribution networks. Scale-FreeBack
proposes to investigate the resilient control issues arising in traffic networks, and more in general in complex
network systems. This work will build upon previous results from the Scale-FreeBack project, where the
complexity of controlling large network systems is tackled by controlling aggregated variables (e.g., average
densities of some local zones of the traffic network), possibly with evolutionary (i.e., time-varying and state-
dependent) aggregations. More specifically, it is proposed: 1) to develop diagnostic tools for detecting
anomalies and revealing cyber-physical attacks, 2) to define security metrics for evolutionary networks, and
3) to revisit the optimal control design to attenuate the consequences of possible cyber-physical attacks
affecting the most vulnerable nodes.
7.8. PhD: George Washington University, USA
Contributed by: Taeyoung Lee, tylee@gwu.edu

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

1. Uncertainty Propagation for Hybrid Systems
This project is to construct comprehensive computational techniques for stochastic analysis of hybrid systems evolving on a nonlinear configuration manifold, including uncertainty propagation, Bayesian estimation, and stochastic optimal control schemes.

In particular, backgrounds in the following topics are desired.
   a. Stochastic analysis
   b. Hybrid systems
   c. Estimation
   d. Geometric mechanics

This position will be funded by AFOSR, starting from Fall 2018.

2. Dynamics and Control of Flapping Wing Unmanned Aerial Vehicle
This project aims to uncover the biomechanics of Monarch butterflies exhibiting the longest flight range among insects, and to utilize it to develop bio-inspired control schemes for long-range flapping-wing micro aerial vehicles. Backgrounds in the following topics are desired.
   a. Nonlinear dynamics
   b. Nonlinear control theory
   c. Aerodynamics
   d. Geometric mechanics

This position will be funded by NSF, starting from summer 2018.

For both positions, it is expected that the candidates have expertise in structured programming.

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

7.9. PhD: University of Western Ontario, Canada
Contributed by: A. Tayebi, atayebi@lakeheadu.ca

A PhD position in the area of nonlinear observers and control design for Unmanned Aerial Vehicles is available in the ECE department at the University of Western Ontario, London, Canada. A strong mathematical background will be an asset.

The PhD student will be supervised by Prof. A. Tayebi (http://flash.lakeheadu.ca/ tayebi/)

Please e-mail your CV to: atayebi@lakeheadu.ca

7.10. PhD: Polytechnique Montreal & McGill University, Canada
Contributed by: Jerome Le Ny, jerome.le-ny@polymtl.ca
Two fully funded PhD positions are available at Polytechnique Montreal and McGill University (Montreal, Canada) for a joint research project related to the navigation and control of multi-robot systems. Details about the project can be found below. Students with an interest in robotics (in particular multi-robot systems), navigation, guidance, and control, as well as an interest in both theory and experiments, are encouraged to contact Profs. Le Ny, Saussie, and/or Forbes at

jerome.le-ny@polymtl.ca
d.saussie@polymtl.ca
james.richard.forbes@mcgill.ca

Interested applicants should include their CV, transcripts, and statement of interest.

Project synopsis: The operation of teams of robotic vehicles, such as autonomous ground vehicles and drones, in a cooperative manner hinges on robust and reliable navigation, guidance, and control strategies. In order to navigate, robots must estimate their position, orientation, etc. from sensor data. Ultra-wideband (UWB) transceivers can be used for time-of-flight-based (TOF-based) ranging, realizing centimetre-level accuracy over short ranges (e.g., 100 meters). Using both fixed-to-ground and vehicle-mounted UWB transceivers will enable robots to estimate their position and orientation relative to ground transceivers and neighbouring vehicles. Because ranging hinges on a line of sight (LOS) between UWB transceivers, guidance strategies that maintain LOS are also required. Moreover, estimation and control strategies that are cooperative in nature and able to robustly maintain a particular formation dictated by the guidance algorithm are necessary.

Two PhD students are sought to conduct research on UWB-aided cooperative navigation, guidance, and control strategies. One PhD student’s research will focus on cooperative guidance and control. In particular, guidance and control strategies that robustly maintain an optimal configuration, as well as strategies to avoid collisions between robots, will be considered. The other PhD student’s research will focus on UWB-based navigation. Specifically, fusing UWB transceiver measurements with other sensor measurements (e.g., rate gyro, accelerometer, magnetometers, camera) to realize accurate relative position, orientation, etc. estimates will be considered. Both research projects will involve theoretical aspects and experimental validation.

7.11. PhD: University of Kansas, USA
Contributed by: Huazhen Fang, fang@ku.edu

The Information & Smart Systems Laboratory (ISSL) at the University of Kansas currently has one Ph.D. scholarship opening, which is anticipated to start as early as January 2019. The project will be concerned with high-performance battery system design and management and build upon a mix of fundamental and applied research involving optimal control, battery systems and power electronics. Applications are cordially invited from highly self-motivated candidates with a background in electrical, electronic, control or automation engineering. A master’s degree is preferred though not required for the Ph.D. position. The successful applicant will be awarded a competitive scholarship covering both tuition and living expenses.

ISSL is a group of researchers at the University of Kansas working to push the frontiers of information-driven smart systems. The lab performs cutting-edge research on information extraction, analysis and exploitation for dynamic systems to deal with system complexity and enable system intelligence. The ISSL people are committed to pursing new ideas, perspectives and methods synergistically combining estimation, control, optimization, network systems and machine learning to address fundamental and applied problems arising from diverse practical systems.

Inquiries can be addressed to Dr. Huazhen Fang at fang@ku.edu. You are welcome to visit www.issl.space for more information about ISSL. Inquiries about potential postdoc and visiting researcher positions are also
7.12. PhD: Chalmers University of Technology, Sweden
Contributed by: Balazs Kulcsar, kulcsar@chalmers.se

PhD student position in Operational Network Energy Management for Electrified buses

We invite applications for one doctoral position (placed in the Automatic Control Group) on developing scalable, real-time implementable methods for optimizing the energy efficiency of a swarm of electrified vehicles, such as buses. Join us and be one of the first one to improve public transport network homogeneity and optimize powertrain control at the same time. The project will initially focus on designing intelligent algorithms for the public transport in Gothenburg, for which large amount of data on city bus driving has already been recorded. One of the tasks is to investigate and propose an appropriate level of model abstractions and control decomposition into multiple layers that allow a real-time implementable solution. Besides first principle modeling, such solution may also require approximations and reinforcement learning techniques that make use of the big data already available.

Major responsibilities
Apart research, the position also includes teaching on undergraduate and MSc level, or performing similar educational department duties corresponding to a maximum of 20 percent of working hours.

Position summary
Full-time temporary employment. The position is limited to a maximum of five years.

Qualifications
To qualify as a PhD student, you must have a master’s level degree in a relevant field such as control, mathematics, electrical, mechanical, transportation, or engineering physics. Your educational background should cover courses on modeling, basic control course and should have some understanding on optimization and learning algorithms. Ability to initiate new research collaborations is essential. Good communication skills in oral and written English are required.

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

Application procedure
The application should be marked with Ref 20180290 and written in English. The application should be sent electronically

Deadline September 5th 2018

7.13. PhD: University of Sannio, Italy
Contributed by: Davide Liuzza, davide.liuzza@unisannio.it

PhD positions in mobile robotics - Unisannio, Italy

PhD Position available at the Department of Engineering of the University of Sannio in Benevento, Italy.
Contacts: Prof. Luigi Glielmo (email glielmo@unisannio.it), Prof. Luigi Iannelli (email luigi.iannelli@unisannio.it), Dr. Davide Liuzza (email davide.liuzza@unisannio.it), Giuseppe Silano (email giuseppe.silano@unisannio.it).
The GRACE (Group for Research on Automatic Control Engineering) at the University of Sannio offers two PhD positions for an incoming European Project on CPS for farming scenarios to be started in October 2018.

The successful candidates will conduct original research on drone navigation and control in unknown environments (with special emphasis on woods and orchard) based on visual odometry information. Our ideal candidates have a sound knowledge in robotics and computer vision from their Bachelor and Master degrees, experience in drone navigation, SLAM, computer vision algorithms and virtual reality environments for robotic applications (such as Gazebo, V-Rep, Webots, AirSim, etc.). Furthermore, a basic knowledge of ROS is desirable.

The candidates will also have to demonstrate experience in object programming (C++, Java), general skills in computer programming (Python, C, XML, and so on) an excellent academic track record, well developed problem solving skills and a strongly motivated personality. Familiarity with open source OS (Ubuntu) and version control systems (Git and Mercurial) is a plus. Interests in both theoretical robotic research and mobile robotic applications as well as the ability of working independently complete the candidate profiles.

The candidates will be selected according to applicant fulfilment of the above qualifications. Interested candidates must send detailed CV, two contacts to whom we can ask reference letters, and any other useful documentation to the email address: luigi.iannelli@unisannio.it, davide.liuzza@unisannio.it and giuseppe.silano@unisannio.it (please, include all the addresses).

Answers will be given at the beginning of September, 2018.

The selected candidate will join the control system group at the University of Sannio in Benevento, Italy. The project involves an academic and industrial panel of roughly 50 European partners.

7.14. PhD: Delft University of Technology, The Netherlands
Contributed by: Sergio Grammatico, s.grammatico@tudelft.nl

3 PhD positions: Game theoretic Control, Complex Systems of Systems, Operator Theory
Delft Center for Systems and Control (DCSC), Delft University of Technology, The Netherlands.
I am looking for 3 talented, outstanding candidates with an M.Sc. degree (or close to completion) in Systems and Control, or Applied Mathematics, Electrical or Mechanical Engineering, or related field, with theoretical background and interest in System Theory, Automatic Control, Optimization, Game Theory, and with good command of the English language (knowledge of Dutch is not required).

General project description: The candidates will conduct theoretical and algorithmic research on complex multi-agent systems characterized by the presence of: (i) mixed cooperative and noncooperative agents; (ii) uncertain and stochastic variables; (iii) mixed-integer decision variables. The research will develop and build upon tools from game theory, monotone and fixed-point operator theory, statistical learning, distributed optimization and control. The main application areas are distributed control for smart power grids and multi-vehicle automated driving.

The PhD positions are in the context of the research projects ”Complex Network Games: The Scenario Approach” (OMEGA), funded by the Netherlands Organization for Scientific Research (NWO) as TOP grant in Mathematics, and ”Game theoretic Control for Complex Systems of Systems” (COSMOS), funded by the European Research Council as ERC Starting Grant.

Conditions of employment: The appointments will be for 4 years. The PhD students will participate in the training and research activities of the TU Delft Graduate School and of the Dutch Institute of Systems
and Control (DISC). As an employee of TU Delft, the PhD students will receive a competitive salary in accordance with the Collective Labour Agreement for Dutch Universities (CAO), from 2.2k EUR/month (gross, 1st year) to 2.8k EUR/month (gross, 4th year), possibly from 1.7k EUR/month (after taxes, 1st year) to 2.0k EUR/month (after taxes, 4th year), plus holiday allowance (8% of gross annual income) and end-of-year allowance (8.3% of gross annual income), travel budget, secondary benefits, discounts for health insurance and sport membership. Assistance with accommodation can be arranged.

Applications shall include the following documents:

- curriculum vitae;
- statement of motivation and research interests (up to one page);
- transcripts of all exams taken and obtained degrees (in English);
- names and contact information of up to three references (e.g. project/thesis supervisors);
- up to two research-oriented documents (e.g. thesis, conference/journal publication).

Applications or inquiries shall be emailed to prof. Sergio Grammatico (s.grammatico@tudelft.nl).

The starting date are flexible. The call for applications will remain open until the ideal candidates are found.

More information: s.grammatico@tudelft.nl, https://sites.google.com/site/grammaticosergio.

7.15. Ph.D: International Max Planck Research School for Intelligent Systems, Germany

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

Multiple PhD positions in Intelligent Systems, including Control, at the International Max Planck Research School for Intelligent Systems in Stuttgart and Tubingen, Germany

The Max Planck Institute for Intelligent Systems and the Universities of Stuttgart and Tubingen are collaborating to offer a new interdisciplinary Ph.D. program, the International Max Planck Research School for Intelligent Systems. This doctoral program will accept its 3rd Ph.D. generation in spring 2019 and will enroll about 100 Ph.D. students over the next six years. This school is a key element of the state’s “Cyber Valley” initiative to accelerate basic research and commercial development in the broad field of artificial intelligence. Students are sought who want to earn a doctorate in the broad area of intelligent systems, including control systems.

The participating faculty are Frank Allgöwer, Philipp Berens, Matthias Bethge, Michael J. Black, Andrés Bruhn, Martin Butz, Caterina De Bacco, Peer Fischer, Andreas Geiger, Matthias Hein, Philipp Hennig, Ardian Jusufi, Katherine J. Kuchenbecker, Hendrik Lensch, Falk Lieder, Georg Martius, Mi Jung Park, Ludovic Righetti, Bernhard Schölkopf, Fabian Sinz, Metin Sitti, Alexander Spröwitz, Ingo Steinwart, Joerg Stueckler, Gabriele Schweikert, Marc Toussaint, Sebastian Trimpe, Isabel Valera, Ulrike von Luxburg, and Felix Wichmann.

Intelligent systems that can successfully perceive, act, and learn in complex environments hold great potential for aiding society. To advance human knowledge in this domain, we need doctoral students who are curious, creative, and passionate about research to join our school. Learn more at http://imprs.is.mpg.de

All aspects of the program are in English. You may join our program in spring 2019. You will be mentored by our internationally renowned faculty. You will register as a university graduate student and conduct research for approximately three years. You can take part in a wide variety of scientific seminars, advanced training workshops, and social activities. Your doctoral degree will be conferred when you successfully complete your Ph.D. project. Our dedicated coordinator will assist you throughout your time as a doctoral student.
People with a strong academic background and a master’s degree in Engineering, Computer Science, Cognitive Science, Mathematics, Control Theory, Neuroscience, Materials Science, Physics, or related fields should apply.

We seek to increase the number of women in areas where they are underrepresented, so we explicitly encourage women to apply. We are committed to employing more handicapped individuals and especially encourage them to apply. We are an equal opportunity employer and value diversity at our institutions.

Admission will be competitive. If selected, you will receive funding via an employment contract, subject to the rules of the Max Planck Society and the two participating universities.

You can apply at http://imprs.is.mpg.de before midday CET on November 15, 2018. The selection interviews will take place between January 29 and February 1, 2019 in Stuttgart and Tubingen, Germany.

7.16. PhD/PostDoc: KU Leuven, Belgium
Contributed by: Johan Suykens, johan.suykens@esat.kuleuven.be

PhD and Postdoc positions KU Leuven: Optimization frameworks for deep kernel machines

The research group KU Leuven ESAT-STADIUS is currently offering 2 PhD and 1 Postdoc (1 year, extendable) positions within the framework of the KU Leuven C1 project Optimization frameworks for deep kernel machines (promotors: Prof. Johan Suykens and Prof. Panos Patrinos).

Deep learning and kernel-based learning are among the very powerful methods in machine learning and data-driven modelling. From an optimization and model representation point of view, training of deep feedforward neural networks occurs in a primal form, while kernel-based learning is often characterized by dual representations, in connection to possibly infinite dimensional problems in the primal. In this project we aim at investigating new optimization frameworks for deep kernel machines, with feature maps and kernels taken at multiple levels, and with possibly different objectives for the levels. The research hypothesis is that such an extended framework, including both deep feedforward networks and deep kernel machines, can lead to new important insights and improved results. In order to achieve this, we will study optimization modelling aspects (e.g. variational principles, distributed learning formulations, consensus algorithms), accelerated learning schemes and adversarial learning methods.

The PhD and Postdoc positions in this KU Leuven C1 project (promotors: Prof. Johan Suykens and Prof. Panos Patrinos) relate to the following possible topics:

-1- Optimization modelling for deep kernel machines
-2- Efficient learning schemes for deep kernel machines
-3- Adversarial learning for deep kernel machines

For further information and on-line applying, see https://www.kuleuven.be/personeel/jobsite/jobs/54740654” (PhD positions) and https://www.kuleuven.be/personeel/jobsite/jobs/54740649” (Postdoc position) (click EN for English version).

The research group ESAT-STADIUS http://www.esat.kuleuven.be/stadius at the university KU Leuven Belgium provides an excellent research environment being active in the broad area of mathematical engineering, including data-driven modelling, neural networks and machine learning, nonlinear systems and complex networks, optimization, systems and control, signal processing, bioinformatics and biomedicine.
PostDoc, PhD, and Internship Positions in Wearable and Soft Robots at City University of New York

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

Postdoc Position #1 (available now): Mechanical design of wearable robots, soft robots, or legged robots. Experience in actuator design, cable transmission, series elastic actuators, legged robots, hydraulics or pneumatics is a plus.

Postdoc Position #2 (available now): Force and position control of our high-performance wearable robots and legged robot. Experience in impedance control and haptics is a plus.

The successful postdoc candidate will be offered a 12-month contract with a highly competitive salary, commensurable with qualifications and experience. PhD students can be admitted in Spring 2019 or as paid visiting scholar before admission. PhD students will receive tuition scholarship and stipend support. Interns will receive stipend support.

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

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

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

** Application **

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

Hao Su, Ph.D.
Assistant Professor
Director, Lab of Biomechatronics and Intelligent Robotics
Department of Mechanical Engineering
City University of New York, City College
275 Convent Avenue New York, NY 10031
Web: haosu-robotics.github.io
Research and Innovation Positions at the KIOS Research and Innovation Center of Excellence at the University of Cyprus

The KIOS Research and Innovation Center of Excellence at the University of Cyprus announces 20 research positions, for full time or part time employment, funded by the European Union under multiple projects including the flagship KIOS CoE Teaming project, as well as multiple national or industry-funded projects.

The required skills and expertise for the announced positions include one or more of the following areas: Power and energy systems, telecommunication networks, intelligent transportation systems, smart water networks, control systems, computational intelligence and machine learning, optimization and networks, embedded systems and Internet of Things, dependable integrated systems, software defined radio, fault diagnosis, cyber-security, reliability, resiliency and fault tolerance. Motivated candidates with strong mathematical and/or algorithm and software development backgrounds are strongly encouraged to apply.

University of Cyprus

The University of Cyprus was officially founded in 1989 and started operating in Nicosia, the capital of Cyprus, in 1992. Within a short time, the University of Cyprus managed to achieve international recognition through an impressive course of development. Today, it is ranked 64th young university (under 50 years) and #351-400 worldwide by the Times New Higher Education Rankings.

These great distinctions are the result of our dedication to excellence and continuous development. The University of Cyprus managed to stand out and receive awards for the new paths it has opened up in particularly demanding and dynamic contexts of research. The University of Cyprus becomes better every year; therefore, it wishes to attract the best employees.

To this end, the University constantly develops its programs of study and recruits high-caliber staff who will contribute significantly to the design of new curricula, both at undergraduate and graduate level. One of the strategic aims of the University of Cyprus is the further promotion and development of research, in which new staff are expected to play an essential role.

KIOS Research and Innovation Center of Excellence (KIOS CoE)

The KIOS Research and Innovation Center of Excellence is the largest research center at the University of Cyprus and has recently been upgraded to a European Research Center of Excellence through the KIOS CoE Teaming project, with significant funding in excess of 40 million euros over the next 15 years. Currently, the Center employs about 90 researchers (at various ranks/levels), who are supported by externally funded research projects. The vision of KIOS is that it will grow to 150-200 researchers by 2022. KIOS provides an inspiring environment for carrying out top level research in the area of Information and Communication Technologies with emphasis on the Monitoring, Control and Security of Critical Infrastructures including power and energy systems, water networks, transportation networks, telecommunication networks and emergency management and response. The Center instigates interdisciplinary interaction and promotes collaboration between industry, academia and research organizations in high-tech areas of global importance.

EMPLOYMENT TERMS

The positions are on a contract basis. Initially, a one-year contract will be offered but this is renewable based on performance, for multiple years without any limitation. The monthly salary includes employee's
contributions, depends on the candidate’s qualifications and expertise and will be between EUR 1000- EUR 2000 for BSc/MSc holders and between EUR 1800- EUR 3000 for PhD holders. The 13th salary bonus is incorporated in the monthly salary. The positions do not include medical insurance coverage, however the University of Cyprus provides the opportunity, if the employee desires so, to become a member at the State’s healthcare plan (annual cost per person EUR 550) or join the private health care plan (cost of 5.5% of gross salary). Maternity leave will be granted based on Social Insurance Laws from 1980 until 2012.

QUALIFICATIONS

- Bachelor's Degree and/or postgraduate degree (M.Sc., PhD) in Electrical Engineering or Computer Engineering or Computer Science or Mathematics or a related field from an accredited institution.
- Previous research experience will be considered an advantage.

DUTIES AND RESPONSIBILITIES

The successful candidates will have the opportunity to conduct fundamental and/or applied research in the area of Information and Communication Technologies with emphasis on the Monitoring, Control and Security of Critical Infrastructure Systems. Depending on their qualifications and expertise, successful candidates will be responsible to prepare reports and project deliverables, contribute to the preparation of research proposals, algorithm and software development and assist in the supervision of undergraduate students. Furthermore, successful candidates will be encouraged to publish their research results in international conferences and journals.

Interested candidates should submit the following items online on the link: https://applications.ucy.ac.cy/recruitment

i. Cover letter that specifies their employment availability date
ii. A detailed curriculum vitae in English or in Greek
iii. Copies of transcripts of BSc/MSc/PhD degree(s)
iv. Short description of their academic and research experiences (1 page maximum).
v. The names and contact details of at least two University professors from whom references may be requested

The applications should be submitted as soon as possible, but not later than Thursday, 30th August 2018, at 5 pm. The evaluation of the applications will begin immediately. For more information, please contact the KIOS Center of Excellence, by phone at +357 22893460 or via e-mail at kios@ucy.ac.cy.

For more information about these Research and Innovation Positions, please visit the following website: http://www.kios.ucy.ac.cy/index.php/employment-opportunities.html

7.19. PostDoc: Universidad Técnica Federico Santa María, Chile

Contributed by: Juan I. Yuz, juan.yuz@usm.cl

POSTDOCTORAL POSITIONS

The Advanced Center for Electrical and Electronic Engineering - AC3E - was created on 2014 to group individual research efforts into multi- and inter-disciplinary teams and focus research towards industry related problems to spark innovation. The Center is part of Universidad Técnica Federico Santa María - UTFSM - one of the most prestigious universities in Chile and Latin America in the area of science, technology, and engineering.

AC3E is offering up to three postdoctoral fellowships in the following lines of research of the Center: Signals and Systems, Renewable Energy and Power Conversion, Robotics, Electrical Systems, and Data Analytics
and Computational Intelligence.

Required Documents
1. Cover letter explaining your interest in becoming part of AC3E.
2. Curriculum Vitae, including a list of publications.
3. Documentation that evidence the possession of a PhD.
4. Contact details of at least two referees, that may be contacted for a reference letter.

Important Information
• The postdoctoral fellowships are initially for two years and could be extended based on annual evaluation.
• Required documents should be provided in English in a single PDF file.
• AC3E is committed to gender diversity and we strongly encourage female applicants to write confidently about their achievements.
• The positions are for working at AC3E, located at UTFSM main campus in Valparaiso, Chile.
• Selected candidates are expected to join AC3E no later than January 2019.
• Deadline for application submissions is 31 August, 2018.
• Applications should be sent to ac3e@usm.cl with subject POSTDOCTORAL POSITIONS 2018.
• Additional information can be found at www.ac3e.cl and at www.usm.cl
• Further enquiries can be sent to ac3e@usm.cl

7.20. PostDoc: KU Leuven, Belgium
Contributed by: Jan Swevers, jan.swevers@kuleuven.be

PostDoc: KU Leuven, Belgium
Postdoc position on robust optimal feedback control design methodologies for multivariate mechatronic systems

The KU Leuven (Belgium), Department of Mechanical Engineering is searching for a motivated and skilled postdoctoral researcher with a strong background in the development and application of robust feedback control design methodologies and numerical optimization.

This research project is set up to address the strong demand from the industry for control design software that can adequately cope with the complex behavior of multivariate systems and optimize the control configuration, that is, the combination of sensors, actuators, and the control architecture. More complicated controllers and additional sensors and actuators not necessarily lead to an economic profit. The balance between the enhanced performance and robustness and the elevated costs (more sensors and actuators, and a more complex control architecture) must be right. Hence, when considering a more complicated control configuration, a systematic analysis and optimization of this interplay must be performed.

In this research project you will contribute to (1) methodologies and software to design robust optimal controllers for multivariate linear and linear parameter varying systems, (2) methodologies and software for the optimization of control configurations, (3) a user-friendly design interface for (1) and (2), and (4) the application and evaluation of robust optimal controllers on multivariate mechatronic setups with high industrial relevance. This includes experimental identification of the setups, implementation of controllers, comparison of control configurations of different complexity and comparison with decoupled PID-like control approaches. You will work in close collaboration with two PhD researchers that are doing a PhD on the abovementioned topics.
The research will take place in the MECO (Motion Estimation Control and Optimization) research team of the Department Mechanical Engineering of KU Leuven.

URL: https://www.mech.kuleuven.be/en/pma/research/meco

Profile:
An ideal candidate has a PhD degree in engineering (mechanical, control ...) or mathematics and a strong background in development and application of robust control design methodologies, numerical optimization, programming, and is a team player. Proficiency in English is a requirement.

Offer:
A fully funded postdoctoral position in an international context for one year at KU Leuven (renewable); a start date in course of 2018 is to be agreed upon. KU Leuven is among the top European universities and a hub for interdisciplinary research in the fields of systems, control and optimization. Please use the online application tool to submit your application.

https://www.kuleuven.be/personeel/jobsite/jobs/54715540

Include:
• an academic CV with photo,
• a pdf of your diplomas and transcript of course work and grades,
• a list and pdf files of your publications,
• a statement of research interests and career goals (max. 2 pages),
• contact details of at least two referees,

Deadline: August 31, 2018. The position might be filled in earlier if an excellent candidate is found.

7.21. PostDoc: Shanghai Jiao Tong University, China

Contributed by: Weidong Zhang, wdzhang@sjtu.edu.cn

Postdoctoral Position in Shanghai Jiao Tong University, China

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

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

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

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

Required documents
-Detailed curriculum vitae and list of publications;
Postdoctoral position in Shanghai Jiaotong University, China

The Engineer Research Center of Marine Automation, Shanghai Municipal Education Commission (in the Department of Automation, Shanghai Jiaotong University, China) seeks to fill 3 postdoctoral positions as soon as possible thereafter. We are interested in candidates in broad areas of control engineering, marine engineering, unmanned autonomous systems, etc.

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

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

Salary and others:
- RMB 120-200k/year (approximately, 18-30kUSD)
- Apartment with very cheap rent
- It is a 2 year position and can be extended to 5 years

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

For further information, please contact Prof. Dr. Weidong Zhang, Email: wdzhang@sjtu.edu.cn, Tel: +86-21-34204019. Address: Dongchuan Road 800, Shanghai Jiao Tong University, Shanghai 200240, China.
constraints. The intention is that the achieved results will be demonstrated through experiments where the bike is tested together with full-scale vehicles and in collaboration with our industrial partners.

The research project is strongly connected with other ongoing research projects on autonomous vehicles, some of them within the WASP (Wallenberg Autonomous Systems Program).

Application deadline: 31 August, 2018

For more information see:

For questions, please contact:
Jonas Sjöberg, (jonas.sjoberg@chalmers.se)
Division of Systems and Control. Tel.: +46 31 772 1855

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7.23. PostDoc: Chalmers University of Technology, Sweden
Contributed by: Jonas Sjöberg, jonas.sjoberg@chalmers.se

Postdoc position

The objective of this project is to develop an intelligent controller that uses the predictive capabilities of the newly emerging vehicles in order to optimize their energy consumption, emissions, component wear and driving comfort. The predictive control is particularly important for hybrid electric vehicles, which beside the electric machine(s), they possess an additional power source, such as a combustion engine or a fuel cell system. A typical control decision in hybrid electric vehicles is to optimally manage the energy between the different power sources, in order to match acceleration requested by the driver and at the same time to optimize an overall performance index. In the last decade, our division has proposed such predictive controllers, where control functions have been separated within several control layers. The control layers include at least one supervisory controller for optimizing the look-ahead energy management and several local controllers for tracking the set points by the supervisor and for stabilizing the operation of local components.

The specific goal of this project is to propose a real-time implementable energy management system and demonstrate its optimality and computational feasibility in a test rig. The research challenge is to generate a suitable functional architecture that connects the predictive supervisor with a local controller that manages the energy of the electric battery. The study encourages the usage of both model-based techniques and deep learning methods that enable both fast computation of optimal control policies and online adaptation of battery parameters that compensate for dynamics possibly neglected due to computational reasons. The study should investigate the tradeoff between optimality and computational effort for different level of modeling details and sensitivity to the method of adaptation of model parameters.

The position is with the Mechatronics group at Chalmers, where a team of PhD students, post-docs and senior researchers is working on computationally efficient optimization of problems in the area of optimal energy management and autonomous maneuvering/driving. The group is a part of the division of Systems and Control, within the Department of Electrical Engineering (E2), which to a large extent deals with the modeling and development of efficient systems for extracting and processing information. For more information on E2, see also www.chalmers.se/E2/

Application deadline: 2 September, 2018
7.24. PostDoc: EPFL, Switzerland
Contributed by: Alireza Karimi, alireza.karimi@epfl.ch

Post doctoral position in Identification of Distributed Energy Systems

Renewable sources contribute an increasing share of the electrical power, and the concept of distributed generation (DG) is about to completely change the basic architecture of the electric power grid. The new structure includes the interconnections of microgrids that are composed of DG units, loads and energy storage systems. At the same time, vast advances in computational power and the ability to get high-bandwidth measurements thanks to Phasor Measurement Units (PMUs) open up many new possibilities to identify data-driven multivariable dynamic models for the grids. The system nonlinearity and the lack of persistently excitation signals make the system identification a challenging problem. The objective of this project is to develop new identification methods (inspired from machine learning techniques) that, using the available data from the normal operation of a grid, estimate linear (or linear parameter varying) models that can be used for control design.

Application procedure: prospective candidates should send their CV with a motivation letter to alireza.karimi@epfl.ch.
The candidate should have a PhD degree on system identification or related topics. The position is for one year with the possibility of extension.

7.25. PostDoc: Technion Institute of Technology, Israel
Contributed by: Yoash Levron, yoashl@ee.technion.ac.il

We offer a post-doc position in power systems and/or control, at the Technion Institute of Technology, in Israel. For some information about the group recent activities please visit:
- https://yoash-levron.net.technion.ac.il/
- https://a-lab.ee/projects/dq0-dynamics

The appointment will be for 1-2 years, depending on progress.

Requirements
* a Ph.d. in power systems / control systems, or another relevant field.
* We look for excellent candidates, with a proven publication record.

The application should consist of:
- A motivation letter stating why the proposed research topic interests you;
- A complete CV with a full publication list;

Please send these to yoashl@ee.technion.ac.il and juri.belikov@ttu.ee
Postdoctoral Researcher Position on Wireless Networked Control Systems

A postdoctoral researcher position is available at the Distributed Systems Control (DSC) Group, directed by Professor Themistoklis Charalambous, in the Department of Electrical Engineering and Automation, School of Electrical Engineering, Aalto University (AALTO). We are seeking for exceptional postdoctoral researchers to tackle complex and exciting problems in the field of Wireless Networked Control Systems (WNCSs). Come and join us to create the next generation of WNCSs!

In addition to research work, the postdoctoral researcher is expected to participate to the supervision of students and teaching related to their expertise and research topics. The contract period is typically for 1-2 years, with an option for renewal. For exceptional candidates, a longer-term Research Fellow position can be considered. The length of the contract and starting and ending dates are negotiable. The salary level for a postdoctoral researcher is competitive, and depends on experience and qualifications. The contract includes occupational health services and Finland has a comprehensive social security system.

Subject

Wireless Networked Control Systems (WNCSs) have a wide range of applications in a plethora of areas, such as factory automation networks and autonomous systems, including Intelligent Transportation Systems (ITSs) and Robotics. As a result, we have been witnessing a great surge in both research and industrial interest towards the realization of such systems. The postdoctoral researcher is expected to conduct outstanding and independent research on control-aware communication strategies and communication-aware control strategies for WNCSs or a relevant topic.

Candidate’s profile

We are looking for highly motivated, research oriented candidates that have completed their PhD degree before the start of the contract period. Proficiency in English is a necessary prerequisite. In the review process, particular emphasis will be given on the quality of the candidate’s previous research and international experience, together with the substance and innovativeness of their research interests, and their relevance to the DSC group research programs.

How to apply

Please send your application as a single PDF file by the 31st of August 2018, through the recruitment system via http://www.aalto.fi/en/about/careers/jobs/view/1963/. The application should include:
1) Letter of motivation (maximum 1 page in 10pt font size)
2) A complete curriculum vitae describing education and employment history with contact details
3) List of publications, with pointers to at most three of the most relevant publications
4) Contact details of at least two referees

Applications via email will not be taken into account.

Additional information

For further information, please contact Professor Themistoklis Charalambous (firstname.lastname@aalto.fi), and questions related to recruitment process, please contact HR Coordinator Jaana Hanninen (firstname.lastname@aalto.fi).

AALTO reserves the right for justified reasons to leave the position open, to extend the application period and to consider candidates who have not submitted applications during the application period.

Aalto University
AALTO is a community of bold thinkers where science and art meet technology and business. We are committed to identifying and solving grand societal challenges and building an innovative future. AALTO has six schools with nearly 11,000 students and nearly 400 professors. Our campuses are located in Espoo and Helsinki, Finland. The School of Electrical Engineering fosters basic research as well as the development of the latest technologies, providing top-quality engineering education. AALTO’s Shanghai subject ranking 2016 in Electrical & Electronic Engineering is 51-75 worldwide and 13-17 in Europe. AALTO is an international community: more than 30% of our academic personnel are non-Finns. AALTO is in world’s top-10 of young universities (QS Top 50 under 50).

The Department of Electrical Engineering and Automation is a part of AALTO’s School of Electrical Engineering. Hosting a multitude of international and world-leading researchers, the Department of Electrical Engineering and Automation provides a truly inspirational ecosystem, where scientists and engineers from different fields interact and work together by crossing traditional boundaries to solve the most challenging scientific and technological problems, provide an excellent education and produce greater wellbeing for society in general. Its main research focus areas are control, robotics, autonomous systems, power systems, and Industrial electronics and informatics. The department develops technologies, data models and standards supporting the integration of industrial information systems.

7.27. PostDoc: Ohio State University, USA
Contributed by: Ran Dai, dai.490@osu.edu

A postdoc position is available in the area of control and optimization in the Mechanical and Aerospace Engineering Department at the Ohio State University. Qualified candidates with degrees in aerospace engineering, electrical engineering, applied mathematics, or closely related fields are encouraged to apply. Preference will be given to applicants who have experience in either of the two following areas:
1. Optimal control of autonomous systems.
2. Design and experimental test of unmanned ground and aerial vehicles.
Interested applicants may send his/her resume to Dr. Ran Dai at dai.490@osu.edu.

7.28. PostDoc: Delft University of Technology, The Netherlands
Contributed by: Sergio Grammatico, s.grammatico@tudelft.nl

2 PostDoc positions: Game theoretic Control, Complex Systems of Systems, Operator Theory
Delft Center for Systems and Control (DCSC), Delft University of Technology, The Netherlands.

I am looking for 2 talented, outstanding research fellows with a Ph.D. degree (or close to completion) in Systems and Control, or Applied Mathematics, Electrical or Mechanical Engineering, or related field, with theoretical background and interest in System Theory, Automatic Control, Optimization, Game Theory, and with good command of the English language (knowledge of Dutch is not required). Expertise in mixed-integer optimization is appreciated.

General project description: The researchers will conduct theoretical and algorithmic research on complex multi-agent systems characterized by the presence of: (i) mixed cooperative and noncooperative agents; (ii) uncertain and stochastic variables; (iii) mixed-integer decision variables. The research will develop and build upon tools from game theory, monotone and fixed-point operator theory, statistical learning, distributed optimization and control. The main application areas are distributed control for smart power grids and multi-vehicle automated driving.
The PostDoc positions are in the context of the research project ”Game theoretic Control for Complex Systems of Systems” (COSMOS), funded by the European Research Council as ERC Starting Grant.

Conditions of employment: The appointments will be for 3 years. As an employees of TU Delft, the research fellows will receive a competitive salary in accordance with the Collective Labour Agreement for Dutch Universities (CAO), of about 3.2k EUR/month gross, possibly from 2.5k EUR/month after taxes, plus holiday allowance (8% of gross annual income) and end-of-year allowance (8.3% of gross annual income), travel budget, secondary benefits, discounts for health insurance and sport membership. Assistance with accommodation can be arranged.

Applications shall include the following documents:
- curriculum vitae;
- statement of motivation and research interests (up to one page);
- transcripts of all exams taken and obtained degrees (in English);
- names and contact information of up to three references (e.g. project/thesis supervisors);
- up to three research documents (e.g. thesis, conference/journal publication).

Applications or inquires shall be emailed to prof. Sergio Grammatico (s.grammatico@tudelft.nl).

The starting date are flexible. The call for applications will remain open until the ideal candidates are found.

More information: s.grammatico@tudelft.nl, https://sites.google.com/site/grammaticosergio.

7.29. PostDoc: Ghent University Global Campus, South Korea
Contributed by: Shodhan Rao, Shodhan.Rao@ghent.ac.kr

PostDoc Position in Ghent University Global Campus, Incheon, South Korea

Project Description: The advertised position is a part of a project titled "Development of Smart Polymorphic Continuous Automatic Packaging System" which is funded by Korea Evaluation Institute of Industrial Technology (KEIT). The three partner organizations involved in the project are ACE Machinery, Korea Institute of Science and Technology (KIST) Europe and Ghent University Global Campus (GUGC). In general, the project aims to develop a smart automated packaging system that is capable of adapting to changes in object shapes, sizes, production scale, rate, layout design and throughput. At Ghent University Global Campus, we seek a researcher who would eventually be able to design an intelligent control system for the smart packaging system being designed at ACE machinery, that takes as input the production demand and then accordingly synchronizes the performance of the different modules of the packaging system. As such, the researcher is expected to work in close collaboration with partners from ACE machinery involved in this project, understand their specific requirements and eventually design an electronic control system for the smart packaging machines.

Further the candidate is expected to conduct research on the development and implementation of an iterative learning control algorithm in order to improve the performance of the electronic control system designed in the first phase of the project. The candidate is also expected to contribute on the one hand towards disseminating results in the form of conference presentations, journal publications and patent applications and on the other hand towards certain project administrative tasks that include annual report writing and internal accounting of the expenses made towards the project. The duration of the project is roughly one and a half years subject to successful annual progress.

Profile of the candidate
We are looking for candidates with the following qualifications and skills
1) A PhD degree in Electronics/Electrical/Mechatronics Engineering with specialization in Control or Robotics.

2) A strong command and fluency in English.

3) Good oral and written communication skills in English.

4) Excellent academic track record.

5) A strong motivation to perform research in the area of industrial control systems.

6) Strong analytical/mathematical skills.

7) An experience in the design of industrial control systems is desirable.

8) Willingness to learn Korean language.

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

Interested candidates should send their applications before August 31st, 2018 by email to shodhan.rao@ghent.ac.kr with a CV, copies of transcripts and degrees and a motivation letter (please merge all the documents in one file). The candidate will receive an e-mail confirming receipt of the application.

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7.30. PostDoc: Ghent University Global Campus, Korea

Contributed by: Shodhan Rao, Shodhan.Rao@ghent.ac.kr

PostDoc position in Applied Mathematics: Ghent University Global Campus, Incheon, South Korea

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

The research focus of the researcher is expected to be in the area of mathematical biology particularly in the area of stability analysis of biochemical networks. The candidate is also expected to assist his/her supervisor in teaching undergraduate physics and control courses. The candidate will mainly work under the supervision of Prof. Shodhan Rao at GUGC.

We are looking for candidates with the following qualifications and skills

- The candidate should hold or expect to hold by September 1, 2018, a PhD degree in one of the following disciplines: mathematics, systems and control, electrical /electronics /mechanical /chemical engineering with a specialization in systems and control. Exceptional candidates from other engineering/science backgrounds will also be considered.

- The candidate should have had a rigorous undergraduate mathematics and physics training and in general a strong background in mathematics and physics.

- The candidate should be highly motivated to conduct research in the area of applied mathematics, specifically in the area of mathematical biology/chemistry.

- The candidate should have an excellent academic track record, an excellent command of English and good academic writing and presentation skills.

- Knowledge of biology or chemistry at undergraduate level is preferable although not mandatory.
The remuneration for the job will be commensurate with Korean standards for a PostDoc position. In addition, free accommodation within the campus and a yearly travel budget are foreseen. We provide a stimulating research environment within the Biotech Data Science Center of Ghent University Global Campus (GUGC), which is the first campus of Ghent University outside Belgium. This campus is situated in Songdo International City, Incheon, South Korea. GUGC integrates educational and research facilities in a single building. Ghent University has the ambition to organize a first-rate, truly European education in Asia and to develop excellent research in the fields of Molecular biotechnology, Environmental and Food technology. Its programs are accredited in Flanders and in Korea.

The expected starting date of the PostDoc researcher is October 15, 2018. Interested candidates should send their applications before September 15th, 2018 by email to Shodhan.Rao@ghent.ac.kr with a CV, copies of transcripts and degrees and a motivation letter (please merge all the documents in one file).

7.31. PostDoc/Research Scientist: Qingdao University, China
Contributed by: Jiang Wy, jwy1992@126.com

PostDoc / Research Scientist: Qingdao University, China
The Institution for Future is a newly established department in Qingdao University. We have millions of funding and now seeking for some teammates who wishes to lead the future with us. We are interested in candidates in broad areas of control theory and technology, computer science, robotics and other unmanned systems, artificial intelligence, etc. You will be given large freedom for own research ideas and/or practical implementations.

To apply or to request more information, please contact jwy1992@126.com as soon as possible. Application documents should include CV, publication record, and contact details of references.

7.32. Faculty: Rensselaer Polytechnic Institute, USA
Contributed by: Agung Julius, agung@ecse.rpi.edu

The School of Engineering at RENSSELAER POLYTECHNIC INSTITUTE in Troy, NY invites applications for multiple positions at the level of Lecturer, Senior Lecturer, and Professor of Practice in Robotics starting fall 2018. We seek outstanding and energetic candidates to expand robotics course offerings and to help establish a modern robotics curriculum. Candidates should have background and experience in teaching, research, and practice related to robotics systems, software, design, and analysis. Knowledge in the contemporary robotics tools for middleware, embedded systems, visualization, simulation, motion planning, sensing and control is preferred. Additional experience in related areas, such as manufacturing, human-machine interaction, machine learning, computer vision, artificial intelligence, and cognitive science is highly desirable. In addition to contributing to the robotics curriculum and pedagogy, qualified candidates will have opportunities to engage in active research programs in robotics and automation.

The School of Engineering has approximately 175 faculty, 3600 undergraduates, and 600 graduate students, and is in a period of growth. These positions are expected to complement and augment existing strengths in robotics, automation, mechatronics, and manufacturing. Successful candidates are expected to teach undergraduate and graduate courses and laboratory sessions in robotics and related areas, and to participate in activities that strengthen the School of Engineering, Rensselaer, and the broader Rensselaer community.

Applications must include a cover letter, complete curriculum vitae, statement of teaching and research interests, accomplishments and goals (no more than three pages), and names and contact information for
at least three professional references. Please put material in a single PDF document addressed to Prof. John Wen at wenj@rpi.edu with the subject line: Robotics Position. Application review is ongoing and applications will be accepted until these positions are filled.

We welcome candidates who will bring diverse intellectual, geographical, gender, and ethnic perspectives to Rensselaer’s work and campus communities. Rensselaer Polytechnic Institute is an Affirmative Action/Equal Opportunity Employer.

7.33. Faculty: Rensselaer Polytechnic Institute, USA
Contributed by: Agung Julius, agung@ecse.rpi.edu

Tenure-Track Faculty Position in Electrical, Computer, and Systems Engineering

The Department of Electrical, Computer, and Systems Engineering (ECSE) at RENSSELAER POLYTECHNIC INSTITUTE in Troy, NY invites applications for a tenure-track faculty position at the level of Assistant Professor. We seek an individual with demonstrated potential for excellence and innovation in research and teaching. Candidates should have active research interests that are methodologically innovative and tied to one or more compelling application domains. Relevant research themes of this search are robotics, autonomous systems, cyberphysical systems, machine learning, artificial intelligence, and IoT. There will also be opportunities to participate in Institute-wide research initiatives such as the Center for Automation Technologies and Systems, Institute for Data Exploration and Applications, the Cognitive and Immersive Systems Lab, and the Center for Materials, Devices, and Integrated Systems.

The ECSE department is in a period of growth. New faculty will be expected to complement and augment existing departmental strengths in robotics, control, networking, and computer vision. The successful candidate will be expected to teach undergraduate and graduate courses in departmental programs, to develop and maintain a robust program of externally sponsored research, and to participate in activities that strengthen the department, the School of Engineering, Rensselaer and the broader community of research and practice.

The ECSE department awards B.S, M.S./M.Eng and Ph.D. degrees in Electrical Engineering, Computer and Systems Engineering, and Power Engineering. The Department is highly interdisciplinary, with strong education and research connections with other Rensselaer engineering departments and departments in other disciplines such as Computer Science, Mathematical Sciences, and Physics, among others. The Department has 35 faculty, 680 undergraduates and 110 Ph.D. students. ECSE is one of the seven departments in the School of Engineering, which has approximately 160 faculty members, 3000 undergraduates, and 480 graduate students.

Rensselaer Polytechnic Institute is a private research university in Troy, New York, situated at the beautiful confluence of the Hudson and Mohawk Rivers. Founded in 1824, it is the oldest technological university in the English-speaking world. With the university’s involvement, the City of Troy is in the midst of a period of buoyant commercial and cultural resurgence. Beyond Troy are the vibrant urban areas of the greater Capital Region, including Albany, Schenectady, and Saratoga—as well as the beautiful wilderness of the Adirondack region.

Applications must include a cover letter, complete curriculum vitae, statement of research accomplishments and goals, a description of teaching interests, and three professional references. Please send material in a single PDF document to employment@ecse.rpi.edu subject line: ECSE Faculty Position. Application review is ongoing and applications will be accepted until the position is filled.
We welcome candidates who will bring diverse intellectual, geographical, gender and ethnic perspectives to Rensselaer's work and campus communities. Rensselaer Polytechnic Institute is an Affirmative Action/Equal Opportunity Employer.

7.34. Faculty: Rensselaer Polytechnic Institute, USA
Contributed by: Agung Julius, agung@ecse.rpi.edu

Multiple Tenured/Tenure-Track Faculty Positions in Artificial Intelligence and Machine Learning

Rensselaer – IBM Research Partnership

Rensselaer Polytechnic Institute is embarking on an ambitious expansion in Computational Sciences and Engineering research and education, with a focus on creating a research cluster in the area of Artificial Intelligence (AI) and Machine Learning (ML). We seek applications from outstanding candidates at all ranks (assistant, associate, and full professor) who will build upon our existing strengths in these and related areas across the Schools of Science, Engineering, Humanities, Arts and Social Sciences, Management, and Architecture. We seek candidates in research areas to include fundamental advances in AI and machine learning, theory of learning, novel AI algorithms and architectures, and software engineering principles for AI systems (including topics in scalability, robustness, fairness, and verification). In addition to fundamental AI, areas of interest include, but are not limited to, applications of AI and ML in cybersecurity, cyber-physical systems, IoT and edge-computing, and autonomous systems. The ideal candidates will not only develop a scientific program in AI, but also work with researchers making contributions to the use of AI and machine learning in addressing global challenges such as energy and the built environment, climate science, advanced manufacturing, critical infrastructure and supply chain management, the arts, and life sciences and systems biology. These faculty members can have academic appointments in any of the five Schools at Rensselaer depending on the candidate’s background, interests, and the potential for collaboration.

Applicants for senior tenured positions must possess an outstanding record of research accomplishment and a strong commitment to teaching. Applicants for tenure-track Assistant Professor positions must show evidence of both emerging research distinction and a high level of dedication to teaching. Successful candidates will have duties that include teaching graduate and undergraduate courses, developing and maintaining robust programs of research and scholarship, and service to their department and to Rensselaer. We seek highly collaborative applicants with strong technical vision and a focus on emerging 21st century technologies and challenges. At minimum, candidates must have a Ph.D. or foreign degree equivalent in computer science, engineering, or in an appropriate field for their proposed research, along with the ability to demonstrate, through their records, promise of future distinction in scholarship and education.

Qualified applicants must submit statements of research and teaching interests and a curriculum vitae including a list of publications http://rpijobs.rpi.edu/postings/6807. Applicants must also arrange for the submission of three letters of reference (senior candidates can submit a list of 3-5 potential references). Questions about the search may be directed to provostoffice@rpi.edu. Candidates will be reviewed on a continuing basis until the positions are filled.

7.35. Faculty: MINES ParisTech, France
Contributed by: Nicolas Petit, nicolas.petit@mines-paristech.fr

Recruitment of a tenure track assistant professor in automatic control

MINES ParisTech is hiring an assistant professor in automatic control
Developing its research and teaching activities in the field of Automatic Control, MINES ParisTech, member of PSL Research University, opens an assistant professor position.

This 3-years position (for an initial period of one year, renewable twice) is aimed at a young researcher (man or woman), who appreciates a multidisciplinary work combining fundamental research and industrial applications. The successful candidate will take part to the partnership research work of his/her team and contribute to industrial and economic innovation. He/She will also have the opportunity of defining a PhD subject during his/her first year at Centre Automatique et Systèmes (CAS) that he/she will supervise together with a senior member of the team who is officially accredited for such a task.

The position is to evolve into a permanent lecturer and researcher work within 3 years in the framework of a Tenure Track procedure. A description of the process is available on MINES ParisTech website: http://www.mines-paristech.fr/Ecole/Recrutement/Travailler-a-MINES-ParisTech/

In line with its training activity, MINES ParisTech develops a research activity that covers a wide range of scientific disciplines. The eighteen research centers are organized in five departments: Earth and Environmental Sciences, Energy and Processes, Mechanics and Materials, Mathematics and Systems, and finally, Economics, Management and Society.

MINES ParisTech research aims at both academic excellence and socio-economic impact. This research model is developed in close interaction with the socio-economic world: private or public sector companies, and also institutions and public administrations. MINES ParisTech is the first school in France by its volume of research on contracts, carried by Armines, the Mines ParisTech Foundation or MINES ParisTech. This special positioning allows the School expanding its staff and maintains unique experimental and digital platforms highly appreciated by its partners.

This ability of MINES ParisTech and companies to work together on ambitious scientific and industrial issues is recognized nationally and internationally. For example, the CNRS silver medal awarded to Madeleine Akrich, two French Research Agency industrial chairs and the renewal of the Carnot label in 2016. MINES ParisTech is positioned at the 23rd place in the QS World University Rankings by subject and in the top 100, 150 and 300 of the Shanghai engineering thematic rankings.

MINES ParisTech is a top-level engineering school in France. The school has developed research and graduate education, in conjunction with industry and academic partners. Within it, the Centre Automatique et Systèmes (CAS) is a research laboratory specialized in automatic control theory. The research developed at CAS is focused on industrial needs and is the subject of scientific publications. CAS also provides courses for engineering Master students and PhD students.

The laboratory wishes to strengthen its team of 8 researchers, based in Paris and Fontainebleau, and is looking for a person capable of contributing to the field of automatic control theory by developing scientific research relevant to real-world applications.

The successful candidate is expected to have already proven his/her ability to elaborate academic research in Automatic Control. He/she is expected to develop an independent and creative research program devoted to his/her topics, initiate an externally funded research program, and establish a strong relationship with academic communities and technological companies.

Research

CAS wants to strengthen his team in the field of nonlinear control theory, and in particular in observer theory and output feedback theory.
The successful candidate will develop an independent and creative research program devoted to these topics, supervise PhD students, publish in the best journals and international conferences and be an active player in the development of the center’s joint research activities.

Teaching activities

The successful candidate will be encouraged to set up or resume small classes or courses that are part of the educational offer of MINES ParisTech. The teacher may also be involved in the Common Core Teachings and the Option (MAREVA) of his Department in the cycle "Civil Engineer" and the cycle "Engineer Isupfere". He will also be able to intervene in the modules of Generalist Engineer making use of the resources of the Centers of the School. He will finally be able to tutor Acts of Undertaking. He will participate in the selection and graduation of students in the cycles that will appeal to him. He will supervise PhD students, students with Bac +5 or Bac + 6 and engineering students. He will also be able to intervene in the PSL courses. If necessary, it will contribute to the institution’s e-learning offer or to international replications of the School’s courses at its international partners, in both French and English. He will have to prove an educational experience in the field of the job. He will assume his share of the administrative work of organization of the lessons and the industrial visits.

The ability to deliver English lessons or MOOCs is required. An experience of digital education is a plus. He/she will take part to the various undergraduate and graduate courses and teaching sessions in which CAS is involved (which topics cover automatic control, signal processing, optimization, mechatronics, applied mathematics, doctoral courses, courses at SPEIT, courses at PSL CPES), open to MINES ParisTech and PSL students as well as to engineers undergoing post-graduate education. He/she will be encouraged to organize new courses to improve CAS educational offer.

Special features of the candidate’s profile

At the time of the appointment, the applicant must have a doctoral degree in Automatic Control or Applied Mathematics (nonlinear control theory, observers theory, output feedback, stability and stabilization, normal forms, differential geometry, adaptive control) or related subject. The applicant must show interest for science and technology applied to industry applications. As the position implies cooperation with international partners, strong social skills as well as good knowledge of English language are required. Post-doctoral experience in a foreign laboratory would be an asset for this position.

The applicant will have to show his/her capacity to conduct research work in a multidisciplinary context, together with an aptitude for teamwork. A first experience in academic or industrial joint research would be appreciated.

The position will evolve to a permanent position after 3 years for an excellent candidate.

The application file should include:

- a cover letter;
- the candidate’s research project showing the connectivity with research conducted at CAS;
- a detailed CV;
- a list of research work and publications;
- if available, the review reports on the candidate’s doctoral thesis;
- possibly three reference letters directly sent to CAS from specialists selected by the candidate. If not, the file will include at least the names and contact details of three scientific leading figures who could be contacted to give their opinion about the candidate’s work and abilities.

The file should be sent at the latest on October, 1st, 2018 at the following address:
7.36. Faculty: University of Maryland, USA
Contributed by: Nikhil Chopra, nchopra@umd.edu

Open Rank Faculty Positions
Assistant Professor/Associate Professor/Full Professor Department of Mechanical Engineering
University of Maryland, College Park

The Department of Mechanical Engineering at the University of Maryland, College Park (www.enme.umd.edu) invites applications for candidates to apply for full-time tenure-track and tenured faculty positions, with a target start date of January 2019 for some of the positions and September 2019 for others. The hires will conduct research, teach and mentor students, and work with others in a spirit of collaboration to enhance the impact of the department. This will include strong scholarship, innovative teaching of both graduate and undergraduate students, participation in faculty governance and institution-building, service to the broader scientific community, and forming partnerships within the department, school, university, and/or with industrial, governmental, or community partners. Senior hires are expected to have demonstrated leadership and should plan to have impact in new areas. We are interested in applications from individuals working on a broad range of problems in all areas of Mechanical Engineering. We have a particular interest in robotics, dynamics and controls, and energy systems, but individuals who can connect to these areas or who are working at the boundaries of these areas are also encouraged to apply.

Priority will be given to candidates with expertise in one or more of the following technical areas: robotics, dynamics and controls, and energy systems. Candidates for the rank of Associate Professor or Professor should have a strong record of research, educational activities, and service as well as a strong funding history. Candidates should be effective communicators and have an ability and interest in working with diverse student populations having a variety of backgrounds, learning styles, and skill levels.

Qualifications: Candidates must have received/receive a PhD in Mechanical Engineering or a related discipline prior to employment.

Additional Information: For best consideration, applications should be submitted by September 10, 2018, but the positions will remain open until filled. Based upon our commitment to achieving excellence through diversity and inclusion, those who have experience engaging with a range of faculty, staff, and students and contributing to a climate of inclusivity are encouraged to discuss their perspectives on these subjects in their application materials. The review of applications will begin as they are received and continue until the positions are filled.

Apply by uploading the following documents through the UMD employment website at https://ejobs.umd.edu/postings/61686

Cover Letter
Curriculum Vitae
Research Statement
Teaching Statement

Inquiries may be sent to: mefacultyaffairs@umd.edu.

The Department of Mechanical Engineering (www.enme.umd.edu) hosts vibrant education and research programs and is currently ranked in the top twenty of all mechanical engineering graduate and undergraduate programs within the United States. Department faculty members are encouraged to establish multi-disciplinary collaborations with colleagues and leverage a broad spectrum of shared research facilities. The University of Maryland has strong research ties with many government agencies, institutes, research laboratories, and other organizations located in the greater D.C. area.

EEO/AA Policy

The University of Maryland, College Park, an equal opportunity/affirmative action employer, complies with all applicable federal and state laws and regulations regarding nondiscrimination and affirmative action; all qualified applicants will receive consideration for employment. The University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, national origin, physical or mental disability, protected veteran status, age, gender identity or expression, sexual orientation, creed, marital status, political affiliation, personal appearance, or on the basis of rights secured by the First Amendment, in all aspects of employment, educational programs and activities, and admissions.

7.37. Research Scientist: French German Research Institute of Saint-Louis, France

Contributed by: Mrs. Borchert, humanresources@isl.eu

The French German Research Institute of Saint-Louis (ISL), a leader in Europe in research on guided projectiles, is urgently looking for the head of its department "guidance, navigation, control, and System analysis". This department belongs to the division "Flight Techniques for Projectiles", comprising also aerodynamics, real flight experiments and sensors & communication systems departments. Their research is applied to all kinds of guided projectiles, mostly gun-launched. The position is challenging as the division’s roadmap schedules ambitious deadlines for demonstrating the feasibility of an innovative long-range guided projectile concept.

We are currently looking for a
Research scientist (m/f),
Head of the department "guidance, navigation, control, and system analysis".

Your Tasks:
- Develop and maintain, at the highest level, research capabilities in innovative solutions on guidance, navigation and control systems for the needs in guided projectiles, in synergy with the other departments of the division.
- Develop and maintain, at the highest level, evaluation capabilities of performances of guided projectiles concepts.
- Leverage the expertise of academic partners, other research institutes and industry to the benefit of the objectives of the department.
- Engage proactively with industry, so as to anticipate best their needs in terms of research output.
- Establish the research department program in accordance with the strategy and priorities of the Division and with the needs of the French and German Ministries of Defence.
- Manage, plan and evaluate the research carried out in the department.
- Monitor closely the research work of the scientists, engineers and PhD students of the department.
The incumbent is expected to carry out personally research, in addition to the management of the department. The department possesses recognised skills and has developed so far quite innovative solutions.

Other duties:
- Manage the department’s human and financial resources as well as scientific equipment.
- Optimise the use of the department’s capabilities for the proper execution of the research program.
- Involve strongly in the department’s life, cohesion and development.
- Involve strongly in a synergetic approach in particular with the other departments of the division as key for success.
- Increase the scientific reputation of our Institute through high-level publications, involvement in conferences, external communication, etc.

Your Profile:
- PhD in automatic control applied to flight mechanics.
- At least 10 years of experience in high-level research (with a demonstrated prominence in your scientific community), including the effective management of a research team of 10 collaborators at least.
- Skills in guidance, navigation and control, and in system analysis for flying vehicles; additionally, skills in flight mechanics, aeroballistics, aerodynamics, mechatronics would be highly desirable.
- Knowledge in projectile and missile technologies.
- Organisational skills, ability to work effectively as the leader of the team, communication skills.
- An effective work experience in a multinational context and experience in managing multi-partners Projects would be valued.
- Excellent command of English; understanding or even ability to express yourself efficiently in one or both of the French and German languages would be of course a very desirable plus.

The ISL offers an attractive salary, flexible work arrangements and a very friendly work environment. If these challenges appeal to you and you feel you have the right profile, we are looking forward to receive your complete application mentioning the following keyword "GNC-S".

French-German Research Institute of Saint-Louis Mrs. Isabel BORCHERT
5 rue du Général Cassagnou
BP 70034
68301 SAINT LOUIS CEDEX, France
Phone: +33 (0)3 89 69 51 31
humanresources@isl.eu

For more information please visit www.isl.eu.

7.38. Control System Engineer: Cornell University, USA

Contributed by: Edgar J Johnson, ejj33@cornell.edu

Cornell University is seeking an Industrial Control System (ICS) Engineer to work at our main campus in Ithaca, NY.

Position Description:
The ICS Engineer will take the lead role in installing and maintaining utility plant related computer and control system infrastructure to ensure safe, uninterrupted, efficient, and environmentally compliant operation of the University’s utility plants. Performing duties independently and with limited supervision the key
responsibilities include but are not limited to:

- Design, install, and commission control systems, execute modifications and upgrades, and troubleshoot existing control systems.
- Coordinate with suppliers, contractors, and clients to determine IT projects’ scope and cost.
- Support operation of Cornell’s Central Energy Plant (CEP) alarm management system. Work with operations team to add new alarms as needed and remove nuisance alarms if necessary.

Required Qualifications:
BS Electrical or Mechanical Engineering (or equivalent) 3-5 years experience as hands-on Automation Controls Engineer working with machine control and data acquisition.

Specific requirements include:
- Knowledge of control systems architecture and communication protocols.
- Knowledge of control systems installation, troubleshooting practices and procedures.
- Proficiency selecting appropriate sensors, safety hardware, PLC hardware, remote I/O, and VFDs.
- Experience in industrial control equipment
- Ability to become a MCSE (Microsoft Certified Systems Engineer) within 6 months.

Preferred Qualifications:
Master’s degree in Electrical or Mechanical Engineering (or equivalent) with a minor in industrial control processes. 3-5 years of extensive knowledge of utility or industrial plant processes, control philosophies and field control and instrumentation.


For more information or questions, please contact Edgar Johnson by calling 607-254-3337 or email ejj33@cornell.edu.