Welcome to the 336 issue of the Eletter, available electronically here.
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The next Eletter will be mailed out at the beginning of September 2016.

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1. Important Message from CSS President

From: Frank Doyle, 2016 IEEE Control Systems Society President

Colleagues,

I am writing to you today about an urgent matter with far-reaching ramifications for the future of both CSS and IEEE. There is a proposal being advanced at the highest levels of the IEEE to modify the IEEE Board of Directors (the so-called IEEE2030 initiative). This fall, there will be a ballot on a constitutional amendment to modify/optimize the IEEE Board Structure.

At the heart of the amendment is a modified/optimized Board structure, intended to create nimble, flexible, forward-looking organization. However, significant concerns have been raised by a number of CSS members who are familiar with the initiative as well as by several other IEEE societies that are concerned about whether this reorganization still offers the societies a strong enough voice in IEEE Board decisions. Specifically:

- IEEE is a bottom-up member-run organization, run by volunteers. The proposed structure appears to turn IEEE into a top-down organization, run by a small Board of Directors with reduced input from members.
- Members are represented by their Societies and in the existing structure Societies have a strong voice in the decision making process within IEEE. The Societies and sections generate 75%-80% of IEEE’s income. Societies elect directors who represent their members on the Board of Directors (BoD). It appears that the new structure will dilute this voice and move Societies away from the decision process, especially because Societies will no longer elect these Directors directly. They will elect Delegates who will not serve on the Board of Directors but as members of a new body called the Assembly.
- Directors will now be elected by the entire IEEE membership and only candidates that satisfy certain “diversity” conditions set by the BoD can qualify to run.
- The possible benefits of the amendment do not outweigh its risks. It is uncertain how IEEE would be restructured if the amendment is approved. It is premature to vote for something for which the underlying details are still uncertain. The new bylaws are to be written and decided later by the BoD, and will not require member vote.

A second concern that has been voiced by several other societies is that some of the processes followed thus far in IEEE’s handling of the IEEE2030 initiative have strayed from the spirit of IEEE Policy 13.3.A.2 that states “It is the policy of IEEE to facilitate open discussion, including opposing views, of issues and initiatives to appear on the ballot (Constitutional amendment and referendum); this applies to those proposals originated by the IEEE Board of Directors as well as those of other members of IEEE.” For example, there have been accusations of censorship being applied to the statements of those who oppose this initiative.

At the July 5, 2016 meeting of the CSS Board of Governors meeting in Boston, after careful review of these and other considerations, the Board voted unanimously on the following motion:

- Motion: The IEEE Control Systems Society BoG opposes the proposed constitutional amendment and modified board structure on IEEE2030. To reflect this opposition, a statement of opposition will be posted on the Society website and in editions of the E-Letter.

Many geographic units and the governing bodies of over 22 IEEE societies, including the largest societies such as Computer, Communications, Power and Energy, Signal Processing, Circuits and Systems, Electron Devices, Robotics and Automation, and Solid-State Circuits have also voted against endorsing the amendment. At least four past IEEE Presidents and other past IEEE leaders have also spoken against the amendment.
It is very easy to ignore ballot initiatives, especially when there are not familiar names on the ballot. In this case, there is a very important element on the ballot, which you are urged to evaluate and vote upon. A number of resources are available for you to review and make an informed decision:

Additional reasons for opposing the constitutional amendment and proposed restructuring may be found here:
https://ieee2016blog.wordpress.com

For background, the IEEE governing documents, including the Constitution and Bylaws, can be found here:
http://www.ieee.org/about/corporate/governance/index.html

The proposed changes to the Constitution can be found here:
https://www.ieee.org/about/corporate/election/2016_constitutional_amendment.html

In addition, the IEEEin2030 Ad Hoc Committee’s advocacy of proposed changes to the IEEE’s organizational structure is posted on an official IEEE website here:
https://www.ieee.org/about/corporate/ieeein2030_archive_m.html

Respectfully yours,
Frank Doyle
2016 IEEE Control Systems Society President

2. IEEE CSS Headlines

2.1. IEEE Control Systems Society Publications Content Digest
Contributed by: Elizabeth Kovacs, ekovacs2@nd.edu

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.

2.2. IEEE Transactions on Automatic Control
Contributed by: Elizabeth Kovacs, ekovacs2@nd.edu

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2.3. IEEE Transactions on Control of Network Systems
Contributed by: Denise Joseph, dejoseph@bu.edu

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2.4. 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:


For a full listing of CSS technically cosponsored conferences, please visit http://ieeecss.org/conferences/technically-cosponsored, and for a list of the upcoming and past CSS main conferences please visit http://ieeecss.org/conferences

3. Books

3.1. Economic Model Predictive Control: Theory, Formulations and Chemical Process Applications
Contributed by: Panagiotis Christofides, pdc@seas.ucla.edu

Economic Model Predictive Control: Theory, Formulations and Chemical Process Applications
Matthew Ellis, Jinfeng Liu and Panagiotis D. Christofides
Springer, Advances in Industrial Control Series
ISBN 978-3-319-41108-8

Book Description:
This book presents general methods for the design of economic model predictive control (EMPC) systems for broad classes of nonlinear systems that address key theoretical and practical considerations including recursive feasibility, closed-loop stability, closed-loop performance, and computational efficiency. Specifically, the book proposes: Lyapunov-based EMPC methods for nonlinear systems; two-tier EMPC architectures that are highly computationally efficient; and EMPC schemes handling explicitly uncertainty, time-varying cost functions, time-delays and multiple-time-scale dynamics.

The proposed methods employ a variety of tools ranging from nonlinear systems analysis, through Lyapunov-based control techniques to nonlinear dynamic optimization. The applicability and performance of the proposed methods are demonstrated through a number of chemical process examples. In addition to being mathematically rigorous, these methods accommodate key practical issues, for example, direct optimization of process economics, and computational efficiency. Numerous comments and remarks providing fundamental understanding of the merging of process economics and feedback control into a single framework are included. A control engineer can easily tailor the many detailed examples of industrial relevance given within the text to a specific application.
The book presents a rich collection of new research topics and references to significant recent work making Economic Model Predictive Control an important source of information and inspiration for academics and graduate students researching the area and for process engineers interested in applying its methods.

4. Journals

4.1. Contents: Automatica

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http://www.sciencedirect.com/science/journal/00051098/70

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4.2. Contents: IMA Journal of Mathematical Control and Information

Contributed by: Kathryn Roberts, kathryn.roberts@oup.com

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4.3. Contents: Control Engineering Practice
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4.4. Contents: Asian Journal of Control
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4.5. Contents: IEEE/CAA Journal of Automatica Sinica
Contributed by: Yan Ou, yan.ou@ia.ac.cn

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- The Consensus of Multi-Agent Systems with Uncertainties and Randomly Occurring Nonlinearities via Impulsive Control, Dandan Li, Jing Ma*, Hengmin Zhu, and Mei Sun 1005-1011
- Complete Delay-decomposing Approach to Exponential Stability for Uncertain Cellular Neural Networks with Discrete and Distributed Time-varying Delays, Yuanhua Du*, WuWen, Shouming Zhong, and Nan Zhou 1012-1020
- Smooth Trajectory Planning for a Parallel Manipulator with Joint Friction and Jerk Constraints, Liang Liu, Chaoying Chen, Xinhua Zhao*, and Yangmin Li* 1021-1035
- Position Coordinate Representation of Flying Arrow and Analysis of Its Performance Indicator, Yeongsang Jeong, Suryo Adhi Wibowo, Moonjae Song, and Sungshin Kim* 1036-1045
- Modeling and Simulation of Quadrotor UAV with Tilting Rotors, Mahmoud Elfeky*, Moustafa Elshafei, Abdul-Wahid A. Saif and Mohamed F. Al-Malki 1046-1054
- Alternative Identification of Wheeled Mobile Robots with Skidding and Slipping, Hyoseok Kang, Chang-Woo Park, and Chang-Ho Hyun* 1055-1062
- Minimizing Human-exoskeleton Interaction Force by Using Global Fast Sliding Mode Control, Duong Mien Ka*, Cheng Hong, Tran Huu Toan, and Jing Qiu 1063-1072
- Bilateral Control Based Rupture Protection Method in Surgical Robot Using Improved Master Device, Ju Seok Kang, Min Cheol Lee*, and Sung Min Yoon 1073-1080
- Attitude Control for Astronaut Assisted Robot in the Space Station, Jinguo Liu*, Qing Gao, Zhiwei Liu, and Yangmin Li* 1081-1094
- Control of a Robotic Manipulator in the Polar Coordinate System using a Biarticular Actuation Mechanism, Hyunjin Choi, Sehoon Oh, and Kyoungchul Kong* 1095-1105
- Hybrid Position/Force Control using an Admittance Control Scheme in Cartesian Space for a 3-DOF Planar Cable-driven Parallel Robot, JongPyo Jun, Xuemei Jin, Andreas Pott, Sukho Park, Jong-Oh Park*, and Seong Young Ko* 1106-1113
- Chaotic Synchronization of Regular and Irregular Complex Networks with Fractional Order Oscillators, Sara Angulo-Guzman, Cornelio Posadas-Castillo*, Miguel Angel Platas-Garza, David Alejandro Diaz-Romero, and Didier Lopez-Mancilla 1114-1123
- Coexisting Attractors Generated from a New 4D Smooth Chaotic System, Qiang Lai* and Shiming Chen 1124-1131
- Fast Acquisition of GPS L5 PRN and NH Code Using L1 Signal for Software Receivers, Jung-Hoon Lee and Duk-Sun Shim* 1132-1138
- Consensus of Agents with Mixed Linear Discrete Dynamics, Yun-Zhong Song 1139-1143

4.7. Contents: International Journal of Control
Contributed by: Bing Chu, b.chu@soton.ac.uk

International Journal of Control
- Distributed and boundary optimal control of the Allen-Cahn equation with regular potential and dynamic boundary conditions, T. Benincasa, L. D. D. Escobar and C. Moro'antu, pages 1523-1532
- Estimating parameters with pre-specified accuracies in distributed parameter systems using optimal experiment design, M. G. Potters, X. Bombois, M. Mansoori and P. M. J. V. d. Hof, pages 1533-1553
- Output feedback robust MPC for LPV system with polytopic model parametric uncertainty and bounded disturbance, B. Ding and H. Pan, pages 1554-1571
- A decoupled approach to filter design for stochastic systems, A. Barbata, M. Zasadzinski, H. S. Ali and H. Messaoud, pages 1572-1591
- The optimal control of a new class of impulsive stochastic neutral evolution integro-differential equations with infinite delay, Z. Yan and F. Lu, pages 1592-1612
- Convex aggregative modelling of infinite memory nonlinear systems, P. Wachel, pages 1613-1621
- PD-like controller for delayed bilateral teleoperation of wheeled robots, E. Slawi'ski, V. Mut and D. Santiago, pages 1622-1631
- Simultaneously stabilising controllers for time-varying linear systems within the framework of nest algebras, H. Wang, T. Yu and J. Xiao, pages 1632-1640
- Vibration control for a nonlinear three-dimensional flexible manipulator trajectory tracking, Y. Zhang, J. Liu and W. He, pages 1641-1663
- Distributed stochastic multi-vehicle routing in the Euclidean plane with no communications, A. Pietrabissa, pages 1664-1674
- Non-predictor control of a class of feedforward nonlinear systems with unknown time-varying delays, M.-S. Koo and H.-L. Choi, pages 1675-1683
- Further results on the L1 analysis of sampled-data systems via kernel approximation approach, J. H. Kim and T. Hagiwara, pages 1684-1697
- Robust nonlinear generalised predictive control for a class of uncertain nonlinear systems via an integral sliding mode approach, R. Errouissi, J. Yang, W.-H. Chen and A. Al-Durra, pages 1698-1710
- An analysis and design method for a class of nonlinear systems with nested saturations, Q. Wang, M. Ran and C. Dong, pages 1711-1724
- Distributed model predictive control with hierarchical architecture for communication: application in automated irrigation channels, A. Farhadi and A. Khodabandehlou, pages 1725-1741

5. Conferences

5.1. International Conference on Hybrid Systems: Computation and Control
Contributed by: Necmiye Ozay, necmiye@umich.edu

20th International Conference on Hybrid Systems: Computation and Control (HSCC)
April 18-21, 2017,
Pittsburgh, Pennsylvania, USA
URL: http://hscc2017.ece.illinois.edu/
Important dates
Paper Submission deadline: October 13, 2016 (firm, 11:59 pm UTC-12)
Rebuttal phase: TBA
Notifications: December 20, 2016
Demo/poster submission: TBA
Camera-ready: February 16, 2017
Conference dates: April 18-21, 2017

Conference Scope
HSCC 2017 is the 20th in a series of conferences on all aspects of hybrid systems. It is dedicated to advancing design and analysis techniques that bridge control theory and computer science, and is expanding to new domains in security and privacy and in systems biology. The conference covers the range from theoretical results to practical applications and experiences in cyber-physical systems (CPS), mixed signal circuits, robotics, infrastructure networks, and biological models. Topics of interest include, but are not limited to, the following subjects:
* Mathematical foundations, computability and complexity
* Modeling paradigms and techniques
* Design, synthesis, planning, and control
* Analysis, verification, validation, and testing
* Programming and specification languages
* Network science and control over networks
* Security and privacy in cyberphysical systems
* Software tools
* Applications and case studies

HSCC 2017 will be part of the ninth Cyber Physical Systems Week (CPS Week), and co-located with the International Conference on Cyber-Physical Systems (ICCPs), Information Processing in Sensor Networks (IPSN), the Real-Time and Embedded Technology and Applications Symposium (RTAS), Conference on Internet-of-Things Design and Implementation (IOTDI), and related workshops.

Regular papers: Submissions should present unpublished original research, not under review elsewhere. Maximum 10 pages in 10pt, two-column ACM format. This year we will enforce a light double-blind reviewing process; the conference webpage will have more details. Paper submissions should be preceded by an abstract (date TBA). Authors of distinguished papers may be invited to submit an extended version of their work for possible publication in a Special issue of a leading journal. A Best Student Paper Award will be presented to the author of the best paper written solely or primarily by a student.

Tool and case study papers: Tool Papers should describe an implemented tool and its novelty. Maximum 6 pages in the 10pt, two-column ACM format.

Demo/posters: Demo/poster descriptions are used for selecting contributions for demo/poster session, and will not be published in the proceedings. Maximum 2 pages, ACM format. Title should begin with “Demo (Poster):”. Descriptions should be submitted to the “Demonstrations and Posters” track at the submission website.

Submission website for papers: https://easychair.org/conferences/?conf=hscc17

Repeatability evaluation: Authors of accepted papers will be invited to participate in an optional repeatability evaluation process after the camera-ready submission. Papers that pass will receive the “artifact evaluated” badge and there will be a Best RE Award.

The official publication date may be up to two weeks before the conference.

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5.2. International Symposium on Distributed Autonomous Robotic Systems  
Contributed by: Roderich Gross, r.gross@sheffield.ac.uk

Last Call for Papers  
DARS 2016  
13th International Symposium on Distributed Autonomous Robotic Systems  
November 7-9, 2016. Natural History Museum, London, UK  
http://dars2016.org

IMPORTANT DATES  
July 12, 2016 Paper Submission Extended (23:59 PDT)  
September 7, 2016 Author Notification  
September 21, 2016 Camera Ready Submission  
November 7-9, 2016 Conference

PUBLICATION DETAILS  
All accepted contributions will be included as full-length papers in the Proceedings of DARS 2016. The proceedings will be published in the Springer STAR series (Springer Tracts in Advanced Robotics):  

In addition, the Autonomous Robots journal plans to publish a special issue on Distributed Robotics in cooperation with DARS (details about the open call will be announced in due course).

KEYNOTE SPEAKERS  
Nikolaus Correll - University of Colorado Boulder, USA  
Vijay Kumar - University of Pennsylvania, USA  
James AR Marshall - The University of Sheffield, UK  
Katia Sycara - Carnegie Mellon University, USA

5.3. Workshop on Control, Optimisation and Networks  
Contributed by: Malcolm Smith, mcs@eng.cam.ac.uk

Two workshops will be held at the University of Cambridge, United Kingdom, on September 19-22, 2016. The workshops aim to connect researchers from the sciences, mathematics, and engineering who share an interest in control theory. Discounted accommodation is available at Pembroke College for registrations completed by 15 August.

WORKSHOP ON CONTROL, OPTIMISATION AND NETWORKS, 19-20 Sept 2016  
This workshop marks the contributions of Professor Jan Maciejowski to the control field on the occasion of his retirement.

Confirmed speakers:  

Website: http://www-control.eng.cam.ac.uk/Main/Workshop7

EARLY BIRD REGISTRATION: before August 15 2016 (includes discounted accommodation at Pembroke College)  
REGISTRATION DEADLINE: September 1, 2016

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5.4. Workshop on Mathematical Aspects of Network Synthesis
Contributed by: Malcolm Smith, mcs@eng.cam.ac.uk

Two workshops will be held at the University of Cambridge, United Kingdom, on September 19-22, 2016. The workshops aim to connect researchers from the sciences, mathematics, and engineering who share an interest in control theory. Discounted accommodation is available at Pembroke College for registrations completed by 15 August.

4th WORKSHOP ON MATHEMATICAL ASPECTS OF NETWORK SYNTHESIS, 21-22 Sept 2016

Fourth in a series of workshops initiated by Uwe Helmke.

Confirmed speakers:

Website: http://www-control.eng.cam.ac.uk/Main/Workshop8

EARLY BIRD REGISTRATION: before August 15 2016 (includes discounted accommodation at Pembroke College)

REGISTRATION DEADLINE: September 1, 2016

5.5. CFP: “Control and Coordination for Synchronmodal Transport Systems” Track at IFAC World Congress 2017
Contributed by: Rudy Negenborn, r.r.negenborn@tudelft.nl

Contributions invited for “Control and Coordination for Synchronmodal Transport Systems” Track at IFAC World Congress 2017

We kindly invite you to consider submitting a contribution to the Track on:
“Control and Coordination for Synchronmodal Transport Systems”,
organized as part of the IFAC World Congress 2017, Toulouse, France, July 2017,
https://www.ifac2017.org/

This track will be devoted to:
- (distributed) control for seaport hubs, container terminal, and intermodal terminals;
- (distributed) control for road vehicles and road networks;
- (distributed) control for vessels, locks, and water networks;
- (distributed) control for rail systems, trains and rail networks;
- coordination methods for synchronmodal freight transport systems.

Deadline for submission of papers is October 31, 2016.

Please find attached the details regarding further important dates and track code.

See also the IFAC World Congress’s website: https://www.ifac2017.org/OIT#tSpdhq

Track Organizers:
Rudy Negenborn (Delft University of Technology)
Simona Sacone (University of Genova)
Silvia Siri (University of Genova)
6. Positions

6.1. MS: Global Innovation Exchange Institute, USA

Contributed by: (Samuel) Qing-Shan Jia, jiaqs@tsinghua.edu.cn

GIX 2017 Dual Master Degree Program in Connected Devices

Call for Application

Tsinghua University and the University of Washington entered into a partnership to create the Global Innovation Exchange Institute (GIX) in 2015. GIX locates on Seattle's east side in Bellevue, and will be housed in a state-of-the-art facility. Bring together top learners, teachers and technology talent from across the world, GIX will power innovation through an ambitious new model of project-based collaborative education that is unbound by geography or discipline.

GIX is the first physical presence in the U.S. for a Chinese research university. On 23rd September 2015, during his visit to Seattle, President XI Jinping presented a dawn redwood, a tree native to China, with his blessings to GIX for its future success.

Program Introduction

Exponential growth in connected devices is expected over the next decade, resulting in tremendous social and economic value, as the Internet of Things, Ubiquitous Computing, Wearable Computing, and Smart Devices become dramatically more cost effective, simpler to develop, and increasingly mainstream. Connected devices are poised to advance such diverse fields as health and natural resource management. To invent new applications and develop the expanding connected device market requires leaders with an array of technology, prototyping, design and entrepreneurial skills. We address global challenges by interdisciplinary project oriented education. We train the students how to integrate resources and leverage the innovation ecosystem to change the world. Connected devices is the first dual master degree program offered by GIX. Starting from the fall 2017, prospective students with innovation consciousness, vision and sense of responsibility and mission will start their study in Bellevue.

Admissions Criteria

Applicants must meet all admission requirements of both Tsinghua and UW in order to be admitted to the Dual Master Degree Program.
A. Bachelor degree from a recognized university, new graduates need to complete all academic requirements and obtained a degree prior to enrollment.;
B. Coursework in a technical field related to computing (computer science, electrical engineering, computer engineering, applied math) OR a quantitative field.
C. For applicants whose native language is not English, an official English language test score of TOEFL is required, as the whole program is English based.

Application Checklist

1. Resume or curriculum vitae in English;
2. Personal Statement (up to 800 words), describe why you want to apply for our dual degree program, your professional interests and value (including study, internship and research etc.) and future career plan;
3. Copies of official transcripts or academic records for every post-secondary university or college attended. If your institution provides a cumulative grade point average and/or a class rank for your degree, you MUST include it in this section;
4. A short video of no more than two minutes, in which the applicant demonstrates her or his creativity in a form that might otherwise be difficult to articulate on paper;
5. Two letters of recommendation;
6. TOEFL score (for students whose native language is not English. At least 100 on the TOEFL iBT, along with a Speaking score of at least 26. Scores should be within two years at the application deadline);
7. Additional materials that demonstrate qualifications and experiences (e.g. published papers, patents, or portfolios).

Those who are conditionally admitted by Tsinghua University shall submit all the original or the notarial degree certificate and transcripts. The documents provided should be in Chinese or in English; otherwise notarial translations in Chinese or English are required. All the original or the notarial degree certificates and academic transcripts must be officially sealed and will be permanently kept in students’ archives by the university. None of the above application documents will be returned. Students are not officially admitted if application documents are not qualified.

Application Deadline

Additional materials may be needed. Please visit our website http://gix.tsinghua.edu.cn for more details.

Key Facts
- 2-year program to earn 2 master degrees (Master of Engineering in Data Science and Information Technology from Tsinghua University and Master of Science in Technology Innovation from the University of Washington).
- Financial aid will cover at least 50% of tuition for all admitted applicants. In addition, scholarship and loans are also available. Internship also alleviates the financial situation.
- The first 15 months in Bellevue and the rest may be in Beijing (Tsinghua University).

Tuition: $77,000 USD

For More Information, email: gix@tsinghua.edu.cn

Contact
Ms. YUAN Xi
B425-1, Lee Shau Kee Science and Technology Building
Tsinghua University
Beijing 100084, China
Tel: +86-10-62796157

6.2. PhD: University of L’Aquila, Italy
Contributed by: Alessandro D’Innocenzo, alessandro.dinnocenzo@univaq.it

Open PhD position at the University of L’Aquila, Department of Information Engineering, Computer Science and Mathematics:

ROBUST MODEL-CHECKING OF CONTROL TASKS OVER WIRELESS NETWORKING PROTOCOLS

The University of L’Aquila, Department of Information Engineering, Computer Science and Mathematics is searching for a young, motivated and skilled PhD researcher with a background in systems and control theory and computer science.
The RESEARCH PROJECT is funded by the H2020-ECSEL-2015-1-RIA SafeCOP (Safe Cooperating Cyber-
Physical Systems using Wireless Communication). SafeCOP addresses safety-related cooperating cyber-
physical systems, characterised by use of wireless communication, multiple stakeholders, dynamic system
definitions, and unpredictable operating environments. SafeCOP refers to such systems-of-systems as Co-
operative Open Cyber-Physical Systems (CO-CPS). It is assumed that no single stakeholder has the overall
responsibility over the CO-CPS, that the cooperation relies on the wireless communication to perform a
safety function, and that security and privacy issues are of concern. SafeCOP targets systems that are of
the following three types: (1) use inter-system communication to reach a common goal; (2) rely on commu-
nicated information from the other systems in order to ensure safe and/or efficient operation; (3) provide
services that may compromise safety if the communication fails. SafeCOP will address all the above target
systems in automotive, healthcare, maritime and weather use cases.

In this PhD project it is expected to contribute to the definition and the development of methods and tools
for probabilistic safety analysis of control tasks over wireless networking protocols. In fact, to fulfil tight
safety/security standards mandated by the regulation bodies there is the need for software tools formally
verifying that the implementation of a networked system satisfies requirements. Numerical inaccuracies and
non-idealities might compromise the result of such formal verification: to overcome this difficulty the notion
of robustness, typical of systems and control theory, and a formal mathematical modeling of the interaction
between control algorithms and wireless communication protocols will be exploited to guarantee the correct
result of the verification process.

The research will be carried out in the Center of Excellence DEWS, Department of Information Engineering,
Computer Science and Mathematics, University of L’Aquila.

CANDIDATE PROFILE: An ideal candidate holds a degree in engineering or computer science. He or
she has a solid background in systems and control theory and computer science, interest and experience
in mathematical programming (Matlab, Java, C/C++), and enthusiasm for scientific research. Proficiency
in English is a requirement. To apply please visit http://phdict.disim.univaq.it/. For further information,
contact Dr. Alessandro D’Innocenzo.

6.3. PhD: KU Leuven, Belgium

Contributed by: Wim Michiels, Wim.Michiels@cs.kuleuven.be

PhD: KU Leuven, Belgium (Marie Sklodowska-Curie action)

At the Faculty of Engineering Science of KU Leuven there is vacant PhD position in the area of control and
optimization of large-scale interconnected systems.

The aim of the PhD project is to develop novel, decentralized control schemes for complex delay coupled
systems. For large networks it is expensive, if not impossible, to control all systems individually, and
centralized solutions are infeasible. Most of the approaches for decentralized control do not carry over to
systems with time-delay. Furthermore, the underlying theoretical framework is not adapted toward complex
systems where the overall dynamics are largely determined by the interactions. Hence, a shift of the control
paradigm is needed. Instead of tuning controller parameter, we focus on optimizing the topology of the
network, that is, we determine which systems need to interact in order to optimize a global objective in an
efficient way. While the focus is on methodological developments, applications are foreseen in robotics and
sensor networks.

The PhD researcher will spend the first two years at KU Leuven, Belgium, and the final year at Ecole
Centrale de Lille, France, and he/she will be awarded a joint doctoral diploma upon a successful completion.
What do we offer: an interdisciplinary research project, a stimulating environment at two European top universities, a balanced and personally tailored PhD trajectory, with attention paid to transferable skills development and exposure to both academic and non-academic environments, and a highly competitive salary (Marie Skłodowska-Curie program). The position is in the framework of the project UCoCoS, funded by the European Commission.

Eligibility criteria, mobility requirements, and application instructions can be found at the website http://ucocos-project.eu, position ESR5. Deadline: September 1.

6.4. PhD: KU Leuven, Belgium

Contributed by: Steffen Waldherr, steffen.waldherr@kuleuven.be

In the Bio- & Chemical Systems Technology, Reactor Engineering and Safety Section at KU Leuven, Belgium, a position for a PhD Student working on Estimation and Control of Cell Populations is available. We are looking for a motivated student with a background in chemical or biosystems engineering and an interest in the modelling and computational analysis of heterogeneity in cell populations to join the Bio- & Chemical Systems Technology, Reactor Engineering and Safety Section at the Department of Chemical Engineering. The student will work as a PhD student in the group Computational Methodologies for (Bio-)chemical Processes under the supervision of Prof. dr. Steffen Waldherr. In general, the research of the section is aimed at the exploitation, optimization and control of chemical and biochemical processes in selected, industrially relevant target areas.

Recent experimental advances to observe single cell dynamics have increasingly highlighted the role of heterogeneity among cells in biosystems and biomedical engineering. Such heterogeneity is commonly described by a cell number density function over the state space of individual cells, giving rise to so called population balance equations. The focus of this project is on estimation and control methods in the context of heterogeneous population models, in particular such models that can be described by population balance equations. State estimation based on lower dimensional population snapshots will be implemented via particle filters, and control methods based on numerical optimization or moment methods.


6.5. PhD: Eindhoven University of Technology, Netherlands

Contributed by: Erik Steur, e.steur@tue.nl

Two open PhD positions hosted in Eindhoven University of Technology in the framework of UCoCoS project. Major challenges in science, society and industry are induced by the complexity of our hyper-connected world. Examples are the climate change, artificial interconnected systems whose dynamics are beyond our understanding such as the internet, the global banking system and the power grid. A demand of performance emerges at an unprecedented scale: collaborative sensors and robots to ensure competitiveness of the production industry, better management of traffic flows, designing (de)synchronization mechanisms applicable in neuroscience, are examples illustrating the necessity to understand and control the dynamics of complex networks.

The objectives of the UCoCoS project are to create a control-oriented framework for complex systems, and to define a common language, common methods, tools and software for the complexity scientist. UCoCoS
aims at i) creating a closely connected new generation of leading scientists, capable of designing network structures and policies to affect the networks, and ii) initiating long-term partnerships and collaboration mechanisms leading to sustainable doctoral training. The UCoCoS approach builds on recent developments in three domains: control engineering, computer science, mechanical engineering. In the framework of UCoCoS there are six open PhD positions, two of them will be hosted in TU Eindhoven, The Netherlands. Every PhD researcher performs a cutting-edge project, strongly relying on the complementary expertise of three academic partners (KU Leuven, Ecole Centrale de Lille, and Eindhoven University of Technology) and benefiting from training by non-academic partners from three different sectors.

Two PhD positions are open in the Department of Mechanical Engineering, TU Eindhoven:

1. Analytical and numerical bifurcation analysis of delay-coupled systems. Complex systems can show very diverse behavior, synchronized or partially synchronized motion being only few out of many possibilities. To explore the complex behavior that can occur, bifurcation theory is essential, as this allows to characterize the behavior that appears due to parameter variations. As such, it brings inside in very complex behavior that is feasible near well-understood dynamical regimes, such as the synchronized state. A second motivation to investigate bifurcations in networked systems is to assess the robustness of the model to parameter variations and identifies structurally stable regimes. While a well-developed theory for bifurcations of nonlinear dynamical systems with delays exists, these results are restricted to low-dimensional systems, and cannot exploit the network structure.

2. Reduced modelling of large-scale networks. Reduced models of large-scale networks are essential for the control of large-scale networks. Challenges lie both in the representation of the communication structure, and in the identification of the subsystems in the network. This project focusses on modelling techniques for the control of large-scale networks, and, in particular, on the identification of the subsystems of the network. This step is decisive for the level of abstraction of the model. For example, neural mass models have proven effective to simulate specific aspects of electrical brain activity such as alpha-rhythms and epileptic patterns by identifying different populations of neurons, modelling the dynamics within the population with a few state variables. More detailed models describe each individual neuron in the human brain as a subsystem. A trade-off between the conflicting requirements of a low number of agents, and a low complexity of the individual agents is required, while ensuring that the essential elements of the dynamics are captured in the model.

Candidate profile: An ideal candidate has a MSc degree in engineering or applied mathematics, a strong background in control, optimization, an experience in software development (Matlab, C/C++) will be a bonus. Proficiency in English is a requirement.

The application procedure will be closed once an appropriate candidate is appointed.

The UCoCoS project and training network is funded by the European Commission under the H2020 program, as a Marie Sklodowska-Curie Actions ITN-EJD (Innovative Training Network- European Joint Doctorates).

More information on the project, and application instructions can be found at http://www.ucocos-project.eu

6.6. PhD: University of Texas at San Antonio, USA

Contributed by: Yongcan Cao, yongcan.cao@utsa.edu

Fully funded PhD positions are available starting Spring 2017 in distributed control and optimization, human-robot interaction, machine learning, and motion planning. Research will be conducted in the Department of Electrical and Computer Engineering, University of Texas at San Antonio (UTSA) under the supervision of Dr. Yongcan Cao.
Position description:
Required
- A Bachelor’s degree in electrical engineering, computer science, mechanical engineering, aerospace engineering, or a related field;
- Strong background in systems and control theory, signal processing, and statistics;
- Excellent writing and communication skills;
- Proficiency in Matlab and C++.
Preferred
- Master’s degree
- Experience on Robot Operating System, machine learning, and computer vision
- Hands-on experience on UAVs or ground robots
- Demonstrated research experience (i.e., a good publication record)

How to apply:
Send the following documents in a single PDF file
- One page cover letter describing your interest, goal, and how your background fits well;
- CV or resume
- Transcripts
to yongcan.cao@utsa.edu.

About UTSA and San Antonio
Established in 1969, UTSA is the largest university in the San Antonio area with over 28,000 students enrolled. It was selected by Times Higher Education as one of the best universities in the world under 50 years old. UTSA has evolved to be one of the largest institutions within the University of Texas system.
San Antonio, officially the City of San Antonio, is the seventh most populated city in the United States of America and the second most populated city in the state of Texas. It is notable for Spanish colonial missions, the Alamo, the River Walk, the Tower of the Americas, the Alamo Bowl, and Marriage Island. Commercial entertainment includes SeaWorld and Six Flags Fiesta Texas theme parks, and according to the San Antonio Convention and Visitors Bureau, the city is visited by about 26 million tourists a year. The city is home to the five-time NBA champion San Antonio Spurs.

6.7. PhD: LSIS, France
Contributed by: Francesco Rossi, francesco.rossi@lsis.org

PhD position in Control - Applied Mathematics
LSIS, Marseille, France

Research project
Crowd Control: from control theory to applications to road traffic

In recent years, the study of collective behavior of a crowd of autonomous agents has drawn a great interest from scientific communities, e.g. in civil engineering (for emergency egress and traffic problems), robotics (coordination of robots), computer science and sociology (social networks), and biology (crowds of animals).

Beside the problem of analyzing the collective behavior of such systems, it is now interesting to understand what changes of behavior can be induced by an external agent (e.g. a policy maker) to the crowd. For example, one can try to enforce the creation of relevant patterns (such as forcing agreement, or alignment), or to break the formation of such patterns. This is the problem of control of crowds.
Problems of control of crowds addressed in the project can be stated in different mathematical frameworks, depending on the model used to describe the crowd dynamics. We address it in three different mathematical frameworks: microscopic models (sizable finite-dimensional dynamical systems), macroscopic models (transport partial differential equations), and multi-scale models (measure evolutions).

The control problems will be effectively studied by building bridges between the three mathematical frameworks by studying in which cases control strategies can be translated from one setting to another.

The key application of control of traffic models will be addressed too. The goal is both to solve challenging specific problems of traffic control, and to use such application as a benchmark for the theory developed in the project.

The researches developed in this project will be carried out by a team based in Marseille. The strength of our team is its interdisciplinarity, that permits to merge different techniques (geometric control, control of partial differential equations, systems theory) to give a significant contribution in solving challenging problems of crowd control.

PhD job description

The PhD candidate should have a Master degree in Applied Mathematics, or Control, or related topics with a strong mathematical background. He/she should have a good knowledge of mathematical control (Lyapunov methods, geometric control) and/or partial differential equations. A genuine interest in mathematical modeling is required. Some numerical skills (modeling with MATLAB) would be a plus.

During the three years of the Ph.D. program, he/she will develop control methods for models of crowds. The research project is mostly of theoretical nature, but models coming from applications (such road traffic) will be studied too.

The candidate can contact Francesco Rossi francesco.rossi@univ-amu.fr for more details about the position. For applying, please send an application to Francesco Rossi, with a CV and a motivation letter. Two letters of recommendation (one possibly from the Master’s advisor) are also needed.
Stevens Institute of Technology is located in Hoboken, NJ, on a bluff overlooking the Hudson River and New York City. Interested candidates please send your inquiries together with your detailed CV to yguo1@stevens.edu

6.10. PhD: University of South Florida, USA
Contributed by: Tansel Yucelen, yucelen@disco.team

Interdisciplinary Research Laboratory for Decision, Information, Systems, and COntrol (DISCO, http://www.disco.team/) at the University of South Florida is looking for exceptional doctoral students with creative skills and a solid background in systems and control. These students are expected to perform high quality scholarly work on our research focus areas including adaptive and robust control of safety-critical systems; distributed estimation and control of networked multiagent systems; resilient and secure robotics, autonomous vehicles, and cyber-physical systems; and biologically-inspired complex, large-scale, and modular systems. Our intention is to give a strong guidance to maximize the chances of our students for building a rewarding career.

If you are interested in joining the DISCO to do transformative DISCOveries, please send an email to Dr. Tansel Yucelen (yucelen@disco.team), the Director of the DISCO, and include 1) your curriculum vitae; 2) a concise paragraph explaining your theoretical and experimental experience related to systems and control; 3) a list of your undergraduate and especially graduate courses taken (with your grades) related to systems and control as well as mathematics; and 4) one of your (published) papers. Please also include contact information (name, affiliation, and email) of your current advisor and at least one other reference.

Dr. Tansel Yucelen
Assistant Professor of Mechanical Engineering
Director of the Interdisciplinary Research Laboratory for Decision, Information, Systems, and COntrol (DISCO, http://www.disco.team)
Director of the Control Systems Forum (CSF, http://consys.forum.mst.edu/)
University of South Florida

6.11. PhD: CNRS in Grenoble, France
Contributed by: Paolo Frasca, paolo.frasca@gmail.com

A phd position is available at the GIPSA-lab, CNRS in Grenoble, France, on the topic “On-line Partitioning Algorithms for Evolutionary Scale-free Networks”. The proposed research will be part of the Scale-FreeBack ERC grant and will be performed under the joint supervision of Carlos Canudas-de-Wit and of Paolo Frasca. Scale-FreeBack is an ERC Advanced Grant 2015 awarded to Carlos Canudas-de-Wit, Director of Research at the National Center for Scientific Research, (CNRS), during Sept. 2016-2021. The ERC is hosted by the CNRS. The project will be conducted within the NeCS group (which is a joint CNRS (GIPSA-lab)-INRIA team). Scale-FreeBack is a project with ambitious and innovative theoretical goals, which were adopted in view of the new opportunities presented by the latest large-scale sensing technologies.

Detailed information on the position is available at http://www.gipsa-lab.grenoble-inp.fr/~carlos.canudas-de-wit/ERC_positions/PhD2-ERC-Scale-FreeBack_Partitions.pdf
6.12. PostDoc: GE Global Research, USA  
Contributed by: David Stamper, stamper@ge.com

GE Global Research has a post-doctoral position opening at Niskayuna, NY for research projects related to electrical power grid. We are looking for strong candidates with high level of expertise in optimization and control, especially in distributed and stochastic optimization and model predictive (receding horizon) control, and with good programming skills (Matlab, C++).

Prior knowledge of power grid optimization, demand response, distributed energy resources and buildings to grid integration would also be an asset.

Candidates should hold a PhD in engineering, computer science or applied mathematics and have a background in controls and optimization. Interested applicants should apply at GECareers.com on position 2445017. Applications will be evaluated as soon as they are received, until the position is filled. The starting date is flexible, but can be as early as the Summer of 2016.

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6.13. PostDoc: ETH Zurich, Switzerland  
Contributed by: Melanie Zeilinger, mzeilinger@ethz.ch

Postdoctoral Position at ETH Zurich  
Distributed Plug & Play Control for Complex and Modular Systems

We offer a postdoctoral position in the area of distributed control of complex systems at the Institute for Dynamic Systems and Control at the Mechanical and Process Engineering Department of ETH Zurich.

Description:
Distributed control techniques offer significant potential for the control of complex and variable systems by considering the control of only a sub-part of the system, while potentially achieving global optimality through communication with controllers of other sub-systems, and most importantly by offering a modular control approach to enable efficient exchange, addition or removal of sub-systems without the need for re-designing the overall controller.

This project will address the development of such “plug and play” controllers that can provide flexible and modular operation in a safe manner, i.e. take into account system constraints and/or guarantee stability.

Aside from the method development the focus will be on the application to modular robotic systems for on site fabrication. The postdoctoral researcher can expect a full-time position with a competitive salary in a highly motivated and small research team offering an excellent research infrastructure and environment. The position will be part of the National Centre of Competence in Research (NCCR) Digital Fabrication, http://dfab.ch.

Qualifications:
- PhD degree (or close to completion);
- Strong background in systems and control; prior knowledge in optimization is a plus (outstanding candidates with different background are encouraged to apply);
- Proficient oral and written English skills.

Application:
Candidates should include the following documents in their application: CV; short statement of motivation and research interests (1-2 pages); transcripts of all obtained degrees (in English), names and contact information of three references; two publications.
Contributed by: Lucy Pao, pao@colorado.edu

Post-doctoral Position Opening in Control of Wind Turbines
We are seeking an outstanding post-doctoral researcher for the development, validation, implementation, and experimental field testing of controllers for a novel wind turbine rotor design. This post-doctoral position is available starting approximately April 2017 for a duration of up to 24 months. Candidates should have a strong background in aerospace, mechanical, and/or electrical engineering with a specialization in control systems, and have strong hands-on experimental skills. Familiarity with issues related to the control of wind turbines and NREL-developed software tools for evaluating wind turbine control algorithms will be beneficial, as will leadership and mentoring skills. The candidate will work as part of a collaborative, creative, interdisciplinary team and should have excellent written and oral communication skills. The position will be jointly appointed at both Colorado School of Mines (Golden, CO) and University of Colorado Boulder (Boulder, CO), and the applicant must meet requirements to gain site access at the US National Renewable Energy Laboratory where the field testing will be performed. To apply for the position, please send the following all in one PDF file to both email addresses below: (1) a cover letter summarizing your interest, (2) CV, and (3) contact information for at least three references.

Professor Kathryn E. Johnson
Electrical Engineering & Computer Science Department
Colorado School of Mines
1610 Illinois St.
Golden, CO 80401 USA
Email: kjohnson@mines.edu
http://inside.mines.edu/ kjohnson/

Professor Lucy Y. Pao
Electrical, Computer, & Energy Engineering Department
425 UCB
University of Colorado Boulder
Boulder, CO 80304 USA
Email: pao@colorado.edu
http://ece.colorado.edu/ pao

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

6.15. PostDoc: McGill University, Canada
Contributed by: Ahmad Haidar, ahmad.haidar@mcgill.ca

The Department of Biomedical Engineering at McGill University is seeking outstanding candidates for a Postdoc position. The successful candidate will develop a learning algorithm for an electromechanical artificial pancreas in type 1 diabetes. The artificial pancreas is a closed-loop system to regulate glucose levels. A model predictive control is already in place and has been extensively tested in human clinical trials, but
it requires further development to handle more efficiently slow changes in insulin needs over time. The successful candidate will develop and implement a learning algorithm based on recursive state estimation methods, conduct extensive simulations, and lead the design and the conduct of a clinical trial to test their algorithm.

The successful candidate will have the opportunity to work with a multi-disciplinary team that includes researchers with backgrounds of endocrinology, control engineering, biomedical engineering, pediatrics, and computer science. This is a great opportunity for a highly motivated applicant who wants to utilize their expertise in control systems to tackle medical problems.

Desired Skills:
- Strong expertise in system control design, preferably in adaptive control or model predictive control. Desired expertise includes estimation algorithms, observers, Kalman filtering, and Bayesian
- Strong desire to work in a clinical setting.
- Strong programming skills.

Apply with your curriculum vitae to Prof. Ahmad Haidar (ahmad.haidar@mcgill.ca). The candidate will be supervised by Prof. Ahmad Haidar and Prof. Robert Kearney.

Please refer to https://sites.google.com/site/ahmad7haidar/research for more information on our research program.

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6.16. PostDoc: University of Michigan, USA

Contributed by: Dimitra Panagou, dpanagou@umich.edu

PostDoc: Aerospace Engineering Department, University of Michigan, Ann Arbor, USA
Contributed by: Dimitra Panagou

Postdoctoral Opening: Decision-making and control for multi-agent systems with applications in multi-UAV systems (safety and security).

The Distributed Aerospace Systems and Control Lab (http://www-personal.umich.edu/~dpanagou/) at the Aerospace Engineering Department, University of Michigan (Ann Arbor, MI, USA) is inviting applications for one postdoctoral research associate position.

The successful candidate will work on planning, decision making and control for networked UAVs in constrained, uncertain, adversarial environments. Special emphasis will be given on (i) coordinated low-altitude flight of small UAS (multi-copters, fixed-wing) in constrained environments, (ii) threat detection and interception, and (iii) analyzing and mitigating vulnerabilities in UAS systems.

The duration of the position is one year and may be renewable for another year depending on satisfactory progress and availability of funds.

Candidates should have a strong background in the general areas of systems and control theory, game theory, motion and path planning, optimization, and dynamical systems modeling/analysis.

Interested applicants should send a CV, a brief description of interests and goals, and a list of three references in a single PDF file to Professor Dimitra Panagou (dpanagou@umich.edu). Applications will be evaluated as soon as they are received, until the position is filled. The position is immediately available.
6.17. PostDoc: University of Cambridge, UK  
Contributed by: Ioannis Lestas, icl20@cam.ac.uk

Postdoctoral Researcher: Department of Engineering, University of Cambridge

One or more positions exist for a Research Assistant/Associate to work in the area of analysis and control of large scale networks, with applications in power systems and smart grids. The positions will be funded by a five year ERC grant. The appointment is until 31/8/2017 with the possibility for renewal for an additional three years.

Applicants with a theoretical background in control, or research experience in power systems are encouraged to apply. Applicants must have, or be close to obtaining, a PhD in Engineering, Mathematics, Physics or a related subject.

Informal inquiries may be addressed to Dr Ioannis Lestas (email: icl20@cam.ac.uk). Further information can be found at http://www.jobs.cam.ac.uk/job/11006/

6.18. Research Associate: University of Sheffield, UK  
Contributed by: Andreagiovanni Reina, a.reina@sheffield.ac.uk

Open position as a Research Associate in Collective Robotics for 1 year within the ERC project “DiODe: Distributed Algorithms for Optimal Decision-Making” led by Prof. James Marshall at the University of Sheffield, UK.

The post holder will have the opportunity to work with a 1,000 robot swarm in an internationally-leading research environment (the Department of Computer Science was ranked 5th in the UK as part of the 2014 Research Excellence Framework evaluations).

We are looking for outstanding candidates that have (or are about to receive) a PhD in Computer Science or Electronic Engineering, experience of designing and developing electronic circuit boards, and experience of device firmware programming.

More information can be found at: https://t.co/6H92Stt79c
Application deadline: August 11th, 2016
Please forward this position advert to any person could be interested and fulfils the requirements.

6.19. Faculty: Chalmers University of Technology, Sweden  
Contributed by: Bo Egardt, bo.egardt@chalmers.se

Chalmers University of Technology is looking for highly motivated assistant professors for our areas of advance as well as basic sciences
- Who are interested in building a research group and attracting external funding.
- With interest and experience in teaching and supervising undergraduate and graduate students.
- Who are open-minded and interested in collaborating within and outside of Chalmers

The offer includes:
- A four-year tenure-track position at Chalmers.
- Funding for one PhD student and some operational costs.
- A leadership training programme, including career planning, together with courses in graduate student supervision and teaching.
- A language course for non-Swedish speakers.
- A relocation package (including moving costs and help with practical issues for people moving to Sweden).
- A permanent faculty position at Chalmers after successfully passing tenure assessment.

Application deadline: 1 September 2016

For more information go to our campaign-site: www.chalmers.se/advance

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6.20. Faculty: Zhejiang University of Technology, China
Contributed by: Qiu Xiang, qiuxiang@zjut.edu.cn

Faculty Position: Zhejiang University of Technology, Hangzhou, China
Contributed by: Xiang Qiu, qiuxiang@zjut.edu.cn

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

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

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

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

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

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

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

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

**B. Salary and welfare**

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

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

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

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

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

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

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

**C. Required documents**

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

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

**D. Contact us**

Dr. Qiu,

Email: qiuxiang@zjut.edu.cn
6.21. Faculty: University of Groningen

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

University of Groningen
Engineering and Technology Institute Groningen
Tenure Track position in Optimization and Control

*Organisation*

Since its foundation in 1614, the University of Groningen has enjoyed an international reputation as a dynamic and innovative centre of higher education offering high-quality teaching and research. Balanced study and career paths in a wide variety of disciplines encourage currently more than 30,000 students and researchers to develop their own individual talents. Belonging to the best research universities in Europe and the top 100 universities in the world (see our ranking: http://www.rug.nl/about-us/where-do-we-stand/rankings), the University of Groningen is truly an international place of knowledge.

*Job description*

The successful candidate is expected to develop research in areas at the intersection of optimization and dynamical control systems. These areas include but are not limited to differential games, distributed optimization, optimization and control of network systems, optimal control. Other areas might be considered as well in cases of applications by exceptional applicants. Examples of application areas where the candidate should be willing to work include smart cities, transportation systems, flow networks, energy systems, supply chain networks, optimal actuator/sensor placement. The candidate will be embedded in the SMS-Cyberphysical System group in which research in cyberphysical systems, dynamical networks, nonlinear systems, hybrid and switched control is conducted, with applications ranging from smart grids, to data centers, water and heat networks, as well as adaptive optics.

*Qualifications*

Candidates have:
- a Ph.D. degree in relevant areas such as electrical engineering, systems and control, mechanical engineering, computer engineering, operations research;
- two or more years of experience in a post-doctoral capacity or experience at another educational institution by the time the candidate is hired for the position;
- excellent research qualities, as evidenced by a publication record in international peer-reviewed journals and renowned conferences, and a relevant international network;
- research, teaching and organizational experience appropriate to career stage;
- a working knowledge of the English language;
- evidence of experience in proposal writing or successful acquisition of external funding appropriate to career stage;

Candidates are:
- team players with good communications skills;
- willing to fulfill the requirements for the University Teaching Qualification;
- willing to learn the Dutch language.
*Conditions of employment*

The appointment will be initially for a maximum of 6 years at the level of tenure track assistant professor with a gross monthly salary dependent on qualifications and work experience from 3,259 euro up to a maximum of 5,070 euro (CAO-NU salary scales 11 or 12) gross per month for a full-time position. After 5 years there will be an assessment of performance based on established criteria. If the outcome of the assessment is positive, the assistant professor will be promoted to associate professor with tenure. There will be another assessment at the end of a further 4-7-year period for the promotion to full professor.

In addition to the primary salary the University offers 8% holiday allowance and an end-of-year bonus of 8.3%.

The University of Groningen provides career services for partners of new faculty members moving to Groningen.

The University of Groningen has adopted an active policy to increase the number of female scientists across all disciplines of the university. Therefore, female candidates are especially encouraged to apply.

*Applications*

Interested candidates are invited to submit a complete application including:
- A letter of motivation;
- A Curriculum Vitae, including a list of publications;
- A list of five self selected ‘best papers’;
- A statement about teaching goals and experience and a description of scientific interest and plans;
- The names of three references complete with title and contact information.

You may apply for this position by sending an email to secsms@rug.nl with all the required documents attached. Deadline 31 August 2016.

*Information*

For information you can contact:
Prof. C. De Persis, c.de.persis@rug.nl
(please do not use for applications)

More information can be found on
http://www.rug.nl/research/sms
http://www.rug.nl/research/enteg

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

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


For the successful applicant, this represents a unique opportunity to play a central role in the development of a new interdisciplinary field. The position will be affiliated with the Department of Engineering Cybernetics (Institutt for teknisk kybernetikk - ITK, [http://www.ntnu.edu/itk](http://www.ntnu.edu/itk)) at NTNU’s Faculty of Information Technology, Mathematics and Electrical Engineering.

ITK has 17 full-time professors, 11 adjunct professors, about 10 postdocs and researchers as well as 70 PhD candidates. Approximately 100 MSc candidates graduate annually from the three study programs in cybernetics, which comprise about 650 students in total. The department is involved in numerous research

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

The main goal is to translate “big data” from a large number of sensor channels into “smart data” represented by a combination of theory-driven and data-driven models, by combining science’s prior knowledge with nature’s unexpected patterns to identify the relevant structures and develop interpretable and useful models.

The overlap between cybernetic subspace identification and chemometric partial-least-squares regression could for instance be a fruitful common ground for the desired high-dimensional, spatio-temporal modelling. The outputs from such models shall be intuitively understandable by humans, who then can use their background knowledge and creativity for further refinement and development. This means that black-box modelling, such as e.g. artificial neural networks or support vector machines, are not the focus of Big Data Cybernetics.

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

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


6.23. Visiting Professor: UTFPR, Brazil

Contributed by: Alessandro N Vargas, avargas@utfpr.edu.br

Position for Visiting Professor/Researcher in Systems and Control in Brazil

From Alessandro Vargas, UTFPR Brazil

I have a free position for a Visiting Professor in my group.

Main conditions:
1. The pre-requisite is that the candidate must have a Doctorate diploma, taken before july 2011.
2. The person should be willing to work in Control, Systems, and related topics in my group [visit www.labcontrol.xyz ]
3. The salary is around 2.100 Euros per month (tax free). The candidate will receive 13 payments for each year.
4. The contract is awarded for 6 months and can be renewed in the end of each semester, until it completes 4 years (maximum).
5. The candidate will start in november 01, 2016 (fixed deadline).
6. The contract is issued by the Brazilian government, i.e. the selected candidate will become a temporary employee of the Brazilian government. Because of this, the selected candidate must be in Brazil in the first week of October, 2016 to fulfill many forms and to overcome an extra load of bureaucratic documents. The bureaucratic process is time-consuming.

7. There is no funding to support the travel expenses from where the selected candidate lives to come to live in Parana, Brazil, neither money to support the expenses of the bureaucratic documents.

8. Candidates must have a strong research score in Control and Systems Engineering; Automation; Robotics; Mechatronics; Mathematics (pure or applied); and Technology. Candidates that do not have at least 5 papers published in good-quality journals are discouraged to apply.

9. The Visiting Professor/Researcher position is available to citizens of any country, and the successful applicants will be required to live in the Parana State (South of Brazil) during the fellowship period. Our research facilities are located at UTFPR Campus in Cornelio Procopio, Parana. Londrina is the biggest city close to Cornelio Procopio. Londrina was settled by immigrants from London, UK, and now is a medium-scaled city with a rich cultural life.

10. The Visiting Professor/Researcher may be required to supervise graduate students and to teach some classes for graduate and undergraduate students (teaching can consume up to 8 hours a week).

11. The position requires a good-level of written and oral communication skills in English. The University's staff will help the non-speaking Portuguese candidates to learn Portuguese efficiently in specific language training programs.

12. The Visiting Professor/Researcher will join Lab Control [visit www.labcontrol.xyz]. The candidate will be asked to develop a research project to advance the knowledge of Control systems. Namely, we are interested in new results of Control systems for applications of real-time processes. Candidates are strongly encouraged to apply if they are committed to pursuing theoretical or applied research in systems and control engineering whilst working collaboratively across disciplines to develop solutions to one or more of the next topics: Theory: linear and nonlinear control systems, stochastic systems, Markovian systems, optimal control, stability of systems, filtering and identification, networked control, nonlinear optimization, computational methods, signal processing, among others topics. Applications: industrial processes, electrical and electronic systems, automotive systems (electronic control of vehicles), mechatronic devices, renewable energy, wind turbines, photovoltaics, technology applied in Agriculture, among others. The appointed candidates are expect to build a bridge between theory and applications.

The selected candidate will work under the supervision of Prof. Alessandro N. Vargas (UTFPR, Brazil). The selected candidate will be included in a research project that is developed in cooperation between UTFPR, Brazil, UPC Barcelona Tech (Codalab Group), Spain, and TUIASI Romania. Most importantly, the candidate must agree to work in cooperation with a team of PhDs composed by mathematicians and engineers (Electrical, Electronics, Computer, Control, Automation).

Required documentation for application:
1. A cover letter in which the applicant justifies his or her interest in the proposed topics;
2. An updated academic CV.

Inscription of candidates:
Candidates should submit their documentation by email at ”avargas@utfpr.edu.br”.

Deadline:
The deadline for applications is September 01, 2016, but applications will be accepted until the position is filled.

Result:
The result of the first step of the selection process will be informed by email in September 02, 2016, or until the position is filled. The interview will be arranged with the candidates by email and Skype.

More details on:
http://www.labcontrol.xyz
http://www.cp.utfpr.edu.br/vargas/

6.24. Research Engineer: Evolution Energie, France
Contributed by: Lisanne Willenbrock, lisanne.willenbrock@evolutionenergie.com

We are looking for a research engineer to join our innovation Team in Paris and develop a project proposition for the Marie Sklodowska-Curie actions - Research Fellowship Programme (deadline September 2016). If the proposal is accepted the researcher would stay at least 1 or 2 years in our French offices. The candidate will receive an attractive salary and benefit from several Training opportunities from Evolution Energie and the European Commission, a mobility grant and reimbursement of living expenses.

The chosen engineer will have to use the principles of automation and optimization to develop technically sound solutions to environmental problems in the field of water treatment. He/She will participate in the development of our main software solution Flexinergy and explore new optimization processes for our environmental management systems. The candidate will be involved in efforts to grow compliance with environmental public policy, optimize the utilization of resources and improve water quality.

Some of the responsibilities could be the following:
- Develop control law synthesis for the process of waste water treatment;
- Provide system and component design that reduce negative impact on environment;
- Conduct research on specific waste water treatment processes such as advanced oxidation process; or activated carbon;
- Address problems and develop a software module to optimize the energy consumption and water quality of waste water plants;
- Monitor the environmental impact of projects and analyze data;
- Provide systems technical evaluation;
- Develop resources management schemes and integrate latest technologies into management systems;
- Serve as a technical advisor on environmental policies in the field of water treatment;
- Collaborate with scientists, planners and experts;
- Cooperate and communicate effectively with project manager and other project participants to provide assistance and technical support;
- Perform overall quality control of the work (budget, schedule, plans, personnel’s performance) and report regularly on project status;
- Monitor progress and provide recommendations reports.

Requirements:
- Holding a PhD in the field of automation, control law and optimization process;
- First working experience as an engineer;
- Experience with analytical, mechanical and compliance software (e.g. Matlab, Simulink, C++);
- Ability to think innovation projects on small scale and for future applications;
- Familiarity with quality assurance, documentation, environmental rules, regulations and best practices;
- Project and personnel management skills;
- Advanced MS Office skills.

If you are interested in this position, please send CV and motivation letter to lisanne.willenbrock@evolutionenergie.com