

E-LETTER on Systems, Control, and Signal Processing
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Editor:

[Maria Prandini](#)

Dipartimento di Elettronica, Informazione e Bioingegneria

Politecnico di Milano

Piazza Leonardo da Vinci, 32

20133 Milano, Italy

Tel: +39 02 2399 3441

Fax: +39 02 2399 3412

Welcome to the August issue of the Eletter, available electronically [here](#).

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- 5.23 Faculty: Delft University of Technology, The Netherlands
- 5.24 Senior Control System Engineer: GE Global Research, Shanghai, China

1. IEEE CSS Headlines

1.1. IEEE Control Systems Society Publications Content Digest

Contributed by: Elizabeth Kovacs, ekovacs2@nd.edu

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

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

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1.2. IEEE Transactions on Automatic Control

Contributed by: Elizabeth Kovacs, ekovacs2@nd.edu

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1.3. IEEE Control Systems Society Outreach Fund

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

The IEEE CSS Outreach Task Force wishes to inform the CSS community that it will hold its fall proposal submission window from October 1 through 12, 2015. Please note that these dates are earlier than those used in recent years. General information regarding the program can be found in:

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

Inquiries regarding project suitability for the Outreach Fund, as well as requests for application materials, should be made directly to Daniel E. Rivera, Outreach Task Force Chair, at daniel.rivera@asu.edu.

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1.4. IEEE Multi-Conference on Systems and Control

Contributed by: Rebecca Deal, rebeccad@icmsaust.com.au

Early Bird Registration and full paper submission deadline - 15 August 2015

Don't miss the early bird deadline

We encourage you to register online now before the early bird deadline on 15 August 2015 and save your money before our onsite registration fees commence.

To register online for the Conference, please click copy and paste this address into your browser

https://secure.icmsaust.com.au/ei/getdemo.ei?id=719&s=_CGS0NXNG2 or visit the Conference website www.msc2015.org

Registration fees: All fees are quoted in Australian dollars (AU\$) and are inclusive of 10% GST.

Advance Rate - on or before 15 August 2015:

IEEE Member AU\$836

Non-member AU\$891

Reduced* AU\$418

Onsite - after 15 August 2015:

IEEE Member AU\$1056

Non-member AU\$1155

Reduced* AU\$528

* Reduced rate applies to Life Member, Life Senior Member, Life Fellow, Student, Retiree

Delegate registration includes:

Entry to all conference sessions and exhibition; Three (3) papers; Ticket to the Welcome Reception; Ticket to the Gala Dinner; Morning and afternoon teas; Conference satchel; Conference materials.

Reduced registration includes:

Entry to all conference sessions and exhibition; One (1) paper; Ticket to the Welcome Reception; Morning and afternoon teas; Conference satchel; Conference materials.

Submit your final paper: Final papers are due no later than 15 August 2015 and you must have registered and paid by 15 August to submit your paper.

Enquiries:

MSC2015 Secretariat

ICMS Australasia Pty Ltd

GPO Box 3270

Sydney, NSW 2001

Australia

2. Journals

2.1. Contents: IEEE/CAA Journal of Automatica Sinica

Contributed by: Yan Ou, yan.ou@ia.ac.cn

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Contributed by: Tobias Glück, cep@acin.tuwien.ac.at

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Contributed by: Elisa Capelloautomatica@polito.it

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2.4. Contents: Frontiers of Information Technology & Electronic Engineering

Contributed by: Miao Yizhou, miaoyizhou@zju.edu.cn

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

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2.6. Contents: International Journal of Control, Automation, and Systems

Contributed by: Young Hoon Joo, journal@ijcas.com

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Vol. 13, No. 4, August 2015

ISSN: 1598-6446

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2.7. Contents: Control Theory and Technology

Contributed by: Zou Tiefeng, tfzou@scut.edu.cn

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(The original title: Journal of Control Theory and Applications)

Vol. 13, No. 3, August 2015

ISSN: 2095-6983 CODEN: CTTOAM

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2.8. CFP: IEEE/CAA Journal of Automatica Sinica

Contributed by: Haibo He, he@ele.uri.edu

Call for Papers

IEEE/CAA Journal of Automatica Sinica

Special Issue on Control and Optimization in Renewable Energy Systems

Scopes: The operation of power systems has never faced challenges of current proportions. The challenges are primarily driven by the need to substitute centralized fossil based generations by sustainable but intermittent renewable sources such as wind and solar. Such intermittency of the renewable generation sources challenges control and optimization problems of power systems. A large number of researchers have investigated control and optimization problems of renewable energy, and some successful engineering applications have recently been reported.

The goal of this special issue is to invite original contributions reporting the latest advances in control and optimization problems in renewable energy systems. It aims to gather the latest research on state-of-the-art renewable energy system modeling and analysis methods, and recent new findings obtained by using novel control and optimization methodologies. The topics of interest include, but are not limited to:

- . Dynamic modeling techniques and their applications for renewable energy systems
- . Fundamental issues about renewable sources (e.g., wind power technology and systems, photovoltaics, solar thermal power generation, geothermal energy, fuel cells, wave power, biomass conversion, etc.)
- . Renewable energy power system planning, operation and protection
- . Service optimization for renewable energy supply
- . Smart grid technologies, clean energy integration, and microgrid and distributed generation
- . Load coordination and control in renewable energy power systems
- . Distributed control and optimization in renewable generation sources

Guest Editors:

Dianwei Qian North China Electric Power University, China, dianwei.qian@ncepu.edu.cn

Chengdong Li Shandong Jianzhu University, China, lichengdong@sdjzu.edu.cn

Qinmin Yang Zhejiang University, China, qmyang@zju.edu.cn

Xiangyang Zhao Beihang University, China, zhaoxiangyang@buaa.edu.cn

Yaobin Chen Indiana University-Purdue University Indianapolis, USA, ychen@iupui.edu

Haibo He University of Rhode Island, USA, he@ele.uri.edu

Important Dates

30 Oct 2015 - Deadline for manuscript submission

31 Dec 2015 - Notification of authors

31 Jan 2016 - Deadline for submission of revised manuscripts

31 Mar 2016 - Final decision of acceptance

10 July 2016- tentative publication date

Submission Instructions:

Please prepare manuscripts by using IEEE Trans Template. To submit your manuscript, please go to:

<https://mc03.manuscriptcentral.com/aas-en> Please also send a copy of your manuscript to dianwei.qian@ncepu.edu.cn.

The submission process is not complete until you have a receipt from Prof. Dianwei Qian.

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2.9. CFP: Asian Journal of Control

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

Call for Papers

Special Issue on “Recent Emerging Technologies in Atomic Force Microscopy”

<http://www.ajc.org.tw>

Nano-technology is an important research area in the 21st century. There are many relevant applications in various industries, such as for scientific measurement and for high tech. business areas. Atomic Force Microscopy (AFM) opens a new window to the nano-world. It features a high resolution for imaging and manipulating samples on a nanoscale in vacuum, gases, or liquid operational environments, and has now become a widely used tool in the sectors of, for example, biological sciences, industrial inspection, and medical testing, etc. As a result, AFM is becoming more and more important as one of the key approaches in next generation nano-technology.

This special issue invites original articles that address both theoretical and application-oriented papers, including innovative mechanism design, control echnological improvements, new scanning methods, and any related technologies in AFM. Topics of potential interest include, but are not limited to:

- . AFM mechanism design
- . AFM control methods
- . New scanning methods in AFM
- . AFM actuators or sensors
- . Modeling and simulation of AFM systems
- . Applications of AFM systems

About AJC

The Asian Journal of Control, an ACA (Asian Control Association) affiliated journal, is the first international journal originating from the Asian Pacific region and being recognized by the major body of control researchers in this region. The Asian Journal of Control publishes bimonthly high-quality papers on original theoretical and experimental research and development in the areas of control, involving all facets of control theory and its application. Functionally, this journal not only provides a forum where control researchers and practitioners can exchange their knowledge and experiences in control areas, but also serves as an educational means for students and any others who would like to learn new topics in this technical area. The journal aims to be a key interface between control communities within the Asian Pacific region and throughout the world and is listed by Science Citation Index Expanded.

Guest Editors:

Prof. Ian Petersen

School of Engineering and Information Technology

UNSW Canberra, Australian Defence Force Academy, Australia

Email: i.r.petersen@gmail.com

Prof. Reza Moheimani School of Electrical Engineering and Computer Science, The University of Newcastle, Australia Email: Reza.Moheimani@newcastle.edu.au

Important Dates:

September 30, 2015 Deadline for submissions

January 31, 2016 Completion of First Review

May 31, 2016 Completion of Final Review

June 30, 2016 Receipt of Final Manuscript
January 1, 2017 Publication (Tentatively Vol.19, No. 1)

How to submit:

Potential authors are encouraged to upload the electronic file of their manuscript (in PDF format) through the journal's online submission website: <http://mc.manuscriptcentral.com/asjc>.

If you encounter any submission problem, feel free to contact Prof. Li-Chen Fu.

Editor-in-Chief: Professor Li-Chen Fu

Department of Electrical Engineering, EE II-524 Tel: +886-2-3366-3558

National Taiwan University Fax: +886-2-2365-4267

Taipei 10617, Taiwan E-mail: lichen@ntu.edu.tw

All submission should include a title page containing the title of the paper, an abstract and a list of keywords, authors' full names and affiliations, complete postal and electronic address, phone and fax numbers. The contacting author should be clearly identified. For detailed submission guidelines, please visit <http://wileyonlinelibrary.com/journal/asjc>.

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2.10. CFP: Journal of Discrete Event Systems: Theory and Applications

Contributed by: Necmiye Ozay, necmiye@umich.edu

Call for papers:

Journal of Discrete Event Systems: Theory and Applications (J-DEDS)

Special Issue on "Formal Methods in Control"

In recent years we have witnessed an increase in the use of techniques originating in the area of formal methods to solve control problems. Similarly, the idea of synthesizing a controller that enforces the desired specifications is becoming an alternative to the verification paradigm prevalent in the formal methods area. There is now a growing body of literature at the intersection of these two disciplines, formal methods and control theory, and the purpose of this special issue is to present the latest developments in this area.

This special issue solicits submissions of high-quality papers reporting original works in both theoretical and system research at the intersection of formal methods and control. Topics of interests include:

- * Abstraction-based control
- * Verification and synthesis for continuous systems
- * Verification and synthesis for timed-automata
- * Reactive synthesis
- * Connections between supervisory control of discrete event systems and reactive synthesis
- * Temporal logic techniques for continuous and timed systems
- * Compositional approaches to synthesis and contract-based design
- * Assume-guarantee synthesis, contract-based design
- * Synthesis with partial and imperfect information
- * Learning, adaptation in correct-by-construction design
- * Algorithms and tools for verification and synthesis of continuous and timed systems
- * Complexity and impossibility results for verification and synthesis of continuous and timed systems
- * Applications in automotive, avionics, energy, mobile robotics, medical devices, manufacturing, systems biology, transportation, security, privacy and other areas

Time Schedule:

- * December 1, 2015: Open submission site
- * February 1, 2016: Deadline for submissions
- * August 2016: Deadline for review process
- * November 2016: Submission of final manuscripts
- * Early 2017: Publication of special issue

Submission Details:

Manuscripts should be submitted by uploading the electronic file through the journal's online submission website at <http://DISC.edmgr.com>

Choose "SI: Formal Methods in Control" as the article type.

Guest Editors:

Necmiye Ozay, Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI 48109, USA, necmiye@umich.edu Paulo Tabuada, Department of Electrical Engineering, University of California, Los Angeles, CA 90095, USA, tabuada@ee.ucla.edu

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3. Conferences and Workshops

3.1. World Congress: Mathematical Problems in Engineering, Aerospace and Sciences

Contributed by: Seenith Sivasundaram, seenithi@gmail.com

World Congress: Mathematical Problems in Engineering, Aerospace and Sciences

When: 05-08 July 2016

Where: La Rochelle, France, University of La Rochelle

Website: <http://www.icnpaa.com>

<http://www.internationalmathematics.com/icnpaa/>

ICNPAA's Aim

Mathematical Problems in Engineering, Aerospace and Science have stimulated cooperation among scientists from a variety of disciplines. Developments in computer technology have additionally allowed for solutions of mathematical problems. This international forum will extend scholarly cooperation and collaboration, encouraging the dissemination of ideas and information.

The conference will have a pool of active researchers, with a proper balance between academia and industry, as well as between senior and junior researchers, including graduate students and post-doctoral fellows. It is anticipated that such a balance will provide both senior and junior researchers an opportunity to interact and to have a wider picture of recent advances in their respective fields. The conference, especially, enables the setting up of new interdisciplinary research directions among its participants by establishing links with world renowned researchers, making possible joint international projects that will no doubt bring about fresh and innovative ideas and technologies in engineering, aerospace and sciences

The proceedings will be published by the American Institute of Physics (AIP).

Co-Sponsored by: AIAA: American Institute of Aeronautics and Astronautics

IFIP: International Federation of Information Processing

La Rochelle, France, University of La Rochelle

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3.2. IEEE International Conference on Robotics and Automation

Contributed by: Andrea Censi, censi@mit.edu

ICRA 2016 Call for Papers

The IEEE International Conference on Robotics and Automation (ICRA) is the leading international forum for robotics and automation. ICRA 2016 will be held on May 16-21, 2016 in Stockholm, Sweden.

ICRA is a welcoming multidisciplinary conference. Watch the ICRA 2015 “trailer” to see the diversity of contributions typically presented at ICRA:

https://www.youtube.com/watch?v=OM_1F33fcWk

ICRA welcomes rigorous contributions in the modeling & control of robotic systems.

The paper submission deadline is September 15, 2015.

Conference website: <http://www.icra2016.org/>

Complete call for papers: <http://www.icra2016.org/contribute/call-for-papers/>

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3.3. IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems

Contributed by: Sigurd Skogestad, skoge@ntnu.no

Call for papers: DYCOPS-CAB 2016

We welcome contributions to the 11th “IFAC symposium on Dynamics and Control of Process Systems, including Biosystems” in Trondheim, Norway 06-08 June 2016.

This is major worldwide process control event in 2016.

15 Oct. 2015: Deadline for submission of draft paper (6 pages), invited sessions and workshop proposals

More information:

<http://dycops2016.org/files/images/callforpapers.pdf>

<http://dycops2016.org/>

Best regards,

Sigurd Skogestad (NOC Chair) Hector Budman (IPC Chair)

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3.4. Allerton Conference on Communication, Control, and Computing

Contributed by: Brenda Roy, broy@illinois.edu

The Fifty-Third Annual Allerton Conference on Communication, Control, and Computing will kick off with two Opening Tutorials being held on Tuesday, September 29, 2015 at the Coordinated Science Laboratory. The Conference sessions will start on Wednesday, September 30, 2015 through Friday, October 2, 2015, at the Allerton Park and Conference Center. The Allerton House is located twenty-six 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 fifteen-hundred acre Robert Allerton Park, a complex of natural and man-made beauty designated as a National natural landmark.

Allerton Park has twenty miles of well-maintained trails and a living gallery of formal gardens, studded with sculptures collected from around the world.

Papers presenting original research are solicited in the areas of communication systems, communication and computer networks, detection and estimation theory, information theory, error control coding, source coding and data compression, network algorithms, control systems, robust and nonlinear control, adaptive control, optimization, dynamic games, multi-agent systems, large-scale systems, robotics and automation,

manufacturing systems, discrete event systems, multivariable control, computer vision-based control, learning theory, cyber-physical systems, security and resilience in networks, VLSI architectures for communications and signal processing, and intelligent transportation systems.

Plenary Lecture: Professor Martin Vetterli of the School of Computer and Communication Sciences, Ecole Polytechnique Fédérale de Lausanne, will deliver this year's plenary lecture. It is scheduled for Friday, October 2, 2015 at the Allerton Park and Retreat Center.

Opening Tutorial Lectures: Professor Andrea Montanari, Stanford University, and Professor Francis Bach, Laboratoire d'Informatique de l'Ecole Normale Supérieure, will both present a tutorial lecture on Tuesday, September 29, 2015 at the Coordinated Science Laboratory, University of Illinois at Urbana-Champaign.

Authors will be notified of acceptance via e-mail by August 7, 2015, at which time they will also be sent detailed instructions for the preparation of their papers for the Proceedings.

Final versions of papers to be presented at the conference are required to be submitted electronically by October 4, 2015 in order to appear in the Conference Proceedings and IEEE Xplore.

Registration will begin on August 7, 2015. <https://conf.papercept.net/registration/index.php>

Conference Co-Chairs: Angelia Nedich and Minh Do

Email: allerton-conf@illinois.edu URL: <http://www.csl.illinois.edu/allerton/>

Coordinated Science Laboratory and The Department of Electrical and Computer Engineering
University of Illinois at Urbana-Champaign

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3.5. AAAI Symposium on Self-Confidence in Autonomous Systems

Contributed by: Nisar Ahmed, Nisar.Ahmed@colorado.edu

We are pleased to announce and solicit contributions for the AAAI 2015 Fall Symposium on “Self-Confidence in Autonomous Systems“, to be held in Washington, DC Nov 12-14, 2015.

Symposium website: <http://scas2015.recuv.org/>

Description:

This symposium will explore the possibilities for augmenting human-machine dialog through communication of an autonomous agent's “sense of confidence”, i.e. the agent's perceived ability to effectively execute assigned tasks. Such reporting goes above and beyond mere assessment of probabilities for modeled outcomes or successful task completion. Rather, “self-confidence” summarizes an agent's holistic assessment of robustness regarding its ability to achieve assigned goals (within a defined region of autonomous behavior) in spite of:

- * uncertainties in its knowledge of the world
- * uncertainties of its own state/self, and
- * uncertainties about its reasoning processes and execution capabilities.

This symposium aims for a holistic interdisciplinary discussion of the factors that contribute to the perception, quantification and understanding of various types of uncertainty in modern (and soon-to-be-realized) autonomous systems. We invite contributions from researchers in AI/expert systems, human factors, autonomous robotics and control/complex systems engineering, and other related disciplines that explore several key questions for this newly emerging topic, including:

- * What does “self-confidence” mean in the context of autonomous systems?
- * What factors influence self-confidence?

- * How can self-confidence actually be computed?
- * How can/should self-confidence actually be communicated?

Important dates:

August 21, 2015: contributed abstracts/papers due

August 28, 2015: author decision notification

September 4, 2015: camera-ready abstracts/papers due

October 16, 2015: registration deadline

November 12-14, 2015: AAAI Fall Symposium in Arlington, VA (Westin Arlington Gateway)

Submission instructions:

This symposium will feature invited talks and contributed paper presentations, as well as panel discussions and group breakout session focusing on the implementation of self-confidence in real autonomous systems. Contributions should address any of the following themes:

- * Competence: how can an autonomous agent determine whether a task situation actually falls within (or is about to reach) its designed competency boundary?
- * Information adequacy: are the data/knowledge available to an autonomous agent sufficient to effectively assess the situation and develop an appropriate course of action?
- * Quantification and expression: how can self-confidence be consistently calculated and communicated?

Please submit an extended abstract (2 pages) or full paper (8 pages max) as a .pdf file in AAAI format by August 21, 2015 via the symposium website. All submissions will undergo single-blind review; authors of accepted papers will present short talks during the symposium.

Invited speakers:

- * Parimal Kopardekar, NextGen Airspace Project Manager, NASA Ames
- * Hadas Kress-Gazit, Associate Professor, Cornell University
- * Marek Druzdzal, Associate Professor, University of Pittsburgh
- * Mark Draper, Senior Engineering Research Manager, AFRL (tentative)

Organizing Committee:

- * Missy Cummings, Associate Professor, Duke University
- * Nisar Ahmed, Assistant Professor, University of Colorado Boulder
- * Chris Miller, Chief Scientist, Smart Information Flow Technologies
- * Andrew Hutchins, Graduate Researcher, Duke University
- * Ugur Kuter, Senior Scientist, Smart Information Flow Technologies
- * Nicholas Sweet, Graduate Researcher, University of Colorado Boulder

For more information and updates/announcements, please visit the symposium website: <http://scas2015.recuv.org/>
We look forward to receiving your contributions and seeing you in DC!

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3.6. World Congress: Mathematical Problems in Engineering, Aerospace and Sciences

Contributed by: Seenith Sivasundaram, Seenithi@gmail.com

World Congress: Mathematical Problems in Engineering, Aerospace and Sciences

When: 05-08 July 2016

Where: La Rochelle, France, University of La Rochelle

Website: <http://www.icnpaa.com>

<http://www.internationalmathematics.com/icnpaa/>

ICNPAA's AIM

Mathematical Problems in Engineering, Aerospace and Science have stimulated cooperation among scientists from a variety of disciplines. Developments in computer technology have additionally allowed for solutions of mathematical problems. This international forum will extend scholarly cooperation and collaboration, encouraging the dissemination of ideas and information.

The conference will have a pool of active researchers, with a proper balance between academia and industry, as well as between senior and junior researchers, including graduate students and post-doctoral fellows. It is anticipated that such a balance will provide both senior and junior researchers an opportunity to interact and to have a wider picture of recent advances in their respective fields. The conference, especially, enables the setting up of new interdisciplinary research directions among its participants by establishing links with world renowned researchers, making possible joint international projects that will no doubt bring about fresh and innovative ideas and technologies in engineering, aerospace and sciences

The proceedings will be published by the American Institute of Physics (AIP).

Co-Sponsored by: AIAA: American Institute of Aeronautics and Astronautics

IFIP: International Federation of Information Processing

La Rochelle, France, University of La Rochelle

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3.7. IFAC International Workshop on Adaptation and Learning in Control and Signal Processing

Contributed by: Alexander Pogromsky, a.pogromsky@tue.nl

Joint IFAC workshops:

12th IFAC International Workshop on Adaptation and Learning in Control and Signal Processing (ALCOSP)

6th IFAC International Workshop on Periodic Control Systems (PSYCO)

When: June 29 - July 1, 2016

Where: Eindhoven University of Technology, The Netherlands

Websites: <http://alcosp2016.wtb.tue.nl/> <http://psyco2016.wtb.tue.nl/>

Invited session proposal: December 7, 2015

Paper submission (Full length, IFAC style): December 15, 2015

These workshops have the goal of bringing together researchers and practitioners interested in adaptation, learning, identification, observation and control providing them with a forum for presentation of recent developments and assessment of the most promising trends for future research.

The scope of the workshops covers all aspects of adaptive/learning systems, oscillatory systems theory e.g. modelling and analysis and signals and dynamics, repetitive control design etc. All participants of PSYCO 2016 may attend ALCOSP 2016's sessions. For more information visit the workshops webpages <http://alcosp2016.wtb.tue.nl/> and <http://psyco2016.wtb.tue.nl/>

3.8. Workshop on Control and Optimisation

Contributed by: James Anderson, james.anderson@eng.ox.ac.uk

Call for Participation and for Posters:

Control and Optimisation UK

<http://users.ox.ac.uk/~chri2895/>

14-15 September 2015, Oxford (UK)

The workshop aims to connect researchers from the sciences, mathematics, and engineering who share an interest in control theory in order to promote systems and control engineering research within the UK. Topics will range from theoretical results, optimisation-based analysis and control strategies to advanced applications of control theory.

Important Dates:

Registration Deadline: August 30, 2015

Poster Submission: August 21, 2015

Registration:

Registration is now open <http://users.ox.ac.uk/~chri2895/registration.html>

Poster Submissions: Poster submissions are welcome on the topics: control theory, optimisation-based analysis and control strategies to advanced and novel applications of control systems.

Plenary Speakers:

Rodolphe Sepulchre (University of Cambridge); Eric Kerrigan (Imperial College London); Matthew Turner (University of Leicester)

Organisers:

James Anderson, University of Oxford, Oxford, UK; Giorgio Valmorbida, University of Oxford, Oxford, UK.

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3.9. Workshop on Large-scale Bayesian Data Fusion and Consensus

Contributed by: Nisar Ahmed, Nisar.Ahmed@colorado.edu

We are soliciting abstracts for the upcoming full-day workshop on Large-scale Bayesian Data Fusion and Consensus, to be held during the IEEE International Conference on Multisensor Fusion and Integration for Intelligent Systems in San Diego, CA from September 14-16, 2015.

Workshop website: <https://sites.google.com/a/mst.edu/mfi-2015-workshop/>

Description:

Intelligent sensor networks and dependable dynamic distributed information processing systems have drawn considerable interest for applications such as environmental monitoring, surveillance, search and rescue, and scientific exploration. To operate autonomously in the face of real world uncertainties, individual sensor platforms in such networks typically rely on perception and planning algorithms that combine local and network-wide reasoning. As computing power and hardware continue to improve, demand will also grow for these systems to process more diverse kinds of information for increasingly complex dynamical processes and to communicate within larger networks at very high rates for real-time/online decision-making.

This workshop will explore theoretical connections and novel large-scale applications of two data fusion frameworks popular in the robotics and controls communities for meeting these challenges: Bayesian distributed data fusion (DDF) and network-based consensus. Bayesian DDF is mathematically equivalent to an idealized centralized Bayesian data fusion strategy, but is far more computationally efficient, scalable, and robust to network node failures through the use of recursive peer-to-peer message passing of local statistical beliefs. The network-based consensus framework provides another formal framework for conservatively combining local state estimation information in networks via iterated decentralized averaging, and can provide attractive convergence and stability guarantees for closed-loop multi-agent control and coordination. Recent developments in the consensus literature suggest potentially deeper connections to Bayesian DDF that have not yet been explored. Such connections could provide valuable insight for developing robust tightly integrated decentralized decision-making and information processing algorithms for dependable networks of intelligent heterogeneous sensing agents in large-scale problem spaces (as characterized by high data volume, high-dimensional processes, and/or large numbers of sensors or agents).

We invite participants to contribute abstracts for short talks describing new/ongoing work in any of the following topic areas (which will be the focus of the workshop sessions):

1. Fundamental connections between DDF and consensus techniques
2. Fusion in high-dimensional and functional spaces

Important dates:

Abstract Submission: August 22, 2015 (submit to mfi2015consensusworkshop@gmail.com) Author/Decision

Notification: August 29, 2015

Workshop Date: September 14, 2015 (at MFI 2015, San Diego State University, San Diego, CA)

Submission instructions:

We invite participants to submit extended 2-3 page abstracts describing new/ongoing work. Submissions should be in .pdf format using the standard IEEE conference paper template (LaTeX or Word). The best submissions will be selected for presentation during the workshop via single-blind review (so please include all author names and affiliations). Selected submissions will also be invited to submit their work to a future special book collection (to be arranged by the workshop organizers).

Submissions should be sent to mfi2015consensusworkshop@gmail.com by August 22, 2015.

Invited speakers and panelists:

Simon Julier, University College of London

Ronald Mahler, Lockheed Martin (tentative)

Invited Industry and Government Expert Panelists: Dr. Frederica Darema (AFOSR), Paul Thomas (UK MOD STL), Anthony Barfoot (UK MOD STL), Michael Fiegert (Siemens AG)

Organizing Committee:

Nisar Ahmed, University of Colorado Boulder

David Casbeer, Air Force Research Laboratory

Daniel Clarke, Cranfield University

William Whitacre, Draper Laboratory

Tansel Yucelen, Missouri University of Science and Technology

For more information and updates/announcements, please visit the symposium website:

<https://sites.google.com/a/mst.edu/mfi-2015-workshop/>

We look forward to receiving your contributions and seeing you in San Diego!

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4. Books and Online Courses

4.1. Transport of Water versus Transport over Water

Contributed by: Rudy Negenborn, r.r.negenborn@tudelft.nl

New book: Transport of Water versus Transport over Water Exploring the dynamic interplay of transport and water

Editors: C. Ocampo-Martinez (Technical University of Catalunya) and R.R. Negenborn (Delft University of Technology)

2015; pp. 478; Publisher: Springer; ISBN: 978-3-319-16132-7

<https://dx.doi.org/10.1007/978-3-319-16133-4>

Abstract:

This book aims at stimulating discussion between researchers working on state of the art approaches for operational control and design of transport of water on the one hand and researchers working on state of the art approaches for transport over water on the other hand. The main contribution of the book as a whole is to present novel perspectives ultimately leading to the management of an envisioned unified management framework taking the recent advances from both worlds as a baseline.

The book is intended to be a reference for control-oriented engineers who manage water systems with either or both purposes in mind (transport of water, transport of goods over water). It highlights the possible twofold nature of water projects, where water either acts as primary object of study or as a means. The book is dedicated to comparing and relating to one another different strategies for (operational) management and control of different but strongly related systems in the framework of the water. In that sense, the book presents different approaches treating both the transport of water and transport over water. It compares the different approaches within the same field, highlighting their distinguishing features and advantages according to selected qualitative indices, and demonstrates the interaction and cross-relations between both fields. It will also help to determine the gaps and common points for both fields towards the design of such a unifying framework, which is lacking in the literature. Additionally, the book looks at case studies where the design of modeling/control strategies of either transport of water or transport over water have been proposed, discussed or simulated.

For more information: <http://www.transportoverwater.net/>

Content:

* Perspectives on Transport of Water versus Transport over Water (by R.R. Negenborn and C. Ocampo-Martinez)

Part I: Transport of Water

* Model predictive control for combined water supply and navigability/sustainability in river systems (by V. Puig, C. Ocampo-Martinez and R.R. Negenborn)

* Data assimilation to improve models used for the automatic control of rivers or canals (by P.-O. Malaterre, N. Jean-Baptiste and C. Dorée)

* Distributed LQG control for multiobjective control of water canals (by J.M. Lemos and I. Sampaio)

* Forecasting and predictive control of the Dutch canal network (by A. van Loenen and M. Xu)

* Transport of water versus particular transport in open-channel networks (by G. Belaud and X. Litrico)

* Coordinating model predictive control of transport and supply water systems (by C.C. Sun, V. Puig and G. Cembrano)

- * Effects of uncertain control in transport of water in a river-wetland system of the Low Magdalena River, Colombia (by L. Alfonso and M. Tefferi)
- * Automatic tuning of PI controllers for water level regulation of a multi-pool open-channel hydraulic system (by D. Dorchie and P.-O. Malaterre)
- * Hierarchical MPC-based control of an irrigation canal (by A. Sadowska, P.J. van Overloop, C. Burt, B. De Schutter)

Part II: Transport over Water

- * Model predictive control for incorporating transport of water and transport over water in the dry season (by X. Tian, R.R. Negenborn, P.J. van Overloop, J.M. Maestre and E. Mostert)
- * Enhancing inland navigation by model predictive control of water levels: The Cunchy-Fontinettes case (by K. Horváth, L. Rajaoarisoa, E. Duviella, J. Blesa, M. Petreczky and K. Chuquet)
- * Effects of water flow on energy consumption and travel times of micro-ferries for energy-efficient transport over water (by M. Burger and B. De Schutter)
- * Potential fields in modeling transport over water (by E. Osekowska, S. Axelsson and B. Carlsson)
- * Safe and efficient port approach by vessel traffic management in waterways (by J. Froese)
- * Technological challenges and developments in European inland waterway transport (by R.G. Hekkenberg)
- * Wave filtering and dynamic positioning of marine vessels using a linear design model: Theory and experiments (by V. Hassani and A.M. Pascoal)
- * Closed-loop identification and control of inland vessels (by A. Padilla, R. Bittner and J.I. Yuz)
- * Nonlinear iterative control of manoeuvring models for transport over water (by E. Revestido Herrero, M. Tomás-Rodríguez and F.J. Velasco)
- * Performance evaluation of an inland pusher (by M. Godjevac and M. Drijver)
- * City logistics by water: Good practices and scope for expansion (by J. Maes, C. Sys and T. Vanelslander)
- * Reactivation of the small inland waterway network (by E. van Hassel)
- * Fostering cooperation in inland waterway networks: a gaming and simulation approach (by A.W. Veenstra, J. van Meijeren, J. Harmsen and A. Verbraeck)

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4.2. Online seminars at the Control Systems Forum

Contributed by: Tansel Yucelen, yucelen@mst.edu

Online Seminars by Profs. Hedrick, Egerstedt, and Lewis

We are happy to let you know that we will host Profs. J. Karl Hedrick (August 4, 1200 CDT), Frank L. Lewis (September 9, 1200 CDT), and Magnus Egerstedt (October 7, 1200 CDT) at the Control Systems Forum. They will give online seminars for 50 minutes in their respective research topics, which will be followed by Q/A sessions. In order to freely register for their online seminars (online seats are limited!), please visit <http://consys.forum.mst.edu/>.

Missouri University of Science and Technology's Control Systems Forum (CSF) is dedicated to the dissemination and discussion of new research results, education perspectives, and applications of automatic control, decision-making, and dynamical systems. This forum, which is organized by the Advanced Systems Research

Laboratory (ASRL), enables individuals from academia, government and industry to follow the state-of-the-art approaches from experts in control systems. For further information, please contact with: Asst. Prof. Tansel Yucelen (forum director) at yucelen@mst.edu.

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5. Positions

5.1. PhD: Technical University of Denmark, Denmark

Contributed by: John Bagterp Jørgensen, jbjo@dtu.dk

PhD Position relate to Model Predictive Control and Injection Molding

The Technical University of Denmark

Department of Applied Mathematics and Computer Science at the Technical University of Denmark has a vacant PhD position related to Model Predictive Control and injection moulding. In the project we will use new sensor technology in combination with Model Predictive Control to significantly advance high precision injection moulding manufacturing technology.

The project is a collaboration between the Technical University of Denmark and LEGO and is part of the Manufacturing Academy of Denmark, MADE (www.made.dk). In the project we will do research combing new sensor technology, model predictive control, and statistical process control into a new quality control system for high precision injection moulding. We will test this system at experimental facilities at DTU as well as in an industrial plant at LEGO in Billund.

Candidates for the position must have a master degree in mathematical modelling and computing, computational science and engineering, physics, electrical engineering, mechanical engineering, chemical engineering or equivalent academic qualifications. The candidate must document skills within numerical modelling and scientific computing for dynamical systems, model predictive control, numerical optimization, statistics and programming. Knowledge of and experience with injection molding processes and high precision manufacturing are an advantage. Furthermore good communication skills in English as well as strong interpersonal and collaboration skills are required.

As part of the PhD project the candidate must be able to work at the DTU campus in Lyngby, at the LEGO factory in Billund, and at an international university during an external research stay.

The position will be vacant from November 1, 2015 and the application deadline is September 1, 2015.

You can read more about the position here

<http://www.dtu.dk/Job/job?id=de105f36-17bc-40ac-8fc8-46807d420bc3>

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5.2. PhD: Missouri University of Science and Technology, USA

Contributed by: Tansel Yucelen, yucelen@mst.edu

We are searching for an exceptional Ph.D. student with a strong background in dynamical systems and automatic controls to work on a funded research assistant position at the Advanced Systems Research Laboratory (ASRL, www.ASRL.us) of the Department of Mechanical and Aerospace Engineering at the Missouri University of Science and Technology. This student is expected to start working on Fall 2015 or Spring 2015 and perform high-quality and innovative theoretical and experimental research on resilient autonomous vehicles and cooperative robotics.

Our intention is to give our strong guidance in order to maximize the chances of our students of building a rewarding research career. If you are interested, please send an email to Asst. Prof. Tansel Yucelen at

yucelen@mst.edu including:

1. Your curriculum vitae (applicants with M.S. degree are preferred)
2. A publication on dynamical systems and automatic controls (applicants with accepted or submitted conference or journal papers are preferred)
3. A concise paragraph (4-5 sentences maximum) that explains your theoretical and experimental experience on dynamical systems and automatic controls
4. A list that shows the undergraduate and M.S. courses the applicant took related to mathematics, dynamical systems, and automatic controls.
5. Three contact information (including name, e-mail, and phone number of the person) for letter of recommendation requests (one of these three contact information must include your current advisor).

The work performed by our laboratory is focused on the creation of new information, control, and decision algorithms that reveal advanced systems such as highly capable autonomous vehicles and networked multivehicle systems. These systems are envisioned to elevate our society as well as to perform safety-critical operations with more robots and less humans. We place a strong emphasis both on theoretic research and experimentation for addressing fundamental and open real-world technological problems. Our aim is to be recognized as one of the top research laboratories in the nation by significantly advancing the knowledge, training science-based engineers and professionals, and placing our students in top research places, to shape the future of our society.

Dr. Tansel Yucelen

Director of Advanced Systems Research Laboratory

Assistant Professor of Department of Mechanical and Aerospace Engineering

Missouri University of Science and Technology

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5.3. PhD: Technical University of Munich, Germany

Contributed by: Majid Zamani, zamani@tum.de

The Hybrid Control Systems group in the Department of Electrical and Computer Engineering at Technical University of Munich announces two PhD openings on the topic of “Formal Synthesis of (Stochastic) Control Systems”. Particularly, the aims of those positions are to propose novel efficient techniques for formal synthesis of large-scale interconnected systems and of networked control systems subject to network non-idealities.

The successful candidate must have, or expect to have, a Master degree in a related topic such as Systems and Control, Applied (Pure) Mathematics, or Computer Science and should have a strong theoretical background. A competitive salary will be offered. The desired start date is early fall 2015.

Please send your detailed CV including a list of referees, your BSc and MSc transcripts (list of courses with the corresponding grades), and a one-page letter of motivation by email to (zamani@tum.de).

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5.4. PhD: Université de Lorraine, France

Contributed by: I.-C. Morarescu, constantin.morarescu@univ-lorraine.fr

A Ph.D. position is available in the framework of “Projet de Ressourcement en Région Lorraine” and supervised by Marc Jungers, Irinel-Constantin Morarescu from CRAN and Christophe Janneteau and Michael Boc from CEA LIST.

Scientific context: Embedded systems have become a predominant component of modern engineering systems. An important application domain of embedded technology is the field of control systems where embedded software is executed in order to control a physical plant. The software receives information about the plant, processes this information and determines control actions that are applied to the plant. Moreover, these systems are often interconnected with others forming a network. A typical application of such networked embedded systems is the decentralized control of fleets of robots.

Objectives: The main objective of this thesis is to design decentralized controllers that integrate the communication and computation constraints. In other words, we specify the computation budget and the communication bandwidth and range and we want to design a controller that can be executed under these constraints. In order to satisfy the communication constraints we will impose a limited number of simultaneous communications per agent. The computation constraints will be taken into account by designing simple control laws that require small computation loads. These results will be illustrated both in simulations and on a specific platform that is designed to this goal. A part of this PhD will be dedicated to build this experimental platform composed of a fleet of robots.

Candidate profile: We are looking for a Master Research or engineer profile having a good background in control theory. The applicant should be interested in theoretical and practical aspects of multi-agent systems. The working language can be either English or French. Applications have to be sent by email before 15/09/2015 at marc.jungers@univ-lorraine.fr or constantin.morarescu@univ-lorraine.fr, who can also be contacted for further information, and should include a resume, recommendation letters (or persons to contact preferably).

This project has been made possible with a financial support of the Regional Council of Lorraine and the “Fonds Européen de Développement Régional (FEDER)”. L’Europe s’engage en Lorraine.

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5.5. PhD: Chalmers University of Technology Sweden

Contributed by: Paolo Falcone, [Paolo Falcone](#)

PhD - Vehicle motion control with performance and safety guarantees

We invite applications for one PhD position in vehicle motion control for autonomous driving applications. The main objective of this research is to study and experimentally validate model-based decision-making and control algorithms for autonomous vehicles where safety and performance must be guaranteed, despite of measurements noise and disturbances.

The position is announced at the Mechatronics research group of the Department of Signals and Systems at the Chalmers University of Technology

(<http://www.chalmers.se/en/departments/s2/Pages/default.aspx>).

The successful candidate will join the Mechatronics group at Chalmers, where a team of PhD students, post-docs and senior researchers is involved in autonomous driving problems. Moreover, the successful candidate is expected to work in close collaboration with the engineers at Volvo Cars Corporation. The working time of a PhD student is mainly devoted to research. Undergraduate teaching duties, not exceeding 20% of the working time, may include (co-)supervision of MSc students. The appointment is a full-time employment for a period of maximum five years.

The position is funded by VINNOVA under the program Komplex Reglering.

Candidates shall have a Master’s Degree or equivalent in Electrical Engineering, Engineering Physics, Mechanical Engineering, Applied Math or in a related discipline.

A successful applicant should have a strong background in control theory and optimization and be familiar

with system identification tools. Programming skills in Matlab are required and in C/C++ are welcome. A genuine interest and curiosity in the subject, excellent oral and written English communication skills are needed.

Contact: Prof. Paolo Falcone. E-mail: falcone@chalmers.se

Submit your application at

<http://www.chalmers.se/en/about-chalmers/vacancies/?rmpage=job&rmjob=3225&rmlang=UK>

Deadline: August 31st, 2015

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5.6. PhD: Chalmers University of Technology, Sweden

Contributed by: Yiannis Karayiannidis, [Yiannis Karayiannidis](#)

Phd position: Constrained Robotic Manipulation in Human-centered Environments

We invite applications for one doctoral student position in robot control and manipulation for human-centered environments and physical human robot interaction (pHRI). The doctoral student will work in the areas of robotics and automatic control emphasizing in robotic manipulation and adaptive control techniques.

The position is with the Mechatronics research group in the Division of Automatic Control, Automation and Mechatronics, Department of Signals and Systems, Chalmers University of Technology, Gothenburg, Sweden. For more information about the department please follow the link:

<https://www.chalmers.se/en/departments/s2>.

Application deadline: 15-08-2015

How to apply: The application procedure is described in the following link:

https://web103.reachmee.com/ext/I003/304/job?site=5&lang=UK&validator=a72aeedd63ec10de71e46f8d91d0d57c&job_id=

Contact:

Assistant professor Yiannis Karayiannidis, e-mail: yiannis@chalmers.se; Professor Jonas Sjöberg, e-mail: jonas.sjoberg@chalmers.se

Description:

Modern robotic applications require the design of human-friendly robots that are able to operate in environments designed for human inhabitants (human-centered environments) and to collaborate with possibly inexperienced human operators. Typical tasks involved in such applications are handing over an object to the robot and human-robot cooperative manipulation of a jointly held object. The high amount of uncertainty mainly related to the involvement of the human (e.g. the human imposes constraints that are unknown to the robot) can deteriorate the performance of the robot. You are expected to design and test systems for robot control and estimation in order to enable a robot to perform constrained manipulation tasks in human-centered environments that may involve interaction with other dynamic agents (humans or robots) under uncertainties.

Major responsibilities:

The PhD student will carry out original research and complete coursework throughout the period of appointment. Results will be communicated in the form of scientific articles, conference presentations, etc. and the PhD thesis. The candidate will work under the supervision of senior researchers with background in robotics, automatic control and optimization with the Division of Automatic Control, Automation and Mechatronics. There will also be opportunities for collaboration with the Center for Autonomous Systems at Royal Institute of Technology (KTH).

The working time of a PhD student is mainly devoted to research. Undergraduate teaching duties, not exceeding 20% of the working time, may include supervision of MSc students.

Position summary:

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

Qualifications:

Applicants should have a Master's degree (or Diploma) in Automation and Mechatronics or Electrical Engineering or Mechanical Engineering or Applied Math, or an equivalent or similar background. Basic knowledge about control systems and robotics as well as experience in simulation of dynamical systems are required. Furthermore, the position requires sound verbal and written communication skills in English. High grades in relevant undergraduate courses, C/C++ and hardware implementation experience are advantageous.

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5.7. PhD: University of Groningen, The Netherlands

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

PhD position in Energy management strategies for interconnected smart microgrids

Organisation:

Since its foundation in 1614, the University of Groningen has enjoyed an international reputation as a dynamic and innovative center of higher education offering high-quality teaching and research. Balanced study and career paths in a wide variety of disciplines encourage the more than 30,000 students as well as the researchers to develop their own individual talents.

The PhD project will be carried out under the supervision of Prof. Claudio De Persis, Engineering and Technology Institute (ENTEG), and Prof. Arjan van der Schaft, Johann Bernoulli Institute for Mathematics and Computer Science (JBI). Both institutes are part of the University of Groningen. The research of Prof. De Persis' group focuses on the modeling and control of complex systems and dynamical networks, and their interaction with communication media and computational devices. Application areas are cyber-physical systems, resilient and cooperative control, power networks.

The research of van der Schaft's group is devoted to the analysis and design of complex and heterogeneous system and optimization and is motivated by applications in various areas, including physical engineering systems, networked systems, and systems biology.

Job description:

The PhD project concerns the modeling and control of interconnected ac and dc microgrids. The majority of renewable energies cannot guarantee a steady amount of power generation, and energy consumption may be partly unpredictable, especially for microgrids. Smart power grids that want to allow for a variety of green energy sources have to take into account destabilizing effects due to such erratic inflow and outflow of power, and have to come with a structure and control actions that can cope with these uncertainties. This requires a deep understanding of the physical power network and its components, and the design of advanced control strategies and algorithms to obtain not only a balance between supply and demand and to stabilize the network, but also to let it function at the maximum of its capacities.

The PhD project will be concerned with establishing a theoretical framework for the modeling of ac and dc microgrids, taking energy and interconnection structure explicitly into account, and with their stability and robustness analysis. The obtained models will be taken as a starting point for controlling the power network to an optimal operating regime, and furthermore will be used for developing dynamic pricing methods, in order to regulate the unbalance between supply and demand of the micro grids, and to enhance their energy-efficiency, robustness and adaptability.

The project is part of a larger, and growing, research effort within the collaborating groups in Groningen to perform fundamental theoretical research on the modeling and control of power networks.

The PhD position is within the NWO-DST project ‘Energy management strategies for interconnected smart microgrids’ awarded by the Netherlands Organisation for Scientific Research (NWO) within the ‘Cooperation in research between India and the Netherlands on Smart Grids’. The advertised PhD project will be carried out under the supervision of profs. Claudio De Persis (Engineering and Technology Institute Groningen) and Arjan van der Schaft (Johann Bernoulli Institute for Mathematics and Computer Science), both at the University of Groningen. The overall project is undertaken in collaboration with IIT Bombay.

Qualifications:

We are looking for a candidate with a strong background in applied mathematics, electrical or mechanical engineering. S/he should have interest in fundamental theoretical research, in mathematical modeling and control, as well as in developing new methods in this area of growing interest. Good proficiency in English (both oral and written) is required.

Conditions of employment:

The University of Groningen offers a minimum salary of Euros 2,125 gross a month in the first year up to a maximum of Euros 2,717 gross a month in the final year, based on a full time position (1.0fte). First you will get a temporary position of 1 year with the perspective of prolongation with another 3 years after an appraisal interview.

Application:

You may apply for this position before 14 September 2015 Dutch local time by email (see the contact information below).

The application should contain a curriculum vitae, a letter of motivation and contact information of 2 academic references.

Unsolicited marketing is not appreciated.

Information:

Further information can be obtained from, and applications including CV and motivation letter can be sent to

- Prof. Claudio De Persis, c.de.persis@rug.nl, +31 50 3633080
- Prof. Arjan van der Schaft, a.j.van.der.schaft@rug.nl, +31 50 3633731
- Mrs. Fredrika Fokkens, f.g.fokkens@rug.nl, +31 50 363 8493

When submitting your application, please use the subject “Ph.D. Application for the NWO-DST project”.

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5.8. PhD: ETH Zürich, Switzerland

Contributed by: Roy Smith, rsmith@control.ee.ethz.ch

PhD position: ETH Zürich; Automatic Control Laboratory
Modelling and Identification of Buildings for Energy Management

The research is a part of a larger effort in advanced control of buildings and energy-hubs to improve energy efficiency, occupant comfort and reliability. Modelling of the complex interactions between heterogeneous buildings and the environment, and between multiple buildings within the connected grids (electricity, gas, warm water) and storage facilities of an energy hub, is key to the successful optimisation and control of such systems.

The Automatic Control Laboratory has had a significant effort in building energy managements systems for more than the past six years, including an extended duration full-scale demonstration of MPC control on

an occupied 6-storey building (see: www.opticontrol.ethz.ch). The current research group includes several Post-Doctoral researchers and several Ph.D. students.

Qualifications: PhD students at ETH Zurich must hold a Master's degree from a recognised university. Those close to the completion of their Master's degree are welcome to apply.

Administrative conditions: The starting annual salary for a Ph.D. student at the Automatic Control Laboratory is 70,000 CHF (gross) plus social costs. The working language is English.

For more information and application details: Please see the online advertisement at http://control.ee.ethz.ch/news/jobs/building_modeling_2015_07_29.en.html.

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5.9. PhD/Post-Doc Positions: George Washington University, USA

Contributed by: Taeyoung Lee, tylee@gwu.edu

Flight Dynamics and Control Lab at the Department of Mechanical and Aerospace Engineering, George Washington University, Washington DC, USA, invites applications for one Ph.D student position and one post-doctoral scientist position.

* PhD: Autonomous Drone for Air Wakes Analysis

Flight Dynamics and Control Lab at the Department of Mechanical and Aerospace Engineering, George Washington University (<http://fdcl.seas.gwu.edu>) invites applications for one Ph.D student position.

The main objective of the research is to develop software and hardware platform for autonomous multi-rotor UAV such that they can measure air wakes around a ship. This requires integrating various sensor measurements to obtain an estimate of air wake intensities at selected points. It will be demonstrated by indoor flight tests, and outdoor flight tests around an actual ship.

Required qualification

- BS/MS in control system engineering, aerospace engineering or relevant fields
- Backgrounds in dynamics, control, and estimation
- Experiences in flight experiments of multirotor UAV
- Expertise in C/C++ and multithread programming

The appointment will be for a period of 1 year, starting Spring 2016, and it will be extended based on the evaluations.

The application should consist of

- A motivation letter stating why the applicant is qualified to the research
- A complete CV with a full publication list
- List of three references

These documents should be combined into a single pdf file and sent to Prof. Taeyoung Lee (tylee@gwu.edu) with a subject "PhD application of <Name >"

* Post-Doc: Autonomous Aerial Exploration

Flight Dynamics and Control Lab at the Department of Mechanical and Aerospace Engineering, George Washington University (<http://fdcl.seas.gwu.edu>) invites applications for one post-doctoral scientist position.

The main objective of the research is to develop motion planning and control of multiple aerial vehicles

exploring an unknown area autonomously and cooperatively. The desired paths of the vehicles should be developed in an optimal fashion to maximize the information gain from the sensor measurements on those paths, while explicitly considering the sensor limitations such as the maximum sensing range and viewing angle. These will be illustrated by both numerical simulations and indoor flight tests with multirotor unmanned aerial vehicles.

Required qualification

- Ph. D in control system engineering, computer science or relevant fields
- Backgrounds in control, estimation, motion planning, mapping, and SLAM
- Experiences in flight experiments of multirotor UAV
- Expertise in C/C++, ROS, and multithread programming

The appointment will be for a period of 1 year, starting no later than Spring 2016, and it will be extended for another year based on the evaluations.

The application should consist of

- A motivation letter stating why the applicant is qualified to the research
- A complete CV with a full publication list
- List of three references

These documents should be combined into a single pdf file and sent to Prof. Taeyoung Lee (tylee@gwu.edu) with a subject "Post-doc application of Dr. <Name >"

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5.10. Post-Doc: University of New Mexico, USA

Contributed by: Meeko Oishi, oishi@unm.edu

Postdoctoral Associate: Stochastic Reachability for Cyber-Physical Systems

The Department of Electrical and Computer Engineering at the University of New Mexico (UNM) invites applications for a Postdoctoral Associate with an anticipated start date of Fall 2015.

Position:

The postdoctoral associate will work with an interdisciplinary team of researchers in ECE and in Computer Science to a) apply stochastic reachability and stochastic optimal control to improve safety in human-in-the loop systems, b) combine stochastic reachability and motion planning algorithms to enable navigation in complex, dynamic, and uncertain environments, and c) develop computational techniques to facilitate the computation of the stochastic reachable set. This is a benefits-eligible, one-year appointment that may be renewed for an additional year contingent upon satisfactory performance and availability of resources. No teaching is expected during the appointment. Salary is dependent upon experience and qualification.

How to apply:

Interested candidates should provide a CV, a cover letter summarizing capabilities and interests, and contact information for three professional references, to Prof. Meeko Oishi (oishi@unm.edu). Applications received by September 15, 2015 will receive full consideration, although the position will remain open until filled.

Minimum Qualifications:

Applicants must have completed their Ph.D. by the time of appointment in engineering, computer science, mathematics, or a closely related field, and demonstrate excellent potential for research.

Preferred Qualifications:

Desirable experience includes work in hybrid systems, stochastic optimal control, reachability analysis, or optimization. In addition, candidates should have a commitment to diversity, equity, inclusion, and student success.

About UNM:

UNM is New Mexico's flagship institution, and is located in Albuquerque, NM, USA, a metropolitan area of 650,000 that provides a wide variety of recreational and cultural opportunities. The surrounding area is renowned for outdoor activities including hiking, mountain biking, cycling, skiing, and others. The University of New Mexico is an Equal Opportunity/Affirmative Action employer and educator. Candidates from underrepresented groups are encouraged to apply. For additional information see <http://www.unm.edu>.

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5.11. Post-Doc: Tallinn University of Technology, Estonia

Contributed by: Eduard Petlenkov, eduard.petlenkov@ttu.ee

Control Systems Research Laboratory <http://www.a-lab.ee/> is a part of the Faculty of Information Technology of Tallinn University of Technology <http://www.ttu.ee> that was established in 1918. Our focus lies in the area of advanced system modeling and control design methods.

We invite applications for one post-doctoral position in advanced control methods for industrial applications. The main objectives of this research is process data based analysis of Industrial Control Systems (e.g. district heating plants) and development of advanced control algorithms including MPC and Switched Control to increase the performance.

The project will be focused on the combination of classical control techniques with intelligent control methods and its application to control of complex nonlinear systems. The proposed research aims to:

- Determine the most suitable (with respect to predefined control criteria) control strategy for particular industrial system by means of (i) experimental data analysis, (ii) analytical and numerical modeling, and (iii) computer based simulation/verification;
- Validate the developed framework on the basis of laboratory prototypes of real industrial plants;
- Incorporate the developed algorithms into practical applications.

Required qualification:

- PhD in control systems engineering or relevant field;
- Previous experience in control and modeling of industrial processes;
- Knowledge of MATLAB/Simulink;
- Knowledge of C/C++ and/or Java programming languages is an asset;
- Good communication skills in oral and written English.

We offer:

- The appointment will be for a period of 1 year with a possibility to extend for the second year;
- As an employee of the university, you will receive a competitive salary (approximately 2600 EUR Gross Salary (2000 EUR Net Salary) per month);
- Access to a variety of research equipment available in our laboratory;
- Friendly atmosphere in a rapidly growing laboratory with worldwide recognition and international research connections.

The application should consist of:

- A motivation letter stating why the proposed research topic interests you;
- A complete CV with a full publication list;
- The contact details of at least two reference persons.

These documents must be compiled in a single pdf file and sent to a-lab@ttu.ee with a subject "Post-Doc application of <Name ><Surname >".

The deadline of the application is August 31, 2015.

Expected start of the project is November 2015.

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5.12. Post-Doc: Wayne State University, USA

Contributed by: Wen Chen, wchenc@wayne.edu

We invite applications for a research associate/postdoctoral position in the area of fault diagnosis including fault detection, estimation/reconstruction, isolation, and fault-tolerant control (FTC). The successful candidate will join a research team focusing on development of fault-diagnostic theory and applications. We are particularly interested in candidates with expertise in observer-based fault diagnosis and FTC. Requirement: Ph.D Degree in electrical engineering and/or control systems with research interests in fault diagnosis.

Experience in theory development and industrial applications is an asset.

Position is available immediately. Annual appointment with renewal is up to 2 or more years.

For further information, please contact Prof. Wen Chen, wchenc@wayne.edu.

Applicants can send a single pdf file containing a letter of interests, and a curriculum vita with a list of your publications.

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5.13. Post-Doc: VERIMAG, Grenoble, France

Contributed by: Goran Frehse, goran.frehse@imag.fr

Post-Doc Position at the Hybrid Systems Group at VERIMAG, Grenoble, France

The timed and hybrid systems group at Verimag (<http://www-verimag.imag.fr/Tempo32.html?lang=en> sorry we are busy doing research so we do not have time to maintain it) is one of the leading teams worldwide in verification, simulation and monitoring of continuous and hybrid cyber-physical systems. The research team, consisting of Oded Maler, Thao Dang and Goran Frehse, has made fundamental contributions to the domain conceptually, mathematically and computationally.

We are looking for a responsible and mature post-doc who can contribute to the group activities including tool development, handling industrial case-studies and developing the underlying theoretical foundations. In particular, the candidate should be able to help in the following projects and topics.

1. A project with ST Microelectronics on noise evaluation in analog circuits.
2. Industrial projects with Toyota, United Technologies and Bosch on test generation and falsification for hybrid systems.
3. Application of the reachability tool SpaceEx to power generation and distribution models.

The more precise work specification will depend on the candidate's interests and qualification which should be a significant subset of the following:

1. PhD in CS, EE or Applied Mathematics.
2. Acquaintance with Control, Signal Processing, Dynamical systems and Optimization
3. Acquaintance with one of the following application domains: automotive, circuit design, HVAC, power distribution.
4. Knowledge of verification and formal methods: automata, temporal logics, algorithms.
5. Autonomy
6. Programming skills in Java and C++

Verimag laboratory is situated in Grenoble, a hi-tech center in the French Alps, not far from Lyon, Geneva and Torino. It provides a good and cosmopolite working environment and opportunities to enrich academic and industrial experience, participate in international conferences and meet experts in many aspects of verification and validation of embedded cyber-physical systems. The salary is in the range of 1900-2200 Euros depending on the candidate experience. The position is for two years with possible extension. It is available immediately but the start date can be adapted to the candidate constraints.

Interested candidates are invited to send a motivation letter and a CV postdoc-hybrid@imag.fr

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5.14. Post-Doc: University of Texas, USA

Contributed by: Reza Moheimani, Reza.Moheimani@utdallas.edu

A Postdoctoral Research Position and PhD Research Assistantships are available within the Laboratory for Dynamics and Control of Nanosystems at the University of Texas at Dallas. We are seeking talented and committed individuals with the ability to work well in a multi-disciplinary research environment.

The areas of interest include: applications of estimation and control in ultra-high-precision nanoscale positioning systems, control of scanning probe microscopes for nanomanufacturing, high-speed SPM, control of microcantilevers for multifrequency AFM, and MEMS-based on-chip scanning probe microscopy and nano manufacturing.

The postdoctoral position will be available from September. The applicants must have a Ph.D. (or be close to completion) in a relevant field of engineering. They are expected to have a sound analytical background and be able to work in a laboratory environment and on projects that combine high-level theoretical research with experimental investigations. The applicants for PhD research assistantships are expected to have an undergraduate degree, or equivalent, from a well known university.

Applicants with M.S. degree are preferred. All applicants are expected to have excellent oral and communication skills.

The successful applicants will join a multidisciplinary research team and will be expected to collaborate with other researchers in the group. The positions are associated with the Laboratory for Dynamics and Control of Nanosystems in the Department of Mechanical Engineering, University of Texas at Dallas. Research and computing facilities of the laboratory are of the highest standard. The laboratory provides a stimulating and vibrant environment for research activities with excellent international collaborations.

Interested applicants should send their CV, including a list of publications, names and addresses of three references, a page cover describing research background and interests and their availability to start to Dr. Reza Moheimani Moheimani@utdallas.edu. to be considered. These positions are open until filled.

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5.15. Post-Doc: Carl von Ossietzky University of Oldenburg, Germany

Contributed by: Martin Kuehn, martin.kuehn@uni-oldenburg.de

At the research group Wind Energy Systems, ForWind - Center for Wind Energy Research, Institute of Physics of the Carl von Ossietzky University of Oldenburg, there is a vacant position available with immediate start as PostDoc and Team Leader (Salary according to TV-L E14) initially limited in time to 28 February 2018. The research focus will be on Control of Wind Turbines and Wind Farms (Team Leader)

ForWind is the joint Center for Wind Energy Research of the Universities of Oldenburg, Hannover and Bremen focussing on both basic and industry-relevant research in the field of wind energy. Currently the new "Research Laboratory for Turbulence and Wind Energy Systems" (WindLab) for 140 researchers is under construction in Oldenburg. Among others, the lab will provide a large turbulent wind tunnel suitable for aeroelastic and control experiments with scaled wind turbines and wind farms.

In addition, the German Aerospace Agency (DLR) and ForWind are preparing jointly the commissioning and operation of two research turbines in the 2.5 MW class. Novel and far reaching research activities are offered by a close link of lab and full-scale experiments with simulations on ForWind's high performance computing cluster (2,100 cores).

The control team of the research group "Wind Energy Systems" currently comprises four research assistants and several students. It addresses the design of new concepts for load reduction of wind turbines e.g. by smart blades or control of the rotor-nacelle-assembly as well as wind farm control. Tailoring and validating different feedback and feedforward control approaches for the specific requirements of the wind energy industry is an important task.

Job Description

- You are leading the control team and are contributing through your independent work and your in-depth experience in the area of control application. You are developing in close cooperation your own scientific profile in respect to both full field and lab based research.
- You are carrying out research on offshore wind turbines and on wind farm control in the integrated EU projects IRPWind.eu and InnWind.eu.
- With your proven competence in writing scientific papers you are supporting your team to place dedicated publications at conferences and in peer-reviewed journals, to further promote the visibility and networking of the research group within the scientific community and with the industry.
- Through your experience in proposal writing and administration of research projects you support the management in the medium and long-term organisational and scientific development of the research group.
- Further tasks include teaching support in the study courses Engineering Physics, Physics, European Wind Energy Master (Erasmus Mundus) and PPRE/EUREC and supervision of student projects and possibly PhD projects. These duties provide further opportunities for personal and professional development, which is actively promoted.

Candidate Profile

- The applicant shall have a qualifying university degree (diploma or master) in mechanical, electrical or aerospace engineering or an equivalent study course with profound knowledge in control engineering as well as preferably structural dynamics and/or wind energy.
- PhD degree related to the field of the position (completed or finished until end of 2015) or equivalent scientific achievements in industrial research and development
- Professional experience in management and organisation
- Experience in proposal writing and administrative management of research projects
- Proactive team player with good communication and interpersonal skills as well as confident appearance

- Very good German language capabilities or a training plan, if only basic knowledge exists
- Very good oral communication and writing skills in English

In addition, the following qualifications are desirable:

- Professional experience as team leader
- Knowledge in the planning, execution and analysis of experiments

A prolongation of the contract beyond February 2018 in the scope of future projects is intended, since a long-term cooperation and career development is aimed for.

The University of Oldenburg is dedicated to increase the percentage of female employees in the field of science. Therefore, female candidates are strongly encouraged to apply. In accordance to § 21 Section 3 NHG, female candidates with equal qualifications will be preferentially considered. Handicapped applicants will be given preference in case of equal qualification. Full-time positions can be also turned into part-time ones.

Contact:

Please send your application form appending all the usual documents (curriculum vitae, graduation results, job references) and an electronic copy of the dissertation and relevant research papers to the Carl von Ossietzky University of Oldenburg, Institute of Physics, Research Group Wind Energy Systems, Prof. Dr. M. Kuehn, phone +49 441 798 5061, e-mail: wesys.bewerbungen@forwind.de, keyword: IEEE#27 www.forwind.de, Ammerlaender Heerstr. 136, 26129 Oldenburg until 30 August 2015.

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5.16. Post-Doc: Nanyang Technological University, Singapore

Contributed by: Rong Su, rsu@ntu.edu.sg

A research fellow (RF) is sought to participate in a research project on building HVAC scheduling, which is part of the Singapor Berkeley Alliance on Building Efficiency and Sustainability in the Tropics (SinBerBEST) program. The RF is expected to undertake research on distributed building HVAC scheduling and control, and actively engage in testbed development aiming to demonstrate attained technologies. This post is available in the mid of August 2015 and last up to 1.5 year. The salary is competitive based on the candidate's technical experience and achievement.

Qualifications:

The RF is expected to hold a PhD degree in electrical engineering, mechanical engineering, or systems engineering with a strong background in modeling of complex systems, system identification, optimization and control, accompanied with relevant knowledge on software/hardware realizations.

An interested candidate needs to send a detailed CV including a list of publications, a description about past experiences and achievements that are relevant to the above advertised post, and the contact information of at least two referees to Dr Rong Su. An electronic submission is strongly encouraged. Please feel free to contact Dr Rong Su for more details, if needed.

Contact information:

Dr Rong Su

S1-b1b-59

School of Electrical and Electronic Engineering

Nanyang Technological University

50 Nanyang Avenue, Singapore 639798
email: rsu@ntu.edu.sg

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5.17. Senior Researcher/Deputy Director: ETH Zürich, Switzerland

Contributed by: Philipp Reist, pr@ethz.ch

Senior Researcher/Deputy Director

Raffaello D'Andrea's group

ETH Zürich

Introduction:

Research in Prof. D'Andrea's group is focused on the creation of systems that leverage technological innovations, scientific principles, advanced mathematics, algorithms, and the art of design in unprecedented ways, with an emphasis on advanced motion control, adaptation, and learning. Test-beds include dynamic sculptures, juggling machines, and the Flying Machine Arena. For more information, visit

<http://www.idsc.ethz.ch/research-dandrea.html>.

Position:

The Senior Researcher/Deputy Director conducts individual research, with access to the institute's research infrastructure and test-beds. Further duties include teaching responsibilities, and supporting Prof. D'Andrea in the management of the research group.

We offer:

- * A key position in a small, dedicated team (8-10 PhD students)
- * Excellent research infrastructure
- * Excellent salary and benefits

We require:

- * PhD-degree with research experience in robotics, systems, and control
- * Proficient oral and written English skills

Advantageous are:

- * Proficient oral and written German skills
- * Leadership experience

Application:

Please include the following documents in your application:

1. Cover letter that includes a research statement (max. 2 pages)
2. CV
3. Transcripts of all obtained degrees (in English)
4. Ranking information about all obtained degrees
5. Three references and their contact information (letters of reference are not requested until a later stage in the application process)

Mail your application to the following address (applications by e-mail are ignored):

D'Andrea Senior Researcher Application

Attention: Katharina Munz
Institute for Dynamic Systems and Control
ETH Zürich
ML K 32.3
Sonneggstrasse 3
8092 Zürich
Switzerland

Deadline and starting date:

The starting date is as soon as possible. Applications are processed as they arrive until the position is filled.

Contact:

Please send any inquiries to: Katharina Munz, katharina.munz@idsc.mavt.ethz.ch

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5.18. Faculty: Harbin Institute of Technology, Shenzhen Graduate School, China

Contributed by: Ms. Zhao, scc.hitsz@gmail.com

Faculty Positions in Systems and Control

Organization/Institution: Harbin Institute of Technology, Shenzhen Graduate School, Shenzhen, China

Department: School of Mechanical Engineering and Automation

The Division of Control and Mechatronics Engineering at Harbin Institute of Technology, Shenzhen Graduate School (HITSZ) invites applications for several faculty positions at all ranks. We are seeking candidates with excellent credentials in the areas of systems and control, wind energy, power systems and smart grids. Applicants must have a Ph.D. or equivalent in electrical, mechanical and power systems engineering and need to show strong research record and potential. Successful candidates will be received a joint appointment in the Center of Systems and Control. The Division currently has 11 full-time faculty members, and is expected to grow to 20 faculties in the next few years.

HITSZ offers a competitive salary and the salary levels at HITSZ for these positions are substantially higher than those provided by most universities in China, with full professor in the range of RMB 170K to 230K per year, associate professor in the range of RMB130K to 160K per year, and assistant professor in the range of RMB 90K to 110K per year. Bonus is a plus for all levels, subject to faculty's performance.

Interested candidates can send detailed CV, list of publications, statement of research (no more than 3 pages), teaching interests (no more than 2 pages), and a cover letter including contact information of three references to:

Ms. Zhao
School of Mechanical Engineering and Automation
HIT Campus Shenzhen University Town
Xili, Shenzhen
Guangdong
P. R. China 518055
or email the documents to scc.hitsz@gmail.com

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5.19. Faculty: Technische Universität Ilmenau, Germany

Contributed by: Johann Reger, reger@ieee.org

The Department of Computer Science and Automation at Technische Universität Ilmenau invites applications for the position of a Full Professor (W3) for Automation Systems which is to be filled as soon as possible. The position is hosted at the Institute of Automation and Systems Engineering of the department where the appointee will head the group for automation systems.

A highly qualified and motivated team will assist the new colleague in pushing forward cooperations within the department and also with other university departments. The group shall contribute methodological research to the university research clusters, in particular, to “Precision Engineering and Precision Measurement Technology”, “Technical and Biomedical Assistance Systems”, and “Drive, Energy and Environment Technology”.

Candidates are expected to have an excellent scientific record in the area of automation systems and should document experience in some of the following areas:

- process automation and distributed process control
- modeling and identification of automation systems
- verification and diagnosis of process control systems
- discrete event and hybrid systems

Teaching contributions are expected in the area of automation systems within the bachelor and master courses of engineering programs at the university. The candidate should feature pedagogical aptitude and willingness to decisively advance the quality of student programs and teaching syllabus. A disposition of the candidate to offer non-elective courses in German language is required, elective courses may be taught in English. The appointee is expected to show activities in the academic self-administration.

The institute of automation and systems engineering traditionally holds strong relationship with the local Application Center System Technology AST of the Fraunhofer Institute of Optics, System Technologies and Image Exploitation (IOSB). In collaborative research, the Ilmenau Fraunhofer IOSB-AST opens up the possibility to put application oriented research into industrial practice.

Prerequisite for taking the position as a university professor are the regulations according to §77 ThürHG, especially concerning proof of additional scientific accomplishments shown generally through the habilitation as well as through experience in teaching.

Having achieved the certificate “Total E-Quality”, the university desires to increase female participation in research and teaching and thus encourages qualified female researchers to submit their applications. The university also actively supports moving the center of life to the vicinity of the job place. The university will provide information on employers in the technology region Ilmenau-Jena in connection with the career wishes of family partners. Severely disabled persons have preference for the application process if they are equally qualified and suited for the position.

Applications with the usual supporting information (CV, certificates, list of publications including reprints of selected papers, teaching credentials, and a collection of projects conducted) should be submitted to:

Prof. Dr.-Ing. habil. Kai-Uwe Sattler
Dean, Department of Computer Science and Automation
Technische Universität Ilmenau
P.O. Box 100565
98684 Ilmenau, Germany
or by Email to: dekanat-ia@tu-ilmenau.de
Deadline for applications: Oct 23, 2015

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5.20. Faculty: North Carolina State University, USA

Contributed by: Steve Campbell, slc@math.ncsu.edu

Tenure Track Position at North Carolina State University

The Department of Mathematics at North Carolina State University invites applications for one or more tenure-track position(s) beginning Fall 2015, depending on the availability of funding. We are seeking exceptionally well-qualified individuals with research interests compatible with those in the department in the general area of applied mathematics. Candidates must have a PhD in the mathematical sciences or related areas; a successful post-doctoral experience; an outstanding research program; a commitment to effective teaching at the undergraduate and graduate levels; and demonstrated potential for excellence in both research and teaching. The Department of Mathematics has strong research programs in applied and pure mathematics. Many members of the department participate in interdisciplinary programs and research groups.

Information about the department is available at <http://www.math.ncsu.edu>. Among the areas of interest are dynamical systems, control, numerical analysis including numerical linear algebra, stochastic systems and applications.

Submit your application materials at <http://www.mathjobs.org/jobs/ncsu>.

Please include curriculum vitae, at least three letters of recommendation, and a description of current and planned research.

You will then receive instructions to complete a faculty profile at <http://jobs.ncsu.edu/postings/42548>. For questions concerning the position contact: math-jobs@math.ncsu.edu.

North Carolina State University is an Equal Opportunity and Affirmative Action Employer, and welcomes all persons without regard to sexual orientation. The College of Sciences welcomes the opportunity to work with candidates to identify suitable employment opportunities for spouses or partners. Priority will be given to applications received by 15 November 2015.

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5.21. Faculty: Delft University of Technology, The Netherlands

Contributed by: Tamas Keviczky, t.keviczky@tudelft.nl

The Delft Center for Systems and Control (DCSC) of Delft University of Technology, The Netherlands, announces an open position for a Tenure Track Assistant Professor in the field of Nonlinear and Hybrid Systems.

The research area of the position will be oriented towards fundamental topics in one or more of the following fields:

- nonlinear systems
- hybrid systems
- optimization for control
- time-delay systems.

Prospective research activities involve the development of systematic and computationally efficient modeling, analysis, control, and/or verification methods within the topics listed above. The activities of the new position should be complementary to the ongoing fundamental research within the Hybrid and Distributed Systems and Control group of DCSC, which mainly involves model predictive control of max-plus linear and piecewise affine systems, adaptive control, and distributed model predictive control and estimation.

In addition, within this position applications of the developed fundamental methods should be targeted in application fields that could either connect to current application fields at DCSC, such as road and freeway networks, transportation systems, smart grids, water distribution networks, robotics, renewable energy, smart buildings, or that could focus on a completely new field within DCSC that is related to the current research fields of the Faculty of Mechanical Maritime and Materials Engineering (see <http://www.3me.tudelft.nl/en/research/research-areas/>).

The position offered is a tenure-track position for a period of 6 years, leading to a permanent position assuming excellent performance. During the tenure track, the candidate will have the opportunity to develop into an internationally acknowledged and recognized academic. To this aim we offer a structured career and personal development program. For more information about the tenure track and the personal development program, please visit <http://www.tudelft.nl/tenuretrack>.

Delft University of Technology offers an attractive benefits package, including a flexible work week, and the option of assembling a customized compensation and benefits package. Salary and benefits are in accordance with the Collective Labor Agreement for Dutch Universities, and depends also on the past track record of the candidate.

We are looking for a candidate with a PhD degree in systems and control, computer science, applied mathematics, mechanical engineering, electrical engineering, operations research, or informatics, and with an extensive expertise in the topic of the position as well as the broad field of systems and control. The candidate should have at least 1 year of postdoc experience. She/he should already have gained an international reputation in her/his field of research and also have a proven track record in conducting innovative fundamental research demonstrated by the ability to publish in leading international journals. She/he is expected to develop her/his own line of research and to establish cooperation with other groups at the university, national, and international level. The candidate should also have the didactic abilities for teaching systems and control courses at the BSc, MSc, and postgraduate level, and for supervising MSc projects. A good command of English is an essential requirement. International applicants must be willing to acquire knowledge of the Dutch language.

For more detailed information on the position, please contact Bart De Schutter or Tamós Keviczky at b.deschutter@tudelft.nl or t.keviczky@tudelft.nl

Applicants should submit their letter of application along with a curriculum vitae or resume, a personal research and teaching statement, as well as a list of publications, electronic copies of three key publications, and the names and email addresses of three referees, via email to Application-3mE@tudelft.nl attn. Ms Bianca van Someren of the HR department. When applying, make sure to mention the vacancy number: 3ME15-22. The application deadline for the position is September 15, 2015.

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5.22. Faculty: University of Bath, UK

Contributed by: Mark Opmeer, m.opmeer@bath.ac.uk

Department of Mathematical Sciences, University of Bath, UK

Applications are invited for two positions in Applied Mathematics at either Lecturer (Assistant Professor), or Senior Lecturer/Reader (Associate Professor) level.

For one of these positions the department is particularly interested in applicants in Mathematical Control Theory. However, applications are welcome in any area of Applied Mathematics which complements and enhances existing activity at Bath.

The closing date is Thursday 01 October 2015 and interviews will take place on the 19th/20th November

2015.

Informal enquiries may be addressed to Professor Hartmut Logemann (H.Logemann@bath.ac.uk).

See the following website for details: <https://www.bath.ac.uk/jobs/Vacancy.aspx?ref=FY3282>

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5.23. Faculty: Delft University of Technology, The Netherlands

Contributed by: Henk Blom, h.a.p.blom@tudelft.nl

Assistant or Associate Professor, Tenure Track Position in Air Transport Safety. Department of Aerospace Engineering, Delft University of Technology.

This new position focuses on research and education in agent-based modelling and rare event simulation of future designs of the socio-technical air transportation system. These designs comprise systems of systems which include human entities (e.g., pilots, air traffic controllers), technological entities (e.g., aircraft, communication and navigation systems), and resources (e.g., aerodrome infrastructures, procedures), and which are open to various external influences (e.g., weather, volcanic eruptions, disease epidemics, hackers, terrorists). Research focuses on the safety, security and resilience characteristics of this complex, open, socio-technical system. Each of these characteristics emerges in a bottom-up fashion from numerous possible interactions between the local behaviours of people, technologies, weather, and procedures. We aim to assess at an early stage of development whether an advanced design of air transport operations is able to comply with the very high safety records of commercial aviation and to feed the findings back to the design process. The modelling and analysis of air transport operations include performance metrics for safety in relation to capacity, efficiency and resilience. Rare event simulation, sensitivity analysis, uncertainty quantification and learning from statistical data, weather and accidents/incidents typically make up part of the research.

Applicants are invited for appointment as Assistant or Associate Professor in Air Transport Safety. The preferred candidate has a PhD and a solid background in stochastic analysis, complexity science and artificial intelligence. The candidate has experience in establishing research expertise through supervising PhDs, attracting research funding, developing international networks, developing his or her teaching profile, supervising and motivating students, and contributing to a research organisation. We are particularly open to enthusiastic candidates who like to work in a team environment and have high potential, a growing publications record and an international profile.

The gross salary range for this position is 3320 to 6160 Euro per month. The complementary benefits package includes for example: flexible work week and optional training to improve English competency (common language used by teaching staff).

For more information about this position, please contact Prof. Henk Blom, phone: +31 (0)88 5113544, e-mail: see above. To apply, please e-mail a detailed CV, list of publications and references along with a letter of application by 1st October 2015, to v.m.vanbragt@tudelft.nl ,including a reference to vacancy number LR15-18.

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5.24. Senior Control System Engineer: GE Global Research, Shanghai, China

Contributed by: Busboom Axel, busboom@ge.com

Role Summary/Purpose:

As a Senior Control System Engineer you will develop modeling and simulations, advanced controls, and optimization technologies. You will need work independently as well as with a diverse team to develop

controls technology solutions for a variety of GE product applications including Oil and Gas, renewable energy systems, thermal power plants, and gas turbines/engines.

Essential Responsibilities:

The Senior Control System Engineer has responsibility for conducting in-depth research works, developing and delivering solutions for a broad range of industrial applications on advanced controls technologies to develop technology differentiation for GE products.

As a Senior Control System Engineer, you will:

- . Work independently as well as with a diverse team to develop advanced technology solution including modeling, estimation, advanced controls and optimization, and its application to GE products.
- . Validate performance of developed solution through simulations and applications on target product to mature technology to be transferred to the GE business.
- . Document technology and results through patent applications, technical reports, and publications.
- . Lead and guide teams in project tasks deliverables and new project ideas development.
- . Stay current with advances in control system technologies to seek out new ideas and applications.
- . Work closely with the GE businesses to identify and promote future project opportunities and secure funding for these.
- . Work in a team environment with colleagues from different control labs and CoEs from GE Global Research, and GE business units.

Qualifications/Requirements:

- . Doctorate degree in an Engineering field with a specialization in control system engineering, with a minimum of 5 years of experience OR Master's degree in an Engineering field with a minimum of 8 years of experience.
- . Expertise in at least one of the following: control system design, first principle modeling (mechanical, thermal, hydraulic, etc.) and simulation, estimation and signal processing, system engineering.
- . Demonstrated experience in conceptualizing, implementing, validating control algorithms and developing control solutions for complex physical systems, such as mechanical systems (e.g. wind turbine, heavy machines), thermal process (e.g. power/chemical plants) and units (gas turbines/engines).
- . Experience in leading projects and diverse project teams, executing on project deliverables as well as shaping projects while working closely with stakeholders.
- . Proficiency in Matlab/Simulink, C/C++. **Desired Characteristics:**
- . Knowledge and application of model-based control methodologies, estimation and virtual sensing.
- . Domain expertise in at least one of the following: Oil & Gas - Drilling and Surface, Oil & Gas - Subsea, Thermal Power Plant, Distributed Power, Renewable Energy.
- . Strong system modeling skills, both from first-principles as well from experimental data (system identification).
- . Experience with real-time implementation of control system solutions in a variety of hardware platforms.
- . Experience in pursuing and shaping programs in new technology / application areas, including new ideas/concepts, market and customer value analysis, and design, analysis and development of controls solutions for a differentiated product or service.
- . Demonstrated ability to transfer control concepts from research into products.
- . Demonstrated technical project leadership and project management skills.

- . Strong interpersonal and leadership skills in a team-oriented, international environment, ability to guide and coach project team members.
- . Self-motivated and ability to work independently and as part of a team.
- . Open, creative and flexible.
- . Ability to communicate effectively both orally and in writing.

To apply, please visit <http://www.ge.com/careers> (job number 2029238).

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