

E-LETTER on Systems, Control, and Signal Processing

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Welcome to the 334 issue of the Eletter, available electronically [here](#).

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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 Transactions on Control Systems Technology

Contributed by: Thomas Parisini, eic-ieeeetcst@units.it

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1.4. IEEE Control Systems Society Technically Cosponsored Conferences

Contributed by: Luca Zaccarian, CSS AE Conferences, zaccarian@laas.fr

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

- 21st International Conference on Methods and Models in Automation and Robotics (MMAR 2016). Miedzydroje, Poland. Aug 29 - Sep 1, 2016. <http://mmar.edu.pl/>
- Workshop on Control of Systems Governed by Partial Differential Equations (CPDE 16). Bertinoro, Italy. Jun 13 - Jun 15, 2016. <http://www.cpde2016.org/>

- 6th International Symposium on Advanced Control of Industrial Processes (AdCONIP 2017). Taipei, Taiwan. May 28 - May 31, 2017. <http://www.adconip2017.org/>
- 16th International Conference on Control, Automation and Systems (ICCAS 2016). Gyeongju, South Korea. Oct 16 - Oct 19, 2016. <http://2016.iccas.org/>

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

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2. Summer Schools

2.1. Summer School: Advanced Algorithms for Traffic Prediction and Control

Contributed by: Antoneta Iuliana BRATCU, antoneta.bratcu@gipsa-lab.fr

Summer School on “Advanced algorithms for traffic prediction and control”

Location and Date: Grenoble (France) - September 12 to 16, 2016

Organizers: Carlos CANUDAS DE WIT (GIPSA-Lab - Grenoble)

Website: <http://www.gipsa-lab.fr/summerschool/auto2016/>

This Summer School aims at presenting the main mathematical tools which allow modelling, predicting and controlling the traffic, starting with the classical ones to the most advanced ones, including optimal routing and cooperative ITS. The school will consist of a series of surveys, lectures and research talks taught in English, completed by a full day dedicated to industrial presentations and demonstrations of operational tools, among which the Grenoble Traffic Lab (GTL).

The Summer School is mainly intended to PhD students, researchers and scholars in control and traffic engineering, and applied mathematics, being meanwhile open to industrial participants.

Speakers:

- Carlos Canudas-de-Wit (CNRS-GIPSA-lab, Grenoble, France)
- Roberto Horowitz (University of California at Berkeley, USA)
- Alain Kibangou (GIPSA-lab, Grenoble, France)
- Lyudmila Mihaylova (University of Sheffield, U.K.)
- Markos Papageorgiou (University of Crete, Greece)
- Samitha SAMARANAYAKE (Cornell University, USA)
- Martin Treiber (Technische Universität Dresden, Germany)
- Henk Wymeers (Chalmers University of Technology, Sweden)

Speakers from industry:

- Thomas BAUDEL (IBM, Paris, France)
- Denis JACQUET (Karrus, Grenoble, France)
- Joan ROCA, Aurore REMY (Aimsun, Paris, France)

Early registrations are encouraged. The number of participants is limited to 50.

Registration dead-line is July 10th 2016.

For further information, please contact Antoneta Iuliana BRATCU (antoneta.bratcu@gipsa-lab.fr)

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2.2. Symposium & Summer School: Smart Systems for Water Management

Contributed by: Andrea Emilio Rizzoli, andrea@idsia.ch

Symposium and Summer School on Smart Systems for Water Management

Modelling, Simulation, Analytics and ICT for Behavioural Change

Monte Verità, Ascona, Switzerland - 22/25 August 2016

The change in climatic variability and conditions, the increase in world population, and the concentration of such world population in urban areas are increasing the stress imposed on water resources. By 2030 there will be 41 megacities worldwide, which will raise domestic water demand, posing big challenges to water supply. For instance, in London by 2020 a shortfall of 133 million litres per day is expected, if nothing is done on the management side with respect to the current practices.

This Symposium and Summer School aims at exploring the perspective of urban water demand management for the next years.

Several topics are going to be addressed, with a particular attention on modelling and understanding the behaviour of water consumers, the drivers of such behaviour, the role of social norms, economic leverages and water demand management strategies to promote behavioural change, and the role of Information and Communication Technologies to support the design, implementation and deliver smart solutions for urban water demand management.

For more information and registration contact Andrea E. Rizzoli (andrea@idsia.ch) and visit

<http://www.smarth2o.ch/smartwater>

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2.3. Summer School: Elgersburg School on Mathematical Systems Theory

Contributed by: Fabian Wirth, fabian.wirth@uni-passau.de

Summer School: 9th Elgersburg School on Mathematical Systems Theory

9th Elgersburg School on Mathematical Systems Theory

“Control Theory of Digitally Networked Dynamical Systems” and “Optimal Control Techniques”

Location and Date: Elgersburg, Thuringia (Germany), March 26 - April 1, 2017

Organizers:

Achim Ilchmann (TU Ilmenau, Timo Reis (U Hamburg), Fabian Wirth (U Passau)

Website: <https://www.tu-ilmenau.de/de/math/forschung/tagungen/elgersburg-schools/elgersburg-school-2017/>

Invitation: The organizers have the pleasure to announce the 9th Elgersburg School.

The topics and lecturers are:

“Control Theory of Digitally Networked Dynamical Systems”

Professor Jan Lunze

Universität Bochum, Germany

<https://www.ei.rub.de/fakultaet/professuren/lunze/>

“Optimal Control Techniques”

Professor Matthias Gerdt

Universität der Bundeswehr München, Germany

<https://www.unibw.de/lrt1/gerdts/mitarbeiter/prof.-gerdts>

All participants will attend both courses. Each day, there will be 90 minutes of lecture on both courses. Each morning, example sheets to be worked on in the afternoon, and example classes in the evening. See the website for the complete programme.

Registration

The school is addressed to postgraduate students and postdocs in control, either in mathematics or engineering, very good graduate students are also welcome. We would be grateful if you could pass on this information to any potential candidates.

The location has a capacity for 40 participants. Early registrations are encouraged.

The cost for the hotel including full board per person is: EUR 510,- for a single and EUR 410,- for a double room.

Due to the limited number of places there will be an application procedure for participation at the school. Applicants are asked to provide their CV and a letter of reference from their supervisor. The deadline for applications is November 30, 2016. The organizers will then rank the applications according to excellence and suitability. A list of all participants will be available on the web site by January 15, 2017.

Additionally, there are stipends for travel support, accommodation and subsistence for 10 participants.

For further information, please refer to the website or send an email to one of the organizers.

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3. MISC

3.1. DIDO 7.5: MATLAB Optimal Control Toolbox

Contributed by: Matt Wercenski, matt@elissarglobal.com

DIDO - MATLAB Optimal Control Toolbox, 7.5 released.

DIDO solves generic nonlinear optimal control problems:

- Nonlinear dynamics
- Nonlinear control constraints
- Nonlinear path constraints
- Nonlinear cost functions

A guess is not required to start the solution. DIDO is guess-free; however, if a guess is supplied by the user, DIDO will use it. DIDO automatically provides the Hamiltonian and costate trajectories for the analysis of optimality of the candidate solution.

* DIDO can provide solutions within a few seconds (for simple problems) to within a few minutes (for more advanced problems).

* The DIDO 7.5 optimal control tool box includes The DIDO Doctor Toolkit, a diagnostic tool for checking the problem formulation.

* Academic discounts are available. Check out <http://www.elissarglobal.com>.

* Free version of DIDO is available as DIDOLite from <http://www.elissarglobal.com/academic/get-dido/try-dido/>.

* For more information about DIDO and optimal control solutions, please visit www.elissarglobal.com

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3.2. Siconos 4.0.0: Software for Nonsmooth Dynamical Systems

Contributed by: Vincent Acary, vincent.acary@inria.fr

A brand new Siconos 4.0.0 is out !! Siconos is now distributed under Apache 2.0 license.

What is Siconos ?

Siconos is an open-source scientific software primarily targeted at modeling, controlling, simulating nonsmooth dynamical systems in C++ and in Python:

+ Sliding mode control systems.

+ Mechanical systems (rigid or solid) with unilateral contact and Coulomb friction and impact (nonsmooth mechanics, contact dynamics, multibody systems dynamics or granular materials).

+ Switched Electrical Circuit such as electrical circuits with ideal and piecewise linear components: power converter, rectifier, Phase-Locked Loop (PLL) or Analog-to-Digital converter.

+ Biology (Gene regulatory network).

Other applications are found in Systems and Control (hybrid systems, differential inclusions, optimal control with state constraints), Optimization (Complementarity systems and Variational inequalities), Fluid Mechanics, and Computer Graphics.

The source code (zip and tar.gz) can be found on github : <https://github.com/siconos/siconos/releases>. We are now working on the release candidate 4.1.0 that can be forked from our github repo master branch. Binary packages for linuxes are coming soon. We have also improved our documentation at <http://siconos.gforge.inria.fr> even if it still lacks some polish. As usual, your feedback comments are welcome.

We have also started to feed our YouTube channel,

<https://www.youtube.com/channel/UCgy2siTCJeSdWFPTDk71Iyw>

So, if you have any nice applications made with Siconos, please do not hesitate to contribute. We are interested in showcasing Siconos at work!

Vincent A. for the Siconos team

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3.3. European Research and Innovation Agenda on Cyber-physical Systems of Systems

Contributed by: Christian Sonntag, christian.sonntag@bci.tu-dortmund.de

European Research and Innovation Agenda on Cyber-physical Systems of Systems (CPSoS) available

Cyber-physical Systems of Systems (CPSoS) are large complex systems where physical elements interact with and are controlled by a large number of distributed and networked computing elements and human users. Examples are railway systems, air traffic, future road traffic, logistic networks, the electric grid, industrial production sites, and smart buildings. These systems are subject to increasingly stringent demands on the reduction of emissions, efficient use of resources, high service and product quality levels, and low cost and competitiveness on the world market.

The European support action CPSoS (Towards a European Roadmap on Research and Innovation in Engineering and Management of Cyber-physical Systems of Systems), www.cpsos.eu, has released a “Proposal of a European Research and Innovation Agenda on Cyber-physical Systems of Systems – 2016-2025” that describes research and innovation challenges and medium-term research and innovation priorities for the engineering and management of cyber-physical systems of systems which were identified by the project consortium in cooperation with more than 100 external industrial and academic experts.

The CPSoS project has identified three core long-term research challenges that must be addressed in an interdisciplinary manner and in collaboration of tool and solution providers, end-users, and research institutions:

- Distributed, reliable and efficient management of cyber-physical systems of systems
- Engineering support for the design-operation continuum of cyber-physical systems of systems
- Towards cognitive cyber-physical systems of systems

In addition, the project has defined 11 medium-term research and innovation priorities that should receive attention and funding in the next 5 years to advance towards meeting the core challenges:

- System Integration and Reconfiguration
- Resiliency in Large Systems
- Distributed Robust System-wide Optimization
- Data-based System Operation
- Predictive Maintenance for Improved Asset Management
- Overcoming the Modeling Bottleneck
- Humans in the Loop
- Integration of Control, Scheduling, Planning, and Demand-side Response in Industrial Production Systems
- New ICT Infrastructures for Adaptable, Resilient, and Reconfigurable Manufacturing Processes
- Multi-disciplinary, Multi-objective Optimization of Operations in Complex, Dynamic, 24/7 Systems
- Safe, Secure and Trusted Autonomous Operations in Transportation and Logistics

To provide practical context for the core challenges and medium-term priorities, the agenda summarizes the current state in a variety of technology sectors in which cyber-physical systems of systems play a key role, including transportation (automotive, rail, aerospace, maritime), logistics, the process and manufacturing industries, the energy sector, and smart buildings. For all of these sectors, current needs and major challenges are described and related to the engineering and management of CPSoS.

Download the research and innovation agenda proposal here: www.cpsos.eu/roadmap.

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4. Journals

4.1. Contents: Automatica

Contributed by: Elisa Capello, automatica@polito.it

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4.4. Contents: Mathematics in Engineering, Science and Aerospace

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Contributed by: Lars Gruene, lars.gruene@uni-bayreuth.de

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Authors: Chensong Li and Jun Zhao

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Authors: Indrani Kar

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Authors: Liao Fei and Ji Haibo

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4.11. Contents: Proceedings of the Institute of Applied Mathematics

Contributed by: Fikret Aliev, proceedings.IAM@gmail.com

Proceedings of the Institute of Applied Mathematics, V.5, N.1, 2016

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4.12. CFP: International Journal of Intelligent Robotics and Applications

Contributed by: Jingang Yi, jgyi@rutgers.edu

1. FS on Intelligent Robotics for Rehabilitation and Human Assistance

Guest editors: Jingang Yi (jgyi@rutgers.edu), Jun Ueda (jun.ueda@me.gatech.edu), and Xiangyang Zhu (mexyzhu@sjtu.edu.cn)

Submission deadline: August 15, 2016

Intelligent robotics plays a central role in the development of rehabilitation and human assistive robots, which is an important and increasing demand for maximizing the effectiveness/efficiency of the clinical therapy and processes, developing innovative solutions to promote independent living of senior citizens as well as persons with disability, and enhancing the power of the wearer in various environments. Recent advances in computational intelligence, and sensing and control technologies enable new applications in quantitative human motion analysis, diagnosis, monitoring and feedback allowing more autonomous personalized treatments without the need for constant therapist interaction. In an effort to disseminate current advances and identify challenges/opportunities, the focused section seeks submissions on original investigations relating to design, modeling and control of rehabilitation and human assistive robotic systems. Papers should contain both theoretical and practical/experimental results. Potential topics include but are not limited to:

- Rehabilitation robotics
- Exoskeleton robots and power-assisting devices
- Sensors and actuators for human-assistive systems
- Prosthetic devices and assistive systems
- Modeling and control of physical human-robot interactions
- Human-centered intelligent systems
- Argumentation of motor and sensory functions

2. FS on Advances in Soft Robotics

Guest editors: Xiaobo Tan (xbtan@egr.msu.edu), Kam Leang (kam.k.leang@utah.edu), and Zhouping Yin (yinzhp@mail.hust.edu.cn)

Submission deadline: September 1, 2016

Soft robotics, inspired by biological organisms including octopuses, worms, starfish, and elephants, offers promising and innovative solutions for safe and adaptive interactions in unstructured environments and with humans. The development of soft robots presents a number of challenges in material synthesis, mathematical modeling, mechanism design, and control, and has attracted increasing attention from researchers in recent years. For instance, a soft robot comprised of sensors, actuators, and structures, all with soft, deformable, and compliant characteristics, requires advances in material development and manufacturing technology. Also, it is crucial to have distributed, effective control architecture that requires minimal computing power. Additionally, it is of great importance to develop computationally-efficient modeling tools for soft and deformable materials and structures. The goal of this focused section is to highlight some of the key advances made in the field of soft robotics. Topics of interest for the focused section include but are not limited to:

- Electronic skin
- Soft material sensors and actuators
- Distributed sensing, actuation, and control strategies
- Mechanism design and dynamics for soft robots
- Modeling and simulation tools for soft robotics
- Enabling tools for prototyping soft robots
- Prototypes and applications

3. FS on Intelligent Robotics for Civil Infrastructure

Guest editors: Yang Wang (yang.wang@ce.gatech.edu), Thomas Bock (thomas.bock@bri.arch.tu-muenchen.de), Yunhua Li (yhli@buaa.edu.cn), Jerome P. Lynch (jerlynch@umich.edu), and Jouni Mattila (jouni.mattila@tut.fi)

Submission deadline: December 1, 2016

A great variety of intelligent robots are finding exciting applications in civil infrastructure. For example, in the past few years, small-size crawling and flying robots have been investigated for bridge inspection. Meanwhile, intelligent robotics and machinery of much larger size are played an important role in construction and maintenance of civil infrastructure. Furthermore, the combination of robotics, electronics, computing and network has also thrust a significant amount of work in smart structural technologies. In an effort to disseminate current advances of various robotics technologies for large civil structures, this focused session seeks submissions in relevant areas. Papers should contain both theoretical and practical/experimental results. Potential topics include but are not limited to:

- Robotics in construction machinery for large-scale civil infrastructure
- Mobile sensor network and robotic inspection for civil structures
- Cyber-physical civil infrastructure systems
- Prognostics, health monitoring and high-efficiency operation of large civil structures
- Robotic rehabilitation of large civil structures
- Novel actuation and control techniques for construction machinery and construction automation

These topics are of great relevance to the IEEE CSS community. Please consider submitting your work to these Focused Sections. Feel free to contact the guest editors for any questions you might have.

Manuscript Preparation

Papers must contain original contributions and be prepared in accordance with the journal standards. Instructions for authors are available online at: <http://www.springer.com/41315>.

Manuscript Submission

Manuscripts should be submitted online at: <https://www.editorialmanager.com/jira>. The cover letter should report and indicate the focused section names. All manuscripts will be subjected to the peer review process. If you have any questions relating to this focused section, please email one of the Guest Editors.

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4.13. CFP: IEEE Transactions on Intelligent Transportation Systems

Contributed by: Feng-Li Lian, fengli@ntu.edu.tw

Call for Paper: Applications and Systems for Collaborative Driving

IEEE Transactions on Intelligent Transportation Systems

Link: <http://sites.ieee.org/itss/publications/transactions/ongoing-special-issues/>

Previous advancements in sensing and computing technologies in automotive have led to the development of highly effective driver assistance systems, improving vehicle control, safety, traffic efficiency and reducing environmental impact.

Benefits are further magnified by exploiting communication among vehicles and with the road infrastructure. Vehicles are becoming sensors able to share various and detailed information, significantly widening the awareness horizon of each single car. Add to that the active participation of drivers to elevate simple cooperative driving to true collaborative driving.

Availability of such a dynamically distributed system also represents a valuable reduction in costs with respect to stand-alone systems. Furthermore, collaborative systems represent a significant step towards autonomous driving, especially in areas with high traffic densities.

A wide range of new services and applications are being enabled by vehicular cooperation, supporting better safety and navigation, driver behavior improvement and coaching, traffic efficiency, emission reduction. A true collaborative approach adds significance to the driver's and travelers' role, thus substantially increasing the potential and variety of the offered services – with safety and security-related issues as well.

Several initiatives have been carried out in the recent years, also on large scale, and this special issue intends to offer a reference point for showcasing the leading-edge research work in the field.

We solicit papers describing applications, systems, platforms, and techniques for collaborative driving. The topics of interest include, but are not limited to:

- Applications based on inter-vehicle, inter-driver and vehicle-infrastructure collaboration (e.g., collaborative navigation, collaborative parking, traffic management, collaborative/cooperative collision warning and avoidance, overtaking assistance, Collaborative/Cooperative Adaptive Cruise Control, lane merging and splitting, multi-lane platooning, etc.)
- Safety and security issues in collaborative driving
- Big data and data processing technologies for collaborative driving
- Algorithms for collaborative driving, e.g., sensor fusion, robust and safe control
- Hardware and systems for collaborative driving
- Collaborative mapping and localization systems
- ITS community building and social gaming
- Communications systems and protocols for collaborative driving
- Human-Computer interaction/interface for collaborative driving systems
- Impact of collaborative driving, e.g., on traffic, energy, environment, and society
- Autonomous technologies for collaborative driving
- Business and economic model for collaborative driving
- User studies on collaborative driving

First submission deadline: September 30th, 2016.

Notification of first decision: December 31st 2016.

First revision submission deadline: February 28th 2017.

Notification of final decision: April 30th 2017.

Final manuscript (camera ready) submission deadline: May 15th 2017

Issue of Publication: October 2017

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4.14. CFP: International Journal of Control, Automation, and Systems

Contributed by: Sungwan Kim, journal@ijcas.com

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

ISSN: 1598-6446

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

Indexed in: Science Citation Index Expanded (SciSearch), Journal Citation Reports/Science Edition, SCOPUS, INSPEC, Google Scholar, ProQuest, Academic OneFile, Current Contents/Engineering, Computing and Technology, EI-Compendex, OCLC, SCImago, Summon by Serial Solutions

CALL FOR PAPERS

Special Issue on Soft Robotics

* Publication: February 2017 * Submission Deadline: July 31, 2016

With rapidly growing interests in ‘Soft Robot International Journal of Control, Automation, and Systems (IJCAS) is pleased to announce an upcoming Special Issue on Soft Robotics. This Special Issue is intended to address the state-of-art of Soft Robot related researches and the leading researchers in soft robotics are strongly encouraged to submit their contributions to share the past, present, and future directions of soft robotics research as well as to discuss their recent research outcomes. Various important works in soft robotics including sensors, actuators, structures, modeling & control, and fabrication techniques are intended to be addressed.

The special issue publishes original papers of novel discoveries, improvements, and results relevant to the field of Soft Robotics both in theory and applications. Also, priorities will be given to papers reporting original work strongly supported by experimental results and carefully designed studies that can be shared by the research community.

Topics of interest of this Special Issue include, but are not limited to:

- Soft Robot Modeling & Simulation
- Soft Robot Control
- Soft Sensors & Soft Actuators
- Soft Electronics
- Soft/Flexible Materials & Structures
- Soft Robot & Human Interface
- Soft Robot System
- Soft Robot Applications

To explore possible topics, feel free to contact the guest editors. Accepted papers will be published in the special issue of International Journal of Control, Automation, and Systems (indexed as SCIE), which is scheduled in February 2017. All manuscripts will go through regular review processes of the journal.

Manuscript Preparation and Submission

Follow the guidelines in “Information for Authors” in International Journal of Control, Automation and Systems <http://www.ijcas.com/>. Please submit your manuscript in electronic form through Manuscript Central web site: <http://jcas.edmgr.com/>. On the submitting page #1 in popup menu of manuscript type, select: “Special Issue on Soft Robotics”.

Important Dates

Submission of Manuscripts 7/31/2016

Notification of Acceptance 10/31/2016

Submission of Final Papers 12/31/2016

Publication February 2017

Guest Editor

Sungwan Kim, Guest Editor

Professor in Seoul National University & PM in National Research Foundation of Korea, Korea

e-mail: sungwan@snu.ac.kr

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5. Conferences

5.1. Annual Allerton Conference on Communication, Control, and Computing

Contributed by: Angie Ellis, amellis@illinois.edu

The Fifty-Fourth Annual Allerton Conference on Communication, Control, and Computing will kick off with Opening Tutorials being held on Tuesday, September 27, 2016 at the Coordinated Science Laboratory. The conference sessions will start on Wednesday, September 28, 2016 through Friday, September 30, 2016, at the Allerton Park and Retreat 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 biological information systems; coding techniques and applications; coding theory; data storage; information theory; multiuser detection and estimation; network information theory; sensor networks in communications; wireless communication systems; intrusion/anomaly detection and diagnosis; network coding; network games and algorithms; performance analysis; pricing and congestion control; reliability, security and trust; decentralized control systems; robust and nonlinear control; adaptive control and automation; robotics; distributed and large-scale systems; complex networked systems; optimization; dynamic games; machine learning and learning theory; signal models and representations; signal acquisition, coding, and retrieval; detection and estimation; learning and inference; statistical signal processing; sensor networks; and data analytics.

INFORMATION FOR AUTHORS: Regular papers suitable for presentation in twenty minutes are solicited. Regular papers will be published in full (subject to a maximum length of eight 8.5" x 11" pages, in two column format) in the Conference Proceedings. Only papers that are actually presented at the conference and uploaded as final manuscripts can be included in the proceedings, which will be available after the conference on IEEE Xplore.

For reviewing purposes of papers, a title and a five to ten page extended abstract, including references and sufficient detail to permit careful reviewing, are required.

Manuscripts can be submitted during June 15-July 8, 2016 with the submission deadline of July 8th being firm. Please follow the instructions at the Conference website: <http://www.csl.illinois.edu/allerton/>.

Authors will be notified of acceptance via e-mail by August 8, 2016, 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 2, 2016 in order to appear in the Conference Proceedings and IEEE Xplore.

PLENARY LECTURE: Professor Naomi Leonard from the Mechanical and Aerospace Engineering, Princeton University, will deliver this year's plenary lecture. It is scheduled for Friday, September 30, 2016 at the Allerton Park and Retreat Center.

OPENING TUTORIAL LECTURES: Professor Panagiotis Tsiotras, Georgia Institute of Technology, and Professor Emmanuel Abbe, Princeton University, will both present a tutorial lecture on Tuesday, September 27, 2016 at the Coordinated Science Laboratory, University of Illinois at Urbana-Champaign.

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5.2. IFAC Symposium on Nonlinear Control Systems

Contributed by: Wei Kang, wkang@nps.edu

2016 IFAC Symposium on Nonlinear Control Systems (NOLCOS 2016)

Registration is open

August 23-25, 2016, Monterey Marriott
Monterey, California, USA

https://www.math.ucdavis.edu/static/conferences/nolcos_2016/

Online Registration <https://ifac.papercept.net/registration/index.php>

Early Registration deadline: June 10, 2016

Regular Registration: June 11 - August 25, 2016

The IFAC NOLCOS symposium is a continuing series of triennial symposia that started in Capri, 1989. The scope of the symposia has been on the theory and application of nonlinear control systems. NOLCOS has been acknowledged as the major international gathering of leading experts in industry and academia in the field of nonlinear control. Monterey, California, is a beautiful city located on the southern edge of Monterey Bay within driving distance from Silicon Valley, the world center of high-tech, and several universities including Stanford, UC Berkeley, UC Santa Cruz, and Naval Postgraduate School. A limited block of rooms at a very attractive rate have been reserved at Monterey Marriott for the conference attendees. Please go to the conference website for instructions on registration and hotel reservation.

NOLCOS in Monterey aims at strengthening worldwide contacts between academia and industry to build up new networks and cultivate existing relations. The themes of the conference include, but not limited to

- Control Theory: control and estimation of nonlinear systems, stability and Lyapunov methods, geometric control, optimization-based control methods.

- Applications: control of unmanned systems and robotics, energy and power systems, guidance and control, biological systems.

- Systems and Control: computation and control for large-scale systems, control of distributed parameter systems, systems and parameter identification, control of hybrid systems, cooperative control and networked systems, control of stochastic systems.

Besides the exciting scientific program there will be several social activities including an opening reception, a conference banquet and a closing reception at the world famous Monterey Bay Aquarium sponsored by the Mathworks. There are numerous activities in the Monterey area, including visiting the Carmel Mission, wine tasting in Carmel and Carmel Valley and the touring the rugged Big Sur coastline. Attendees are encouraged to bring their families and enjoy the region. The special conference hotel rate is available from Aug. 20-26. Book early as rooms at this rate are limited.

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5.3. International Symposium on Distributed Autonomous Robotic Systems

Contributed by: Roderich Gross, r.gross@sheffield.ac.uk

Final Call for Papers

DARS 2016 (<http://dars2016.org>)

13th International Symposium on Distributed Autonomous Robotic Systems

November 7-9, 2016. Natural History Museum, London, UK

Submission deadline: July 5, 2016

News: Special Issue on Distributed Robotics (see publication details)

ABOUT DARS

Now in its 13th edition, DARS provides a forum for scientific advances in the theory and practice of distributed autonomous robotic systems. It is a highly selective, single-track meeting that is soliciting submissions presenting significant, original, and previously unpublished research.

Distributed robotics is an interdisciplinary and rapidly growing area, combining research in computer science, communication and control systems, and electrical and mechanical engineering. Distributed robotic systems can autonomously solve complex problems while operating in highly unstructured real-world environments. They are expected to play a major role in addressing future societal needs, for example, by improving environmental impact assessment, food supply, transportation, manufacturing, security, and emergency and rescue services. DARS 2016 will build upon past successes and provide an exciting environment to present and discuss the latest technologies, algorithms, system architectures, and applications. All interested researchers and engineers are invited to take part in DARS 2016.

PUBLICATION DETAILS

All accepted contributions will be included as full-length papers in the Proceedings of DARS 2016. The proceedings will be published in the Springer STAR series (Springer Tracts in Advanced Robotics): <http://www.springer.com/series/5208> .

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

KEYNOTE SPEAKERS

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

SUBMITTING TO DARS 2016

Papers should be formatted according to the style files of Springer Tracts in Advanced Robotics. The page limit is 12 pages. The submission system is available at <https://ocs.springer.com/ocs/en/conference/submitpaperto/DARS2016>

Papers are solicited in all areas of distributed autonomous robotics, including, but not restricted to:

- Architectures for teams of robots
- Self-organizing and self-assembling robotic systems
- Swarm robotic systems
- Hybrid symbiotic teams (humans and robots, animals and robots)
- Learning and adaptation in teams of robots
- Modular robotics
- Localization and navigation in multi-robot systems
- Multi-robot and multi-vehicle motion coordination
- Distributed cooperative perception
- Distributed cooperative action
- Distributed control and planning
- Control issues in multi-robot systems
- Performance metrics for robot teams
- Distributed decision making
- Sensor and actuator networks
- Networking issues in multi-robot systems
- Wireless and robotic sensor networks
- Multi-robot applications in exploration, inspection, coverage, search and rescue, service, environmental monitoring, etc.

Submission instructions are available on <http://dars2016.org>

IMPORTANT DATES

- July 5, 2016 Paper Submission
- September 7, 2016 Author Notification
- September 21, 2016 Camera Ready Submission
- November 7-9, 2016 Conference

SPONSORS & EXHIBITORS

DARS is technically co-sponsored by the IEEE Robotics and Automation Society. Vicon Motion Systems is a Platinum Sponsor of DARS 2016. If you wish to become a sponsor of, or exhibitor at, DARS 2016, please visit <http://dars2016.org>.

AWARDS

The following awards will be presented at the conference:

- Best Paper Award (certificate and cash honorarium of USD 1000)
- Best Application Paper Award (by IET Robotics & Mechatronics TPN)
- Best Poster Award (by Springer)

SOCIAL MEDIA

Follow us on social media for all the latest updates. More information at <http://dars2016.org>

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5.4. ACM Workshop on Cyber-Physical Systems Security & Privacy

Contributed by: Quanyan Zhu, qz494@nyu.edu

2nd ACM Workshop on Cyber-Physical Systems Security & Privacy (CPS-SPC)

In Conjunction with the 23rd ACM Conference on Computer and Communications Security (CCS)

Location: Hofburg Palace, Vienna, Austria

Date: Friday, October 28, 2016

Workshop website: <http://eecs.oregonstate.edu/cps-spc/index.html>

Cyber-Physical Systems (CPS) integrate computing and communication capabilities with monitoring and control of entities in the physical world. These systems are usually composed of a set of networked agents, including sensors, actuators, control processing units, and communication devices. While some forms of CPS are already in use, the widespread growth of wireless embedded sensors and actuators is creating several new applications in areas such as medical devices, autonomous vehicles, and smart infrastructure, and is increasing the role that the information infrastructure plays in existing control systems such as in the process control industry or the power grid.

Many CPS applications are safety-critical: their failure can cause irreparable harm to the physical system under control, and to the people who depend, use or operate it. In particular, critical cyber-physical infrastructures such as the electric power generation, transmission and distribution grids, oil and natural gas systems, water and waste-water treatment plants, and transportation networks play a fundamental and large-scale role in our society and their disruption can have a significant impact to individuals, and nations at large. Securing these CPS infrastructures is therefore vitally important.

Similarly because many CPS systems collect sensor data non-intrusively, users of these systems are often unaware of their exposure. Therefore in addition to security, CPS systems must be designed with privacy considerations.

To address some of these issues, we invite original research papers on the security and/or privacy of Cyber-Physical Systems. We seek submissions from multiple interdisciplinary backgrounds tackling security and

privacy issues in CPS, including but not limited to:

- mathematical foundations for secure CPS
- control theoretic approaches to secure CPS
- security architectures for CPS
- security and resilience metrics for CPS
- metrics and risk assessment approaches for CPS
- privacy in CPS
- network security for CPS
- game theory applied to CPS security
- security of embedded systems, IoT and real-time systems in the context of CPS
- human factors and humans in the loop
- CPS reliability and safety
- economics of security and privacy in CPS
- intrusion detection in CPS

CPS domains of interest include but are not limited to:

- health care and medical devices
- manufacturing
- industrial control systems
- SCADA systems
- robotics
- unmanned aerial vehicles (UAVs)
- autonomous vehicles
- transportation systems and networks
- abstract theoretical CPS domains that involve sensing and actuation

Also of interest will be papers that can point the research community to new research directions, and those that can set research agendas and priorities in CPS security and privacy.

Publication of Papers

Papers will be digitally published as part of the CCS workshop proceedings, and will be part of the ACM digital library.

Important Dates

July 27th, 2016 Paper Submission Deadline (UTC-11)

August 31st, 2016 Notification of Acceptance

September 15th, 2016 Camera Ready Submission (Hard Deadline)

October 28th 2016 Workshop

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5.5. 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

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

IFIP: International Federation of Information Processing

La Rochelle, France, University of La Rochelle

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

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5.6. International Conference on Control, Automation and Systems

Contributed by: ICCAS2016, conference@icross.org

2016 16th International Conference on Control, Automation and Systems (ICCAS 2016)

October 16(SUN)-19(WED), 2016

HICO, Gyeongju, Korea

<http://2016.iccas.org>

ICCAS 2016 will be held at HICO. Gyeongju, Korea on October 16(SUN)-19(WED), 2016. The aim of the ICCAS is to bring together researchers and engineers worldwide to present their latest works, and disseminate the state-of-the-art technologies related to control, automation, robotics, and systems.

Important Dates

July 15, 2016: Notification of paper acceptance

August 12, 2016: Submission of final camera-ready papers

Plenary Speakers

Andrew Schwartz (Univ. of Pittsburgh, USA)

Maria Prandini (Politecnico di Milano, Italy)

Sangchul Won (POSTECH, Korea)

Satoshi Tadokoro (Tohoku Univ., Japan)

James Ashton-Miller (Univ. of Michigan, USA)

Huijun Gao (Harbin Institute of Technology, China)

Song K. Choi (Univ. of Hawaii, USA)

Tutorials

- Stability, control and application of Markovian Jump systems
- Input Shaping Control to Reduce Residual Vibrations
- Machine Learning with Sequential Data
- Biomimetic Robotics

The treasure of a brilliant cultural heritage Welcome to Gyeongju!! Gyeongju was the capital city of Shilla for 992 years. The history of Gyeongju, which was once called Seorabeol, is also the history of the thousand-year-old Shilla Dynasty. Gyeongju embraces a radiant ancient culture where Buddhism, science, and the arts and crafts of the people of Shilla flourished, and the great spirits of Hwarangdo attained the nification of the three kingdoms. This is why Gyeongju is so well preserved by its people and thus, has been designated as a World Cultural Heritage by UNESCO. The evergreen spirit of Shilla has been alive here for nearly a thousand years. Gyeongju is truly a museum without walls.

This event starts right after IROS 2016(Oct. 9-14), Daejeon, Korea. It takes 1 hour from Daejeon to Gyeongju by KTX(Korea Train eXpress).

Thank you for your contributions and we look forward to seeing you at ICCAS 2016 during October 16-19, 2016.

ICCAS 2016 CFP: http://icross.org/data/download/ICCAS2016/ICCAS2016_CFP.pdf

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5.7. CFP: Cross-Disciplinary Challenges for Autonomous Systems

Contributed by: Laura Humphrey, laura.humphrey@us.af.mil

Call for Participant: Cross-Disciplinary Challenges for Autonomous Systems

A proposal on “Cross-Disciplinary Challenges for Autonomous Systems” has been submitted for consideration at the 2016 AAAI Fall Symposia Series in Washington D.C. (November 17-19). As part of the proposal process, I need to gauge interest by putting together a list of people who would potentially be interested in attending (note responses are non-binding). If you would be interested, please respond in the next day or so using the form at: <https://docs.google.com/forms/d/1ISj25Qzx-Gtj7Sb7k-oW4Eqzi8R-3MptOLuizdWLLGo/viewform>

To summarize, this symposium is being proposed with the recognition that no single discipline will be able to address all the challenges that face practical fielding of autonomous systems. The goal of this symposium is then two-fold. First, to allow attendees to share recent results from their own cross-disciplinary research, as well as specific tools and approaches accessible to researchers from other disciplines. Second, to engage in working groups focused on characterizing the current and future landscape of research in autonomy. For more details on the proposed symposium see: https://drive.google.com/file/d/0B-fzt2KvIVGCcG1oeGt6LUo4cXM/view?usp=share_link

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6. Positions

6.1. PhD: University of Groningen, Netherlands

Contributed by: Pietro Tesi, p.tesi@rug.nl

Contributed by Pietro Tesi p.tesi@rug.nl and Kanat Camlibel m.k.camlibel@rug.nl

The Engineering and Technology Institute Groningen jointly with the Johann Bernoulli Institute for Mathematics and Computer Science, at University of Groningen, The Netherlands, have one PhD position vacancy on: Complex Dynamical Networks: From Data to Connectivity Structure.

We are looking for candidates with an MSc degree in systems and control or applied mathematics, and with a strong background or interest in complex networks.

The main objective of the research is to develop methodologies and algorithms to identify the connectivity structure of a complex dynamical network on the basis of observation data. Dynamical networks are pervasive in today's world, ranging from social and economic networks to biological networks and man-made infrastructures. The connection structure is very important in determining the overall network behavior. Therefore, satisfactory methods to identify the network connectivity structure, even at coarse-grained levels, are important in order to predict how a network might evolve and/or anticipate/counteract critical transitions. The research will focus on both theoretical models and real-world applications, in particular applications from energy systems. In addition, we will explore potential applications in the area of neuroscience.

The position is also affiliated with the Data Science and Systems Complexity Centre, at the University of Groningen. It concerns a research cluster of 58+ prominent researchers in a number of basic disciplines (mathematics, astronomy, computer science, artificial intelligence, systems & control) and scientific application domains (genomics, pharmacology, instrumentation), with the ambition of combining data and complexity sciences. The successful candidate will have the opportunity to work with a multi-disciplinary team of researchers.

A good command of the English language is required.

The appointment will be up to 4 years. As an employee of the university, the successful applicant will receive a competitive salary.

The successful applicant is expected to be available to commence his/her studies no later than 1 January 2017.

Interested candidates please send your inquiries together with your detailed CV and a 1-page letter of motivation or research statement to: p.tesi@rug.nl and m.k.camlibel@rug.nl (with f.g.fokkens@rug.nl in cc).

Please specify the following text in the subject: Complex Dynamical Networks: From Data to Connectivity Structure - PhD application.

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6.2. PhD: Chalmers University of Technology, Sweden

Contributed by: Tomas McKelvey, tomas.mckelvey@chalmers.se

PhD student position in Situation awareness for autonomous vehicles in complex environments

Ref nr: Ref 20160257

The PhD position is in Signal Processing group at the Department of Signals and Systems at Chalmers University of Technology, Sweden.

Information about the project

This project is concerned with self-driving vehicles, which is a vibrant and fast moving research area with a potential to fundamentally change the way humans transport themselves and transport goods. When designing self-driving vehicles, the vehicle's ability to perceive its surroundings and to position itself on the road and in the road network is of utmost importance. For example, a highly accurate host position (of sub-meter accuracy) is crucial in order for the control algorithms to be able to plan the vehicle's future path. Furthermore, self-driving vehicles have strict requirements on detecting and tracking all objects and

obstacles, even those not considered by traditional advanced driver support systems. That is, apart from tracking expected road users, such as pedestrians and cars, it also has to detect occasional debris lying on the road and track other less common vehicles.

Building on previous research conducted in the signal processing group, in this project we want to extend our perception platform to also cover self-localization, general obstacle detection (debris etc.) and estimation of drivable/safe road surface ahead of the host vehicle. We are interested in making contributions in a wide range of areas including adaptive maps, deep learning for point clouds and stereovision segmentation (drivable road estimation etc.) and cooperate perception and localization. Within the signal processing group, there is already a group of PhD students and senior researchers working on problems related to autonomous vehicles and perception, and you will have ample opportunities to collaborate with other researchers in our group.

Major responsibilities

Your major responsibilities are to pursue your own doctoral studies. You are expected to develop your own scientific concepts and communicate the results of your research both verbally and written in English. You are obviously also expected to contribute to research in the field of self-driving vehicles. The position includes teaching on Chalmers' undergraduate level or performing other duties corresponding to at most 20 percent of working hours.

Position summary

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

Qualifications

By the starting date, the applicant should have a Master of Science degree, or equivalent, in Electrical Engineering, Computer Science, Engineering Physics, Applied Mathematics, or a related discipline. A successful applicant should have a strong background in mathematics, Bayesian statistics, machine learning, optimization and programming. A genuine interest and curiosity in the subject, and excellent oral and written English communication skills are needed.

For more information see:

<http://www.chalmers.se/en/about-chalmers/vacancies/?rmpage=job&rmjob=4165>

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6.3. PhD: Lehigh University, USA

Contributed by: Nader Motee, motee@lehigh.edu

Multiple Ph.D. Research Assistantship in Large-Scale and Distributed Control and Dynamical Networks.
Contact: Prof. Nader Motee (motee@lehigh.edu)

Interested students and recently graduated PhD students are encouraged to apply for our open positions in Distributed Control and Dynamical Systems (DCDS) Laboratory in the Department of Mechanical Engineering and Mechanics at LehighUniversity. There are several open positions for Summer 2016, Fall 2016, and Spring 2017 in the form of Research Assistants and Postdoctoral Scholars. For more information about our group and current research activities, please visit our website at

www.dcds-lab.com

Students with a M.Sc. degree, preferably in Control Systems/Optimization/Applied Math or other related areas, are strongly encouraged to apply. Undergraduate students with strong background in Control Systems, Communications, Optimization and Applied Mathematics are also encouraged to apply. Interested applicants with a Ph.D. in a related field (e.g., Control Systems/Optimization/Applied Math) are strongly encouraged to apply.

Lehigh is a premier residential research university, ranked in the top tier of national research universities each year. We are a coeducational, nondenominational, private university that offers a distinct academic environment of undergraduate and graduate students from across the globe. Located in Pennsylvania's scenic Lehigh Valley, the campus is in close proximity to both New York City and Philadelphia. Lehigh is comprised of 2,358 acres, making it one of the largest private universities in the country.

Interested applicants may contact Prof. Nader Motee (motee@lehigh.edu) with the following information: (1) one-page research statement explaining how your background fits our current research group, (2) detailed CV and list of publications, (3) copies of one or two publications. All documents should be in PDF format.

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6.4. PhD: University of Oldenburg, Germany

Contributed by: Martin Kuehn, martin.kuehn@uol.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 PhD position starting as soon as possible:

Research Assistant (Salary according to TV-L E13, 100%).

The research focus will be on Experimental Approach to Modelling and Control of Wind Farms.

At present, wake interaction within a wind farm is typically not adequately taken into account in current industrial controllers, resulting in lower power output and higher structural loads. Recently, the possibility to influence either energy content or direction of wakes through wind turbine control received a strong attention from the scientific community. Wind farm controllers capable of influencing and utilizing wake interaction could lead to improved operation, such as maximization of energy yield, reduction of turbine loads, or better tracking of a power reference set by a transmission system operator. However, one of the greatest challenges in designing such a controller is the lack of reliable and simple engineering wind farm models. In order to tackle this shortcoming, ForWind - Oldenburg is utilizing its state of the art research infrastructures such as the new large turbulent wind tunnel, lidar windscanners and a dedicated high performance computing cluster. Novel and far reaching research activities are offered by a close link of lab and full-scale experiments with high fidelity simulations.

Job Description

The main goals of the PhD project are to develop suitable experimental procedures for obtaining control-oriented wind farm models, and to develop and experimentally verify wind farm control algorithms based on the derived models. An experimental setup consisting of fully controllable scaled wind turbine models in a wind tunnel will be developed, with aim of enabling all relevant control/actuator capabilities of full scale wind farms in a wind tunnel. Starting from a standard wind farm control approach, methodologies for system identification will be developed, that can be performed without obstructing wind farm operation. Different levels of model and control complexity will be analysed in order to find the best solutions in respect to wind farm performance and required hardware for implementation of the developed control algorithms.

Among others, the job will comprise:

- Development and improvement of existing experimental setup
- Development and implementation of wind turbine control algorithms
- Designing and performing wind tunnel experiments
- Development of wind turbine and wind farm mathematical models
- Development of wind farm control algorithms
- Comparison of numerical and experimental results

- Support of the teaching and other general activities of the research group

Furthermore, the candidate will be given opportunities to actively improve personal, scientific and teaching skills.

Candidate Profile

Prerequisite is a qualifying university degree (diploma or master) in engineering, physics or an equivalent course of studies with extensive knowledge in control engineering. Basic expertise in wind turbine dynamics, fluid and structural dynamics is desired. Experience with Matlab/Simulink and LabVIEW programming tools, real-time control systems, and standard laboratory tools is considered a plus. Further requirements are the aptitude and willingness for pursuing a PhD with emphasis on experimental research, as well as fluently spoken and written English. Good German language skills are desired as well.

In the beginning, the employment is limited to three years. Afterwards, an extension to a total of 4 years with the opportunity of pursuing a PhD is aimed at.

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 Â§ 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 preferably electronic application referenced #UN36 and appending all the usual documents (motivation letter, curriculum vitae, graduation results, job references) in one single pdf file as well as another pdf of the final thesis of your studies or relevant research papers (if available) to the Carl von Ossietzky University of Oldenburg, Institute of Physics, Research Group Wind Energy Systems, Prof. Dr. M. Kühn, Ammerländer Heerstr. 136, 26129 Oldenburg, Phone +494417985061, Email wesys.bewerbungen@forwind.de, www.forwind.de until July 10th, 2016.

Link: <http://www.forwind.de/forwind/files/Position-WE-Sys-UN36-WFC.pdf>

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6.5. PhD: University of Rhode Island, USA

Contributed by: Chengzhi Yuan, chengzhiyuan16@gmail.com

Applications are invited for PhD positions in Dr. Yuan's group at The University of Rhode Island. The research of the prospective candidates will focus on the following multidisciplinary research projects:

1. Robotics/Power Systems: Distributed cooperative and formation control of multi-agent robotic systems, and large-scaled smart power grid networks.
2. Biomedical Systems: Intelligent learning control and dynamical pattern recognition applied to human-heart dynamics modeling, diseases diagnosis, gait recognition, and human-leg/arm prosthesis control.
3. Autonomous Vehicles: Advanced hybrid robust control for hybrid electric automotive vehicles, aerospace supersonic vehicles, and spacecrafts.

Qualifications:

1. Successful candidates are required to have a strong background in Control Theory.
2. Knowledge and experience related to the robotics, power systems, autonomous vehicles, medical signal analysis and informatics are a plus.
3. Strong interest in cutting-edge scientific research, ambitions in publishing high-impact papers, and self-motivation are also very important assets of the successful candidates.
4. An earned master degree is preferred.

The positions are immediately available. Interested parties should send a CV/resume, academic transcripts, together with a letter indicating their interests and qualifications for the position, to Dr. Chengzhi Yuan at chengzhiyuan16@gmail.com

Visiting students/scholars, master-thesis students, and undergraduate students, who are interested in the research of Dr. Yuan's group, are also encouraged to send a CV/resume to chengzhiyuan16@gmail.com.

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6.6. PhD: University of Idaho, USA

Contributed by: Gautam Kumar, gautam.kumar@wustl.edu

One PhD position is immediately available in my Lab located in the Department of Chemical and Materials Engineering at the University of Idaho. Specific research topics are (1) stochastic model predictive control of non-linear dynamical systems towards application in neurophysiological systems, and (2) modeling, analysis, and control of brain circuits underlying neurophysiological and psychiatric disorders. If you are interested in working with me on novel problems at the interface of stochastic control theory and neuroscience, please send your CV to me at gautam.kumar@wustl.edu or ask for details.

Gautam Kumar

Assistant Professor

Department of Chemical and Materials Engineering

University of Idaho, Moscow, ID, USA

<https://scholar.google.com/citations?user=BWgGTuwAAAAJ&hl=en>

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6.7. PhD: University of the Armed Forces, Germany

Contributed by: Gunther Reissig, gunther2014@reiszig.de

PhD: University of the Armed Forces, Munich, Germany

contributed by: Gunther Reissig, gunther2014@reiszig.de

PhD scholarship

Fully automated controller synthesis for UAV missions

Priv.-Doz. Dr. habil. Gunther Reissig

<http://www.reiszig.de/gunther/>

University of the Federal Armed Forces Munich, Germany

Department of Aerospace Engineering

Institute of Control Engineering

Open to applicants worldwide; no special security clearance necessary.

Abstraction-based controller synthesis is a relatively recent approach whose key advantage over classical synthesis methods is that it permits to solve control problems for nonlinear continuous-state plants described by ordinary differential equations in a fully automated, correct-by-construction fashion, even for rather complex control objectives and in the presence of uncertainties and disturbances. The approach relies on finite-state approximations (“abstractions”) of continuous-state plants described by ordinary differential equations. These abstractions are used as substitutes of the original plants in the synthesis process, to reduce the synthesis problem to the solution of an auxiliary, purely discrete synthesis problem. The stipendiary is expected to advance both theory and computational methods to facilitate the practical applicability of the approach to the synthesis of controllers enforcing temporal logic specifications on UAVs. The focus is on

synthesis algorithms that are both efficient and formally correct, and on the reduction of the complexity of the resulting controllers. The project involves theoretical work, algorithm and software development, and, on a small scale, experimental work.

The monthly scholarship is 1575 Euros (tax-free) and is generally awarded for a three-year period. The stipendiary is entitled to participate in training and courses at the Graduate School at Technical University Munich, or through the Graduate Program at the National Aeronautics and Space Research Center (DLR). Additional funding for technical equipment, conferences or publications as well as for rent and public transport can be granted in the amount of 6100 Euros per year. No teaching duties; stipendiary is expected to do research full time.

Required qualifications:

* MSc degree (or equivalent, giving access to doctoral studies) in Electrical Engineering, Computer Science, Mathematics, or a related field. Students about to complete their MSc will also be considered.

* Excellent academic record.

* Strong theoretical background, and a strong interest in dynamical systems and control. * Proficiency in programming (C or Ada).

* Excellent communication skills in English.

In addition, experience in one of the following fields would be a plus: Nonlinear dynamical systems; formal methods in control; reactive synthesis; set-valued or validated numerics; dynamic programming; game theory; modeling and control of UAVs; professional-grade software development.

Your complete application consists of the following documents, which should be sent as a single PDF file to the email address given below (deadline: July 15, 2016):

* CV with photo

* One-page cover letter (clearly indicating available start date, relevant qualifications, experience and motivation)

* University certificates and transcripts (both BSc and MSc degrees)

* English language certificate

* Contact details of up to three referees

* Possibly a list of publications

All documents should be in English, with the exception of university certificates and transcripts, which may also be in German.

Priv.-Doz. Dr. habil. Gunther Reissig

Email: gunther2014@reiszig.de, Subject: PhD ref 1966

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6.8. PostDoc: University of Cape Town, South Africa

Contributed by: Edward Boje, edward.boje@uct.ac.za

Post-Doctoral position in the Department of Electrical Engineering, University of Cape Town, South Africa in one of the following topics

- 1) State estimation for once-through power plant boilers
- 2) Multivariable robust control using Quantitative Feedback Theory
- 3) Quantitative feedback control applied to non-linear systems

Please contact Prof. Edward Boje (edward.boje@uct.ac.za) or visit

<http://www.uct.ac.za/about/intro/vacancies/external/> for further details

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6.9. PostDoc: Huazhong University of Science & Technology, China

Contributed by: Ye Yuan, yy311@berkeley.edu

Prof. Ye Yuan (<http://yy311.github.io>) is looking for a postdoc researcher starting as soon as possible at Huazhong University of Science & Technology, Wuhan, China. The research project is broadly on control theory (system identification or optimization) or its applications to power systems.

We offer

- A competitive salary;
- Possibilities for the Postdoc to spend time at Caltech or Texas A&M to take specialized courses and work with collaborators there;
- Full contract for 2 years with the possibility of renewal up to 5 years contingent on performance.

Your Profile

- A Ph.D. degree in Control Theory, Power Systems, Mathematics, Computer Science, or a closely related field;
- An excellent background in one of the following areas: system identification, control theory, machine learning, power systems.

Interested candidates should send their CV (with names of at least two references) and a cover letter describing their specific interest and how their background fits the qualifications to Prof. Ye Yuan (yy311@berkeley.edu). All applications will be treated in the strictest confidence.

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6.10. PostDoc: Ohio State University, USA

Contributed by: Mingjun Zhang, zhang.4882@osu.edu

Post-doc position in bio-inspired robust control theory

If you were trained in theoretical control, and are interested in making unique contributions in control theory, we have a great opportunity for you. The purpose of this multi-year-sponsored position is to develop novel robust control theory inspired by natural biological systems, and implement the control algorithms for underwater robotics applications through collaborations with experimental researchers. The position requires strong background on mathematical modeling and theoretical control, and ability to extract control principles from broad natural systems through collaborations with the PI and other team members. Interested applicants should send CVs along with 2-3 publications to PI Mingjun Zhang at zhang.4882@osu.edu.

We are employing systems science and mathematics to bio-inspired engineering. The publication link below may provide you some background information about our work. We look forward to your participation to bridge the gap in bio-inspired robust control theory.

<http://mjzhanglab.org.ohio-state.edu/publications.html>

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6.11. PostDoc: Texas A&M University at Qatar, Qatar

Contributed by: Hazem Nounou, hazem.nounou@qatar.tamu.edu

A postdoctoral position in the areas of bioinformatics and computational genomics is open at Texas A&M University at Qatar in Doha. The initial contract is for one year, extendable to several years depending on performance and availability of research funds. The start date of the position is July 1, 2016 or as soon as possible. This position is open only for the candidates who have already achieved a proven publication record in bioinformatics and computational genomics. The offer includes generous housing and health insurance

benefits. The interested candidates are invited to email their CV and the contact information of two persons who can comment on their performance to Professors Hazem Nounou (hazem.nounou@qatar.tamu.edu) and Erchin Serpedin (email: eserpedin@qatar.tamu.edu).

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6.12. PostDoc: Virginia Tech, USA

Contributed by: Cornel Sultan, csultan@vt.edu

Postdoctoral position at Virginia Tech

A postdoctoral position is open at Virginia Tech, Blacksburg, VA, on the topic of model predictive control design for helicopters. The appointment is for variable length with the potential for extension up to 36 months subject to strong performance and availability of funding.

Eligibility and requirements. The ideal candidate will have strong knowledge of model predictive control. Expertise in aerospace vehicle modeling and in particular of helicopters (modeled as multibody systems) is a major plus.

Interested candidates should contact Professor Cornel Sultan (csultan@vt.edu) and include their detailed CV, statement of research and future plans, and a list of three references.

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6.13. PostDoc: CReSTIC, France

Contributed by: Nadhir MESSAI, nadhir.messai@univ-reims.fr

PostDoc: CReSTIC, France

Postdoctoral Position: Distributed diagnosis of Multi-Robot Systems

Job description:

We are seeking a highly motivated postdoctoral scientist to join the CReSTIC laboratory of Reims-Champagne-Ardenne University. The post-doc will be in charge of the project “SUCRÃ©”, which deals with Multi-Robot Systems (MRS) and the research will be done in close collaboration with a PhD student at the CReSTIC.

Mission:

The objective of the postdoc study is to design feasible distributed fault detection and isolation algorithms that allows each robot to detect faults of the other robot of the team. The developed algorithms will then be analyzed, implemented and evaluated in different scenarios using a team of homogeneous robots.

Desired skills/experience:

Applicants should hold a PhD in Automatic control or Electrical Engineering. Ph.Ds in other disciplines will also be considered if relevant research experience is certified.

Applicants should have research experience in at least one of the following topics:

- Control architectures for Multi-Robot systems.
- Distributed estimation and/or diagnosis.
- Multi-agent systems.
- Hybrid systems.
- Networked systems.

Good English writing and verbal communication skills.

Knowledge of Robot Operating System (ROS) is an advantage.

Details and application procedure:

The duration of the contract is for 12 months, the yearly gross salary is 40 000 Euros and the contract conditions will be determined according to standards set by Reims-Champagne-Ardenne University.

Applications should contain a motivation letter, a curriculum vita, a list of publications and the names of at least two referees that can be contacted (all documents should be in pdf format).

Applications should be sent to nadhir messai and noureddine manamanni

({nadhir.messai, noureddine.manamanni}@univ-reims.fr) before July 10th for a contract starting Oct 1rst.

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6.14. PostDoc: Lehigh University, USA

Contributed by: Nader Motee, motee@lehigh.edu

Two Postdoctoral Positions in Large-Scale and Distributed Control and Dynamical Networks. Contact: Prof. Nader Motee (motee@lehigh.edu)

Interested applicants are encouraged to apply for our open positions in Distributed Control and Dynamical Systems (DCDS) Laboratory in the Department of Mechanical Engineering and Mechanics at LehighUniversity. There are several open Postdoctoral positions for Summer 2016, Fall 2016, and Spring 2017. For more information about our group and current research activities, please visit our website at

www.dcds-lab.com

Candidates with strong background in probability theory, stochastic dynamical systems, and graph theory are highly encouraged to apply. Candidate with strong Control Systems background as well as Applied/Pure Mathematical background are highly encouraged to apply.

Lehigh is a premier residential research university, ranked in the top tier of national research universities each year. We are a coeducational, nondenominational, private university that offers a distinct academic environment of undergraduate and graduate students from across the globe. Located in Pennsylvania's scenic Lehigh Valley, the campus is in close proximity to both New York City and Philadelphia. Lehigh is comprised of 2,358 acres, making it one of the largest private universities in the country.

Interested applicants may contact Prof. Nader Motee (motee@lehigh.edu) with the following information: (1) one-page research statement explaining how your background fits our current research group, (2) detailed CV and list of publications, (3) copies of one or two publications. All documents should be in PDF format.

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6.15. PostDoc: University of Oxford, UK

Contributed by: Antonis Papachristodoulou, antonis@eng.ox.ac.uk

Postdoctoral Research Assistant, Department of Engineering Science, University of Oxford

Grade 7: Salary in the range £30,738 - £37,768 p.a.

We seek a Postdoctoral Research Assistant to join the Control Engineering group in Engineering Science (central Oxford). The position is funded by EPSRC and is fixed-term for up to 36 months.

This post is at the interface of Synthetic Biology and Control Engineering. You should have a good first degree in engineering or mathematics and have completed or about to complete a doctorate in control engineering/dynamical systems or mathematical biology. A good publication record commensurate with your stage of career is expected. You must have the organisational skills and initiative to carry out independent research and be able to work as part of an interdisciplinary team. Experience of developing mathematical

algorithms and simulations, in modelling biological systems and in the analysis and design of feedback control systems is essential.

The successful candidate will benefit from an international collaboration with MIT, ETHZ, the Caltech and KAIST as well as Microsoft Research, Cambridge and will become part of the growing and flourishing Synthetic Biology community in Oxford. The work will be partly mathematical, partly computational and will involve close interaction with researchers in the biological sciences.

Informal enquiries may be addressed to Professor Antonis Papachristodoulou (email: antonis@eng.ox.ac.uk). Further information can be found at www.eng.ox.ac.uk/jobs/home

You will be required to upload a covering letter/supporting statement, including a brief statement of research interests (describing how past experience and future plans fit with the advertised position), CV and the details of two referees as part of your online application.

Only applications received before 12.00 midday on 8 July 2016 can be considered.

The Department holds an Athena Swan Bronze award, highlighting its commitment to promoting women in Science, Engineering and Technology.

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6.16. PostDoc: UT-Dallas, USA

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

We are seeking a postdoctoral research fellow to join our multidisciplinary research group, based in the Laboratory for Dynamics and Control of Nanosystems at UT-Dallas. The applicants are expected to have a PhD in a relevant area (or be close to completion), have a strong analytical background and be familiar with advanced control system design techniques. Familiarity with analog electronics design and rapid prototyping systems is a major plus. Familiarity with scanning probe techniques is highly valued.

To be considered, the applicants should send their CVs including a list of publications and names and addresses of three referees to D. Reza Moheimani (contact email: Reza.Moheimani@utdallas.edu).

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6.17. PostDoc: KTH, Sweden

Contributed by: Håkan Hjalmarsson, hakan.hjalmarsson@ee.kth.se

2 PostDocs: KTH, Sweden

The Department of Automatic Control at KTH has two open postdoc positions, expected to take the lead in the development of smart feed designs for biopharmaceutical production and Economic MPC for paper manufacturing. A strong background in process control and/or system identification is required, with experience from bioprocesses considered a bonus. The work will be carried out in close collaboration with our industrial partners ABB Process Automation, ABB Corporate Research, BillerudKorsnäs, GE Healthcare and Cobra Biologics. The positions are initially for one year, but can be extended to two years. For further information contact Prof. Håkan Hjalmarsson (hakan.hjalmarsson@ee.kth.se) or Prof. Elling Jacobsen (Jacobsen@kth.se).

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6.18. PostDoc: Universitat Politecnica de Valencia, Spain

Contributed by: Ramon Blasco-Gimenez, r.blasco@ieee.org

The Institute of Automation and Industrial Informatics of the Universitat Politecnica de Valencia (Spain) welcomes applications for a Post-doctoral position on control of large wind power plants for the integration in HVDC grids.

The successful candidate will carry out his/her research work within the largest European H2020 research project on Energy.

<https://www.promotion-offshore.net>

The duties of the appointed candidate will consist on the development, detailed analysis and validation of control strategies for wind turbines and HVDC converters when connected to HVDC grids by means of Diode Rectifier HVDC stations.

Interested candidates with a demonstrated track record in control of HVDC systems, wind power plants, power electronic converters and/or power systems should send a short resume, along with references to relevant publications, to r.blasco@ieee.org

Your Profile

Hold a Ph.D. degree in Control, Power Electronics or Power Systems, with expertise in one or more of the aforementioned fields.

We offer

Full contract for 1 year with the possibility of renewal up to 3 years contingent on performance.

Due to schedule constraints, only applications from EU Nationals or EU Permanent Residents will be considered.

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6.19. Faculty: Wallenberg Autonomous Systems Program, Sweden

Contributed by: Karl-Erik Arzen, karlerik@control.lth.se

4 Professorships in Autonomous Systems and/or Software in Sweden

Wallenberg Autonomous Systems Program (WASP) is Sweden's largest individual research program ever, and provides a platform for academic research and education, fostering interaction with Sweden's leading technology companies. The program addresses research on autonomous systems acting in collaboration with humans, adapting to their environment through sensors, information and knowledge, and forming intelligent systems of systems. Software is the main enabler in autonomous systems, and is an integrated research theme of the program. WASP aims to build a world leading platform for academic research that interacts with leading companies to develop knowledge and competence for the future.

WASP will strengthen, expand, and renew the national competence through new strategic recruitments, a challenging research program, a national graduate school, and collaboration with industry.

We are now offering four strongly financed Professorships at the coordinating universities Chalmers University of Technology, Linköping University, Lund University, and KTH Royal Institute of Technology. The positions are not specified to specific topics which means that applications from all research areas of WASP are welcome. The positions include post-doc and graduate student funding, and access to well-financed planned autonomous research arenas.

Applications are directed to WASP (<http://wasp-sweden.org/application-for-wasp-professorship>) and are further subject to a decision process at the respective university.

We look forward to your application!

For general information on WASP: <http://wasp-sweden.org>

For general information on working at the involved universities:

Chalmers

KTH

Linköping University

Lund University

For further information on the positions, please contact Lars Nielsen, wasp_professorship@wasp-sweden.se, +46 13 28 11 00.

Application deadline: September 30th, 2016, 23:59 CEST

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6.20. Faculty: University of Groningen, Netherlands

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

University of Groningen

Engineering and Technology Institute Groningen

Tenure Track position in Optimization and Control

Organisation

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

Job description

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

Qualifications

Candidates have:

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

Candidates are:

- team players with good communications skills;
- willing to fulfill the requirements for the University Teaching Qualification;
- willing to learn the Dutch language.

Conditions of employment

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

In addition to the primary salary the University offers 8% holiday allowance and an end-of-year bonus of 8,3%.

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

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

Applications

Interested candidates are invited to submit a complete application including:

- A letter of motivation;
- A Curriculum Vitae, including a list of publications;
- A list of five self selected 'best papers';
- A statement about teaching goals and experience and a description of scientific interest and plans;
- The names of three references complete with title and contact information.

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

Information

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

More information can be found on

<http://www.rug.nl/research/sms>

<http://www.rug.nl/research/enteg>

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

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

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

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

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

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

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

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

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

The position is announced at

<https://www.jobbnorge.no/en/available-jobs/job/127389/professor-associate-professor-in-big-data-cybernetics>, with application deadline on Friday September 30.

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