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Welcome to the 329 issue of the Eletter, available electronically here.
To submit new articles, go "Article Submissions" on the Eletter website
To unsubscribe, please send an email with the subject line "Eletter Unsubscribe".

The next Eletter will be mailed out at the beginning of March 2016.

Contents

1. IEEE CSS Headlines

1.1. IEEE Control Systems Society Call for Nominations for 2016 Awards
Contributed by: Rick Middleton, richard.middleton@newcastle.edu.au

Nominations are open, and due by May 15, for the following IEEE Control Systems Society Awards (see http://www.ieeecss.org/awards for full details). Award nominations should be submitted at awards.paperplaza.net using the nomination form for the relevant award. Details on the process for nomination are available at the individual award pages below. Instructions for using the paperplaza awards nomination system are available here.

- George S. Axelby Outstanding Paper Award (for a paper published in 2014 or 2015 in the IEEE Transactions on Automatic Control);
- IEEE Transactions on Control System Technology Outstanding Paper Award (for a paper published in 2014 or 2015 in the IEEE Transactions on Control System Technology);
- IEEE Control Systems Magazine Outstanding Paper Award (for an article published in 2014 or 2015 in the IEEE Control Systems Magazine);
- IEEE Transactions on Control of Network Systems Outstanding Paper Award (NEW IN 2016: for a paper published in 2014 or 2015 in the IEEE Transactions on Control of Network Systems)
- IEEE Control Systems Technology Award (for outstanding individual or team contributions to control systems technology);
- Control Systems Society Transition to Practice Award (for a distinguished contributor to the transition of control and systems theory to practice);
- Antonio Ruberti Outstanding Young Researcher Prize (for a young researcher for innovation and impact on systems and control).
- IEEE Control Systems Society Award for Excellence in Aerospace Control (NEW IN 2016: for a team or individual contribution to Aerospace Control in the previous 36 months)

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1.2. IEEE Control Systems Society Award for Technical Excellence in Aerospace Control
Contributed by: Kingsley Fregene, kocfrege@ieee.org

Description :
This is a new IEEE CSS Award that will be given annually to a person or team that performed an aerospace control engineering activity during the 36 months preceding the nomination deadline that shows excellence and significant results with demonstrated impact. Examples include: a paper appearing in an IEEE publication that specifically addresses aerospace controls issues, a patent application that significantly advances the state-of-the-art in aerospace controls, innovative products that have appeared on the marketplace and prototypes that have been demonstrated in a relevant operating environment. This award recognizes a specific contribution as opposed to cumulative contributions over a career.

Prize:
Certificate laminated on a plaque, plus a stipend towards expenses for travel to accept the award. If awarded to a group, each group member will receive a plaque and one member will receive partial travel stipend

Eligibility:
IEEE CSS membership is required. Award will be given only if a suitable awardee is identified.

Evaluation Criteria:

Contributions (for instance, papers, products, prototypes and/or patents) will be judged on the following criteria:

- Originality of technical innovation
- Significance or relevance to aerospace controls
- Clear description of the aerospace application
- Potential impact on the practice of aerospace engineering

Presentation:

The award will be presented at the Society Awards Ceremony held during the annual IEEE Conference on Decision & Control.

Nomination:

Nominations for the IEEE CSS Award for Technical Excellence in Aerospace Control open on January 15th 2016 and must be submitted electronically as a package by May 15th 2016, using the CSS online awards nomination system at http://www.ieeecss.org/awards, including:

- A letter from the nominator describing the outstanding features of the nominee(s).
- Up to four additional supporting letters from individuals who are familiar with the nominee(s).

1.3. 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.

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

Table of Contents
IEEE Transactions on Automatic Control
Volume 61 (2016), Issue 2 (February)

Please note that the contents of the IEEE Transactions on Automatic Control, together with links to the abstracts of the papers may be found at the TAC web site: http://www.nd.edu/~ieeetac/contents.html

 - Scanning-the-Issue p. 285

Papers

 - A Parametric Non-Convex Decomposition Algorithm for Real-Time and Distributed NMPC, J-H. Hours, C. N. Jones, p. 287
 - A Framework for Structural Input/Output and Control Configuration Selection in Large-Scale Systems, S. Pequito, S. Kar, A. P. Aguiar, p. 303

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

Table of Contents
IEEE Transactions on Control of Network Systems
Volume 2 (2015), Issue 4 (December)

The contents of the IEEE-Transactions on Control of Network Systems, with links to the abstracts of the papers are available on http://sites.bu.edu/tcns/home/december-2015/

1.6. IEEE Conference on Decision and Control
Contributed by: Francesco Rossi, francesco.rossi@lsis.org

55th IEEE Conference on Decision and Control
December 12-14, 2016, Las Vegas, NV, USA
http://cdc2016.ieeecss.org/

The 55th IEEE Conference on Decision and Control will be held Monday through Wednesday, December 12-14, 2016 at the ARIA Resort & Casino, Las Vegas, NV, USA. The conference will be preceded by technical workshops on Sunday, December 11, 2016.

The CDC is recognized as the premier scientific and engineering conference dedicated to the advancement of the theory and practice of systems and control. The CDC annually brings together an international community of researchers and practitioners in the field of automatic control to discuss new research results, perspectives on future developments, and innovative applications relevant to decision making, automatic control, and related areas. The 55th CDC will feature contributed and invited papers, as well as tutorial sessions and workshops.

Bode Lecturer: Richard M. Murray

Semi-Plenary Speakers :
Andrew G. Alleyne
Christos G. Cassandras
Angelia Nedich
Pierre Rouchon

Important Dates (2016):
Invited Session Proposals Due: March 7 Initial Submissions Due: March 15
Workshop Proposals Due: May 2
Decision Notification: End-July
Registration Opens: August 1
Best Student Paper Award Nomination Due: August 24
Final Submissions Due: Mid-September

For more information, visit http://cdc2016.ieeecss.org/

1.7. IEEE Multi-Conference on Systems and Control
Contributed by: Felice Andrea Pellegrino, fapellegrino@units.it

IEEE Multi-Conference on Systems and Control 2016
September 19-22, 2016
NH City & Towers Hotel, Buenos Aires, Argentina
http://www.msc2016.org

The 2016 IEEE Multi-Conference on Systems and Control (MSC 2016) will take place in NH City & Towers Hotel, Buenos Aires, during September 19-22, 2016. MSC 2016 includes three international conferences sponsored by the IEEE Control Systems Society:
The IEEE Conference on Control Applications (CCA)
The IEEE International Symposium on Intelligent Control (ISIC)
The IEEE Conference on Computer Aided Control System Design (CACSD)

MSC 2016 areas of interest traditionally include a wide range of topics in control systems, technology, and applications. This year, in addition to such topics, we would like to address new and emerging research areas in control, such as cyber-physical systems, robotics, intelligent autonomous systems, computational

intelligence, architectures for intelligent control, control inspired by systems biology, vision in control, and control theory in psychology and sociology, as well as application of control theory in economics, next generation healthcare and healthcare delivery. Papers on control applications in new energy resources, and in energy grid control are welcome, as well as on networked control systems and cloud computing in control applications.

MSC 2016 will be a three-day event, preceded by a full day of Tutorials and Workshops. The conference proceedings will be included in IEEE Xplore and indexed by INSPEC and Ei-Compendex.

IMPORTANT DATES

April 15, 2016: Contributed papers, Invited session proposals, Invited papers, Workshop proposals deadline

July 1, 2016: Notification of Acceptance/Rejection

July 15, 2016: Final submission and advance registration deadline.

All papers and session proposals must be submitted through the conference submission website http://css.paperplaza.net and must conform to the policy found at the conference web page requiring, in particular, that all submissions must be written in English.

More details can be obtained from the conference website: http://www.msc2016.org

1.8. 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:

- 14th International Conference on Control, Automation, Robotics and Vision (ICARCV 2016). Phuket, Thailand. Nov 13 - Nov 15, 2016. http://www.icarcv.org/2016

- 2016 5th International Conference on Systems and Control (ICSC'16). Marrakech, Morocco. May 25 - May 27, 2016. http://lias.labo.univ-poitiers.fr/icsc/icsc2016/

- 14th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks. Tempe, United States, May 9 - May 13, 2016. http://www.wi-opt.org/

- 12th World Congress on Intelligent Control and Automation (WCICA 2016). Guilin, China. Jun 12 - Jun 17, 2016. http://wcica2016.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

2. Journals

2.1. Contents: Automatica
Contributed by: Elisa Capello, automatica@polito.it

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Automatica

Vol. 64, Febuary 2016

http://www.sciencedirect.com/science/journal/00051098/64

2.2. Contents: Control Engineering Practice
Contributed by: Tobias Glück, cep@acin.tuwien.ac.at

2.3. Contents: IEEE/CAA Journal of Automatica Sinica
Contributed by: Yan Ou, yan.ou@ia.ac.cn

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IEEE/CAA Journal of Automatica Sinica

Volume 3 (2016), Issue 1 (January)

Review Papers

Papers

Brief Papers

2.4. Contents: Asian Journal of Control
Contributed by: Fu Li-Chen, lichen@ntu.edu.tw

Asian Journal of Control

Vol.18, No.1 January, 2016

CONTENTS

Special Issue on "Recent Developments on Modeling and Control of Hybrid Electric Vehicles"

10. Control of Natural Oscillation Gait for Mechanical Locomotors in Three Dimensional Space, Junping Zhang, Lijun Zhu and Zhiyong Chen

11. Trajectory Linearization Control Based Output Tracking Method for Nonlinear Uncertain System Using Linear Extended State Observer, Shao Xingling and Wang Honglun

12. Stabilization of Singular Markovian Jump Systems by Generally Observer-based Controllers, Guoliang Wang and Haiying Bo

13. A Novel Robust MM Filter Against Outliers, Yong Liu, Yan Liang, Zhun-Ga Liu and Quan Pan

[Brief Paper]

1. Formation Tracking Control of Multi-Vehicle Systems, Runsha Dong and Zhiyong Geng

2. A Global Detectability Condition for Consensus Tracking of Linear Multi-Agent Systems with Stochastic Disturbances, Miao Diao, Zhisheng Duan and Guanghui Wen

3. Output Swarm Stability and Stabilization for High-Order Linear Swarm Systems, Jianxiang Xi, Hao Liu, Zhiyong Yu, Bailong Yang and Guangbin Liu

4. Fault Detection for Linear Discrete Time-Varying Systems with Intermittent Observations and Quantization Errors, Yueyang Li, Shuai Liu and Zhonghua Wang

5. A New Model of Networked Control Systems in Robust Control Framework, Kai Wen, Zhiyong Geng, Zhenyong Zhang and Lijia Zhang

6. A Novel Evolution Kalman Filter Algorithm for Short-Term Climate Prediction, Qingyu Yang, Dou An and Yuanli Cai

7. Design of a Class of Sliding Mode Observer with Time-Varying Delay, Fa-Xiang Xie and Bo-Hai Ji

2.5. 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 technological 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:

March 15, 2016 Deadline for submissions

June 30, 2016 Completion of First Review

October 31, 2016 Completion of Final Review

November 30, 2016 Receipt of Final Manuscript

March 1, 2017 Publication (Tentatively Vol.19, No. 2)

2.6. CFP: Asian Journal of Control
Contributed by: Fu Li-Chen, lichen@ntu.edu.tw

CALL FOR PAPERS

Special Issue on "Theoretical and Practical Challenges in Learning Control"

http://www.ajc.org.tw

Learning control, including iterative learning control (ILC) and repetitive learning control (RLC), has been widely used in industry such as chemical reactors, batch processes, robotic manipulators, high precision CNC machining, hard disc drives, milling and laser cutting, traffic flow control systems, and rehabilitation robotic systems. Although learning control algorithms have been successfully applied to various engineered applications, there are still many challenges including the fundamental problem of robust design in the presence of model uncertainty, disturbance and noise, novel applications and the development of new analysis tools.

This special issue invites original articles that address both theoretical and application-oriented challenges in the area of learning control, including novel applications, performance improvement along iteration domain and time domain, new analysis tools, and any related technologies in learning control. Topics of potential interest include, but are not limited to:

1. Robust design methods

2. Performance improvement

3. New stability/convergence analysis tools

4. Novel applications

Guest Editors:

Prof. Ying Tan
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Electronic Engineering University of
Melbourne, VIC 3010, Australia
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Prof. Kira Barton
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Engineering University of
Michigan, United States
Email: bartonkl@umich.edu

Important Dates:

March 31, 2016 Deadline for submissions

July 31, 2016 Completion of First Review

November 30, 2016 Completion of Final Review

December 31, 2016 Receipt of Final Manuscript

July 1, 2017 Publication (Tentatively Vol.19, No. 4)

3. Conferences

3.1. International Conference on Event-Based Control, Communication, and Signal Processing
Contributed by: Antonio Visioli, antonio.visioli@unibs.it

EBCCSP 2016

Second International Conference on Event-Based Control, Communication, and Signal Processing

Krakow, Poland; 13-15 June 2016

Web site: http://www.ebccsp2016.org

Call for regular, special sessions, & work in progress papers

Submission Deadline: February 14, 2016

Keynotes:

Jerker Delsing, Luleå University of Technology, Sweden

Sebastián Dormido, UNED, Madrid, Spain

Shih-Chii Liu, UZH-ETH Zurich, Switzerland

Roman Obermaisser, University of Siegen, Germany

The aim of the EBCCSP conference series is to provide a platform for the research communities that work in diverse application areas of the event-based paradigm to exchange new research results and ideas to explore synergies and foster scientific advancement.

Main topics submission areas:

- Event-based control & systems
- Event-based communication, computing & systems
- Event-based signal processing & systems
- Discrete event systems

Solicited papers:

Research papers reporting on new developments in technological sciences. Industry and development papers reporting on actual developments of technology, products, systems and solutions. Tutorial and survey papers. Work-in-progress papers. In addition, EBCCSP 2016 solicits proposals for special session in areas relevant to the conference themes. Please consult the conference web page for more details.

Submission types:

Two types of submissions are solicited: Long Papers (regular and special sessions) - 8 double-column pages. Work-in-Progress Papers - limited to 4 double-column pages.

Important dates

Deadline for submission of regular and special sessions papers February 14, 2016

Notification of acceptance of regular and special sessions papers March 13, 2016

Deadline for submission of work-in-progress papers March 20, 2016

Notification of acceptance of work-in-progress papers April 10, 2016

Final manuscripts due - regular and special sessions May 1, 2016

Final manuscripts due - work-in-progress papers May 1, 2016

Call for workshops

Proposals are sought for workshops to address cutting edge research and developments in technological sciences in the technical scope of the EBCCSP 2016 Conference. The Workshop Day will be held on June 15, 2016. For details see the web site.

Contact information

E-mail: ebccsp16@agh.edu.pl

Phone: + 48 12 617 3034

3.2. IFAC Workshop on Distributed Estimation and Control in Networked Systems
Contributed by: Hideaki Ishii, ishii@dis.titech.ac.jp

NecSys 2016

6th IFAC Workshop on Distributed Estimation and Control in Networked Systems

September 8-9, 2016, Tokyo, Japan

http://www.sc.dis.titech.ac.jp/necsys2016/

Invitation:

NecSys 2016 will be held at the Tokyo International Exchange Center, Plaza Heisei, Tokyo, Japan. It is located on the island Odaiba, which is only a few stations away from the core of downtown Tokyo, and is part of the Tokyo Academic Park.

Context and Scope:

Networked Systems and complex dynamical systems are composed of a large number of simple systems

interacting through a communication medium. These systems arise as natural models in many areas of engineering and sciences, such as sensor networks, autonomous, unmanned vehicles, power networks, biological networks, and animal cooperative aggregation.

The workshop will focus on the most innovative mathematical methods proposed in the last few years for the analysis and design of networked systems. The aim of this workshop is to bring together researchers from control, computer science, communication, game theory, statistics, mathematics and other areas to discuss emerging topics in networked systems of common interest.

3.3. 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.

AIP Conference Proceedings are indexed in:
- Astrophysics Data System(ADS)
- Chemical Abstracts Service (CAS)
- Crossref
- EBSCO Publishing
- Electronic Library Information Navigator (ELIN), Sweden
- Elsevier - SCOPUS
- International Atomic Energy Agency (IAEA)
- Thomson Reuters (ISI)

3.4. Mediterranean Conference on Control and Automation
Contributed by: Didier THEILLIOL, didier.theilliol@univ-lorraine.fr

New Submission Deadline - February 15, 2016
24th Mediterranean Conference on Control and Automation - MED'16
Athens, Greece
June 21-24, 2016
http://www.med2016.org

Important Dates/Deadlines:
Full Papers / Invited Sessions / Tutorial Proposals: February 15, 2016
Acceptance / Rejection Notification: April 15, 2016
Upload Final, Camera Ready Papers: May 6, 2016
Early Registration: April 15 - May 6, 2016

The theme of MED'16 centers on control and automation challenges and opportunities in the 21st century and on control of autonomous systems. MED'16 spans four full days. June 21 is devoted to Tutorials and Workshops, followed by the three day technical conference on June 22-24. The conference, through its technical program and keynote presentations, will provide a unique opportunity for the academic, research and industrial community to address new challenges, share solutions and discuss future research directions. A broad range of topics is proposed, following current trends of combining control and systems theory with hardware/software and communication technologies, as well as new developments in robotics and mechatronics, autonomous systems, unmanned systems, cyber physical systems, network controlled systems, with the goal of strengthening cooperation of control and automation scientists with industry.

For topics of interest please visit the conference website.

Paper Submission:
The Program Chairs are soliciting contributed technical papers for presentation at the Conference and publication in the Conference Digital Proceedings. All papers must be submitted and uploaded electronically. Go to https://controls.papercept.net. Click on the link "Submit a Contribution to MED'16" and follow the steps. The paper format must follow IEEE paper submission rules, two-column format using 12 point fonts, Times New Roman. The maximum number of pages per submitted paper is 6. Up to two additional pages will be permitted for a charge of 100 euro per additional page. Illustrations and references are included in the page count.

Invited and Special Sessions:
Proposals for invited and special sessions by topic of interest must be submitted and uploaded electronically. A Summary Statement describing the motivation and relevance of the proposed session, invited paper titles and author names must be uploaded electronically by February 1, 2016. In addition, authors must submit full versions of invited papers electronically, through https://controls.papercept.net. Each such paper must be marked as 'Invited Session Paper'.

Workshops - Tutorials:
Proposals for workshops - tutorials should contain the title of the session, the list of speakers, and extended summaries (2000 words) of their presentations. Proposals must be sent by e-mail to the Tutorial and Workshop Chair by February 1, 2016.

Paper Review Process:
All submitted papers will undergo a peer review process coordinated by the Program Chairs, Advisory Committee Members, IPC members and qualified reviewers. Authors are encouraged to accompany their

presentations with multimedia material (i.e., videos), which will be included in the Conference Digital Proceedings. Conference Proceedings will be acquired by IEEE and they appear in IEEE Xplore.

For information and details about the Conference, contact by e-mail the General or Program Chairs.

3.5. International Conference on Instrumentation, Control and Automation
Contributed by: Tua Tamba, tamba@instrument.itb.ac.id

Call-for-Papers: The 4th International Conference on Instrumentation, Control and Automation 2016 (ICA'16)
Dates & Location: August 29-31, 2016; Bandung, Indonesia
Technical co-sponsor: IEEE Indonesia Section
Website: http://ica2016-itb.org

On behalf of the ICA'16 Organizing Committee, this is to invite you to submit your contributions to the 4th International Conference on Instrumentation, Control and Automation 2016, ICA'16, http://ica2016-itb.org/, which will be held in Bandung, Indonesia during August 29-31, 2016. The conference is technically co-sponsored by the IEEE Indonesia Section and fully organized by the Instrumentation & Control Research Group at the Institut Teknologi Bandung, Indonesia. Details of the conference may be found at http://ica2016-itb.org.

The biennial ICA conference is aimed at enhancing a strong networking and creating an international platform to ease knowledge transfer among engineers, researchers, and scientists within relevant areas of instrumentation, control, and automation systems. We invite affiliated scholars, researchers, students and practicing professionals to participate in the ICA 2016 conference by submitting papers on various topics related to instrumentation, control, and automation systems.

Conference topics include (but not limited to):
(i) INSTRUMENTATION: Metrology, Optical Instrumentation, Ultrasonic Instrumentation, Bioengineering & Systems Biology, Medical Instrumentation, Non-invasive Instrumentation & Measurement Techniques, Tomography & Imaging Instrumentation, Industrial Process Instrumentation, Energy & Power Systems Instrumentation, Software Development for Measurement & Instrumentation Supports;
(ii) CONTROL: PID Control, Linear/Nonlinear Analysis & Control, Multivariable Control, Model Predictive Control, Robust Control, Distributed Control, Geometric Control, Networked Control Systems, Intelligent & Learning-based Control, Optimal Control, Stochastic Control, Neural Networks, Process Control, System Theory, Hybrid Dynamical Systems & Discrete Event Systems, Simulation Methods, System Identification & Filtering, Parameter & State Estimation, Robotics & Motions, Space Vehicles & Aircraft Systems, Design & Control of Unmanned Systems, Signal Processing, Game Theory, Adaptive Control, Artificial Intelligence, Fuzzy & Expert Systems, Fault Detection & Isolation System, Analysis & Control of Biological Systems;
(iii) AUTOMATION: Human Machine Interaction, Safety Instrumented Systems, Process Automation, Asset & Data Management Systems, Manufacturing Systems, Supply Chain Network, Precision Motion, CAD-based Simulations & Control, Computer Integrated Manufacturing, Automation in Biotechnology & Health Systems, DNA Chip Fabrication & Screening.

Important Dates:
Submission site open: January 11, 2016
Initial submission due: April 15, 2016
Decision notification: May 31, 2016
Final submission due: July 15, 2016
Conference dates: August 29-31, 2016

Paper Submission:
All papers must be submitted and uploaded electronically. Go to https://edas.info/N21139. Click on the link "Submit a Contribution to ICA'16" and follow the steps.

3.6. International Conference on Swarm Intelligence
   Contributed by: Carlo Pinciroli, ilpincy+ants@gmail.com

ANTS 2016
Tenth International Conference on Swarm Intelligence
September 7-9, 2016. Brussels, Belgium

Call for papers prepared on October 5, 2015
More details and up-to-date information at: http://iridia.ulb.ac.be/ants2016

Scope of the Conference
Swarm intelligence is the discipline that deals with the study of self-organizing processes both in nature and in artificial systems. Researchers in ethology and animal behavior have proposed a number of models to explain interesting aspects of social insect behavior such as self-organization and shape-formation. Recently, algorithms and methods inspired by these models have been proposed to solve difficult problems in many domains. An example of a particularly successful research direction in swarm intelligence is ant colony optimization, the main focus of which is on discrete optimization problems. Ant colony optimization has been applied successfully to a large number of difficult discrete optimization problems including the traveling salesman problem, the quadratic assignment problem, scheduling, vehicle routing, etc., as well as to routing in telecommunication networks. Another interesting approach is that of particle swarm optimization, that mainly focuses on continuous optimization problems. Here too, a number of successful applications can be found in the recent literature. Swarm robotics is another relevant field. Here, the focus is on applying swarm intelligence techniques to the control of large groups of cooperating autonomous robots.
ANTS 2016 will give researchers in swarm intelligence the opportunity to meet, to present their latest research, and to discuss current developments and applications.
The three-day conference will be held in Brussels, Belgium, on September 7-9, 2016.

Relevant Research Areas
ANTS 2016 solicits contributions dealing with any aspect of swarm intelligence. Typical, but not exclusive, topics of interest are:
- Behavioral models of social insects or other animal societies that can stimulate new algorithmic approaches.
- Empirical and theoretical research in swarm intelligence.
- Application of swarm intelligence methods, such as ant colony optimization or particle swarm optimization, to real-world problems.
- Theoretical and experimental research in swarm robotics systems.

Publication Details
Conference proceedings will be published by Springer in the LNCS. series.
The journal Swarm Intelligence will publish a special issue dedicated to ANTS 2016 that will contain extended versions of the best research works presented at the conference. Further details will soon be published on the web site.

Conference Location
Auditorium R42.4.502, Solvay Brussels School of Economics and Management, Campus du Solbosch, Université Libre de Bruxelles, Av. F.D. Roosevelt 42, 1050 Brussels, Belgium.

Best Paper Award
A best paper award will be presented at the conference.

Further Information
Up-to-date information will be published on the web site http://iridia.ulb.ac.be/ants2016/. For information about local arrangements, registration forms, etc., please refer to the above-mentioned web site or contact the local organizers at the address below.

Conference Address
ANTS 2016
IRIDIA CP 194/6 Tel +32-2-6502729
Université Libre de Bruxelles Fax +32-2-6502715
Av. F. D. Roosevelt 50 http://iridia.ulb.ac.be/ants2016
1050 Bruxelles, Belgium email: ants@iridia.ulb.ac.be

Important Dates
Submission deadline March 2, 2016
Notification of acceptance May 4, 2016
Camera ready copy May 18, 2016
Conference September 7-9, 2016

3.7. International Workshop on Symbolic and Numerical Methods for Reachability Analysis
Contributed by: Sergiy Bogomolov, sergiy.bogomolov@ist.ac.at

CALL FOR PAPERS (Deadline extension)
2nd International Workshop on Symbolic and Numerical Methods for Reachability Analysis (SNR 2016)
April 11th, 2016, Vienna, Austria
Affiliated with CPSWeek 2016
https://snr2016.pages.ist.ac.at/

Important Dates
Submission deadline: *February 3*, 2016
Notification: March 9, 2016
Final version: March 16, 2016
Workshop date: April 11, 2016

Scope
Hybrid systems are complex dynamical systems that combine discrete and continuous components. Reachability questions, regarding whether a system can run into a certain subset of its state space, stand at the core of verification and synthesis problems for hybrid systems.

There are several successful methods for hybrid systems reachability analysis. Some methods explicitly construct flow-pipes that overapproximate the set of reachable states over time, where efficient computation of such overapproximations requires symbolic representations such as support functions. Other methods based on satisfiability checking technologies, symbolically encode reachability properties as logical formulas, while solving such formulas requires numerically-driven decision procedures. Last but not least, also automated deduction and the usage of theorem provers led to efficient analysis approaches. The goal of this workshop is to bring together researchers working with different reachability analysis techniques and to seek for synergies between symbolic and numerical approaches.

The SNR workshop solicits papers broadly in the area of verification and synthesis of continuous and hybrid systems. The scope of the workshop includes, but is not restricted to, the following topics:
- Reachability analysis approaches for hybrid systems
- Flow-pipe construction; symbolic state set representations
- Trajectory generation from symbolic paths; counterexample computation
- Abstraction techniques for hybrid systems
- Reliable integration
- Decision procedures for real arithmetic
- Automated deduction
- Logics to reason about hybrid systems
- Reachability analysis for planning and synthesis
- Domain-specific approaches in biology, robotics, etc.
- Stochastic/probabilistic hybrid systems

Submission Information

The workshop solicits long (maximal 10 pages) and short research papers (maximal 6 pages). Submissions must present original unpublished work which is not submitted elsewhere. In order to foster the exchange of ideas, we also encourage work-in-progress (WiP) papers (maximal 6 pages). They should present recent/on-going work.

The papers should be written in English and formatted according to the IEEE guidelines for conference proceedings (http://www.ieee.org/conferences_events/conferences/publishing/templates.html).

Papers can be submitted using the EasyChair system: http://easychair.org/conferences/?conf=snr2016

All submissions will undergo a peer-reviewing process.

Accepted research papers (i.e., except for WiP papers) will be published electronically in the IEEE Xplore Digital Library (http://ieeexplore.ieee.org/Xplore/home.jsp).

Invited Speakers

Stylianos Basagiannis (United Technologies Research Center, Ireland)

Thao Dang (Verimag, France)

3.8. International Workshop on Applied Verification for Continuous and Hybrid Systems
Contributed by: Sergiy Bogomolov, sergiy.bogomolov@ist.ac.at

2nd Call for Submissions

3rd International Workshop on Applied Verification for Continuous and Hybrid Systems
CPSWeek 2016, Vienna, Austria, April 11, 2016
http://cps-vo.org/group/ARCH

The workshop on applied verification for continuous and hybrid systems (ARCH) brings together researchers and practitioners, and establishes a curated set of benchmarks submitted by academia and industry. Verification of continuous and hybrid systems is increasing in importance due to new cyber-physical systems that are safety- or operation-critical. This workshop addresses verification techniques for continuous and hybrid systems with a special focus on the transfer from theory to practice. Topics include, but are not limited to
- Proposals for new benchmark problems (not necessarily yet solvable)
- Tool presentations
- Tool executions and evaluations based on ARCH benchmarks
- Experience reports including open issues for industrial success

Researchers are welcome to submit examples, tools and benchmarks that have already appeared in brief form, but whose details were omitted. The online benchmark repository allows researchers to include modeling details, parameters, simulation results, etc. Submissions are encouraged, but not required, to include executable data (models, configuration files, code etc.). It is not required to show that the benchmark has a solution; it suffices that the problem is described in enough detail that somebody else can try to solve it.

Prize

The paper with the most promising benchmark results receives a prize of 500 Euros sponsored by Robert Bosch GmbH, Germany. The winner is preselected by the program committee and determined by an audience voting.

General Submission Guidelines

Submissions consist of papers (ideally 3-8 pages) and optional files (e.g. models or traces) submitted through the ARCH'16 EasyChair web site at https://easychair.org/conferences/?conf=arch16.

ARCH16 will provide proceedings in the EasyChair EPiC series, indexed by DBLP. Authors should use the EasyChair template at http://www.easychair.org/publications/for_authors. The papers have to be classified below their title as benchmark proposal, tool presentation, benchmark results, or experience report by writing the classification in parentheses in a line below the title. Submissions receive at least 3 anonymous reviews, including one from industry and one from academia.

A zip archive with additional data for the benchmark (description details, model files, sample traces, code, known results, etc.) is to be submitted together with the extended abstract. Benchmarks can be academic or industrial, of small size or extensive case studies.

Important Dates

Submission deadline February 15, 2016

Notification of acceptance March 7, 2016

Final version March 31, 2016

Workshop April 11, 2016

3.9. International Conference on Powertrain Modelling and Control
Contributed by: Kambiz Ebrahimi, k.ebrahimi@lboro.ac.uk

3rd International Conference on Powertrain Modelling and Control

Testing, Mapping and Calibration

8-9 September 2016, Loughborough, England

Aim:

The aim of the conference is to bring together researchers and practitioners from the industry and academia and provide them with a platform to report on recent advances and developments in the newly emerging areas of powertrain modelling for control and calibration, as well as actual and potential applications in powertrain mapping and testing.

Prof K M Ebrahimi

Aeronautical and Automotive Engineering

Loughborough University,

00 44 1509 227289

k.ebrahimi@lboro.ac.uk

www.pmc2016.net

3.10. Indian Control Conference
Contributed by: M. Vidyasagar, M.Vidyasagar@utdallas.edu

The Third Indian Control Conference will be held in the Indian Institute of Technology Guwahati during January 4-6, 2017 (Wednesday through Friday). The paper submission deadline is May 15, 2016. Please see icc.org.in for details of the recently concluded Second Indian Control Conference. The web site will be revamped shortly to give information about ICC2017. Papers are to be submitted through controls.papercept.net

3.11. Conference on Automation Science and Engineering
Contributed by: Rong Su, rsu@ntu.edu.sg

Call for contributions to 12th Conference on Automation Science and Engineering (IEEE CASE 2016)

The twelfth annual IEEE International Conference on Automation Science and Engineering (IEEE CASE 2016) will be held in Fort Worth Texas, USA, August 21 to 24, 2016. IEEE CASE is the flagship automation conference of the IEEE RAS and constitutes the primary forum for cross-industry and multidisciplinary research in automation. Its goal is to provide a broad coverage and dissemination of foundational research in automation among researchers, academics, and practitioners.
The technical program of IEEE CASE 2016 will consist of tutorials/workshops, keynote/plenary speeches, automation forums, and oral presentations. Papers describing original work on abstractions, algorithms, theories, methodologies, and case studies are invited. Accepted and presented papers will be published in the conference proceedings, and submitted for inclusion into IEEEXplore as well as other Abstracting and Indexing (A&I) databases. IEEE CASE is an offspring of the journal IEEE Transactions on Automation Science and Engineering (www.ieee.org/publications/t-ase). The journal will publish a Special CASE Issue of top-rated papers.
CASE 2016 will be held in conjunction with the IEEE International Symposium on Assembly and Manufacturing (ISAM). The organizing committee of CASE and ISAM 2016 cordially invite you to submit full paper contributions through Paper Plaza January 7 through March 6, 2016. Proposals for workshop, tutorials and special sessions are accepted through February 21, 2016.
In addition, we are happy to announce that starting in 2016, the editorial board of Robotics and Automation Letters (RA-L) (www.ieee-ras.org/publications/ra-l) will accept submissions in conjunction to CASE/ISAM January 7 through March 1, 2016.

Theme
Automation for Everyone
CASE 2016 will focus on innovative and promising applications of automation in the home, office, factory and healthcare environments. Particular attention to: reliable robotics, networked energy systems, assistive technologies, internet of things, sustainable healthcare systems, automated transportation, big data analytics and disaster management.
For researchers who are interested in organising invited sessions, please contact Dr Rong Su, an invited session chair of IEEE CASE'16, at rsu@ntu.edu.sg for more information about the submission procedure.

3.12. International Conference on Control, Automation and Systems
Contributed by: ICCAS2016, conference@icros.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 16-19, 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

May 6, 2016: Submission of organized session proposals

May 13, 2016: Submission of full papers

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)

Organizing Chair: Soon-Geul Lee (Kyung Hee Univ., Korea)

Program Chair: Kang-Hyun Jo (Univ. of Ulsan, Korea)

The City of Gyeongju has an important and rich history. For centuries, the city served as the capital of the Silla Dynasty (57-935 BC), the longest period of reign in the history of Korea. These ancient relics are such an integral part of the landscape that the whole city has been designated a UNESCO World Cultural Heritage and the city is commonly known as the "museum without walls" thanks to the many artifacts found throughout the city.

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

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

3.13. IFAC Conference on Control Applications in Marine Systems
Contributed by: Vahid Hassani, vahid.hassani@ntnu.no

IFAC CAMS 2016,

10th IFAC Conference on Control Applications in Marine Systems

Trondheim, Norway, September 13-16, 2016

CAMS 2016 website: http://www.ifac-cams2016.com

Download the CFP: http://www.ifac-cams2016.com/uploads/3/6/2/5/3625146/cfp_cams_2016.jpg

Paper submission is open from papercept http://ifac.papercept.net/conferences/scripts/start.pl#CAMS16

Since 1989, every three years the International Federation for Automatic Control (IFAC) has organized a Conference on Control Applications in Marine Systems (CAMS). CAMS returns to Trondheim after 21 years and will be organized by the Norwegian University of Science and Technology (NTNU) in cooperation with

the Norwegian Society of Automatic Control (NFA), the national member organization for Norway in the IFAC.

CAMS 2016 will provide an excellent opportunity for the presentation and discussion of research results and development in the areas of control applications for surface & underwater vessels, floating & sub-sea structures, and other marine systems.

CAMS 2016 will provide an excellent opportunity for industry, universities and research facilities to explore the future trends in application of control theory to marine systems, and to establish new and innovative activities for applying advanced solutions to marine systems.

The keynote speakers for CAMS 2016 will include Prof. John J. Leonard (Massachusetts Institute of Technology), Prof. Jing Sun (University of Michigan), Prof. Maarja Kruusmaa (Tallinn University of Technology), Dr. Nils Albert Jenssen (Kongsberg), Prof. Zoran Vukic (University of Zagreb), Prof. Mark Moline (University of Delaware).

Areas and Topics (including but not limited to)

- Guidance, navigation and control (GNC) of marine vessels and unmanned marine vehicles
- Modeling, identification, simulation, and control of marine systems
- Ship roll stabilization techniques
- Modeling and control of high speed-craft
- Fault-tolerant control and fault handling for marine vehicles
- Intelligence and autonomy in marine systems and operations
- Cooperative navigation and control in marine systems
- Marine robotics and biomimicry
- Maritime safety and security for ports and ships
- Risk and life cycle assessment in marine systems
- Actuators, thrusters, propulsion systems, and sensors in marine systems
- Hybrid power plants in marine systems
- Surveillance and supervision systems in marine applications
- Control applications in aquaculture
- Control applications in marine renewable energy
- Condition-based monitoring in marine systems
- Applications of autonomous and remotely operated (surface and underwater) marine vessels
- Applications of marine vessels and robotics to environmental monitoring, mapping and surveillance, search and rescuing operations, marine habitat mapping, marine biology and geology, and hydrographic exploration

Important dates:

- Submission site opens: December, 2015
- Invited session proposal deadline: February 15, 2016
- Paper submission deadline: March 21, 2016

Submission Procedure:

To submit a paper, please follow the link "Submission" located on the top line of the conference website or directly under the papercept link: http://ifac.papercept.net/conferences/scripts/start.pl#CAMS16

Proposals for Invited Sessions are welcome and should be sent by email to the Technical Program Chair by February 15th 2016. The proceedings of the Symposium will be published on-line on the http://www.ifac-papersonline.net website.

For further information on CAMS 2016 please contact the Technical Program Chair vahid.hassani@ntnu.no or cams@ifac-cams2016.com

3.14. IFAC Conference on Cyber-Physical&Human-Systems
Contributed by: Mariana Netto, mariana.netto@ifsttar.fr

1st IFAC Conference on Cyber-Physical&Human-Systems

7-9 December 2016, Florianopolis, Brazil

CPHS 2016 website and pdf call for papers: http://www.cphs2016.org/

Deadline for paper submission: April 20, 2016.

IFAC TC main sponsor and co-sponsors:

TC 9.2 Social Impact of Automation (main sponsor), TC 1.3 Discrete Event and Hybrid Systems, TC 1.4 Stochastic Systems, TC 1.5 Networked Systems, TC 3.1 Computers for Control, TC 3.3 Telematics: Control via Communication Networks, TC 4.3 Robotics, TC 4.5 Human Machine Systems, TC 7.3 Aerospace, TC 7.4 Transportation Systems, TC 8.2 Biological and Medical Systems, TC 9.5 Technology, Culture and International Stability.

Scope:

The computer and internet revolution has dramatically widened the possibilities in control solutions for human needs. Cyber-physical systems (CPS) appeared as an evolution starting from embedded systems and then evolving to networked systems. CPS are now an ICT priority, and their relationship with humans represents a central aspect. Indeed, human relationships with highly automated and networked systems which have complex dynamics and complex controllers, or the design of complex control systems to assist humans, has become a topic of major importance with requirements to understand and progress. Advances in the related challenges require comprehensive study that in most cases can only be accomplished via multidisciplinary collaboration that needs to include specialists in cognition, ergonomics, social sciences, computer and control sciences, as well as many other experts. More details on the scope can be found in http://www.cphs2016.org/scope-topics/.

Topics: in CPHS 2016, different application areas are considered, according to four scenarios, as follows :

1. Human-Machine Symbiosis (smart prosthetics, neurostimulation, exoskeletons, biomedical implants)

2. Humans as operators of complex engineering systems (aircraft control, human-machine interaction in aircraft, automotive cooperated control (ADAS), process plant operation, robotic surgery, spacecraft control, control in hazardous environments, automated or semi-automated trains, remote operation of robotic teams e.g. in rescue scenarios, ..)

3. Humans as agents in multi-agent systems (intelligent road transportation, next-generation air traffic management, flexible manufacturing, assistive robotics, smart grid and demand response, urban mobility, ..)

4. Humans as elements in controlled systems (comfort control in homes, smart cities, rescue robotics, assistive devices, smart infrastructure, connected buildings, ..)

5. Cross-cutting themes (recent theoretical developments impacting the open problems, semiautonomous and mixed-initiative systems, shared control, cognitive control, decision-support for human operators, ethics and public policy, potential impact and open problems, ...)

4. Courses

4.1. Course on LMI optimization with applications in control
Contributed by: Didier Henrion, henrion@laas.fr

Course on LMI optimization with applications in control
by Didier Henrion, LAAS-CNRS, Toulouse, France and

Czech Technical University in Prague, Czech Republic.

http://homepages.laas.fr/henrion/courses/lmi16

Venue and dates:

The course is given at the Czech Technical University in Prague, Charles Square, down-town Prague (Karlovo Namesti 13, 12135 Praha 2) during the 3rd week of April 2016.
It consists of six two-hour lectures, given on Mon 18 Apr, Tue 19 Apr and Wed 20 Apr from 10am to noon and from 2pm to 4pm.

There is no admission fee, students and reseachers from external institutions are particularly welcome, but please send an e-mail to henrion@laas.fr to register.

Description:

This is a course for graduate students or researchers with some background in linear algebra, convex optimization and linear control systems. The focus in on systems control applications of semidefinite programming (SDP), or optimization over linear matrix inequalities (LMIs), an extension of linear programming to the cone of positive semidefinite matrices.

Outline:

In the first part of the course, historical developments of LMIs and SDP are surveyed. Convex sets that can be represented with LMIs are classified and studied.
LMI relaxations are introduced to solve non-convex polynomial optimization problems, with a focus on the primal theory of measures and moments and dual theory of polynomial sum-of-squares. Interior-point methods and algorithms are described to solve LMI problems and latest achievements in software and solvers are reported.

The second part of the course, more advanced and closer to current research topics, focuses on the use of measures and moments for static polynomial optimisation problems, as well as occupation measures for polynomial differential equations and related polynomial optimal control problems.

4.2. Course on Dynamics and Control New edition
Contributed by: Pedro Albertos, pedro@aii.upv.es

MOOC on Dynamics and Control New edition

This is an introductory course about the basic concepts related with Systems Dynamics, Feedback and Control.
It last for 6 weeks, with a minimal use of mathematics, suitable for Freshmen students in Engineering and experts from other fields
The course is FREE, running on edX platform, with an open forum for interaction and with the possibility of a participation certificate.
The new edition will be launched on February 23rd, 2016. There were more than 5000 participants in the past edition from more than 10 different countries

More information and free registration at

https://www.edx.org/course/dynamics-control-upvalenciax-dc201x-0

5. Positions

5.1. PhD: Royal Institute of Technology, Sweden
Contributed by: Mikael Johansson, mikaelj@kth.se

PhD: Royal Institute of Technology - KTH, Stockholm, Sweden

We are looking for 1-2 PhD students to join a research group working on fundamental theory and algorithms for real-time decision-making and control. Current research projects include real-time optimization of sustainable infrastructures, efficient algorithms for large-scale machine learning, and radio resource allocation mechanisms for next generation wireless systems. As a PhD student, you will get the opportunity to blend curiosity-driven basic research and innovative applications with goal-oriented research in ongoing research projects.

The PhD student positions are with the PhD program in Electrical Engineering and the ACCESS Linnaeus Center, which provides world-class quality education, including a large selection of regularly offered graduate courses, intensive courses on hot topics offered by leading international experts, as well as industrial internship possibilities.

The successful applicants are expected to hold or to be about to receive an MSc degree in applied mathematics, electrical engineering, computer science or similar. We are particularly looking for applicants with a strong background and interest in mathematics and algorithms. Applicants should be self-motivated, have an outstanding academic track record, and well-developed analytical and problem solving skills. Good command of English orally and in writing is essential for publishing and presenting results at international conferences and in international journals.

For more information, please refer to: http://www.kth.se/om/work-at-kth/lediga-jobb

5.2. PhD: University of Glasgow, UK
Contributed by: Konstantinos Ampountolas, konstantinos.ampountolas@glasgow.ac.uk

Ph.D. studentship in the modelling, control and optimisation of resilient transport and cyber-physical systems

Supervisor: Dr Konstantinos Ampountolas
School of Engineering, University of Glasgow, UK
Start date: October 2016
Application deadline: Friday 15 February 2016

A 3.5 years PhD studentship for the academic session starting in October 2016 is available in the School of Engineering at the University of Glasgow in the broad area of modelling, control and optimisation of resilient transport and cyber-physical systems. Students with a 1st Class or 2:1 MSc or undergraduate degree in Engineering, Computer Science, or Applied Mathematics/Operations Research are welcome to apply. The studentship provides an annual stipend in-line with the Research Council rate and tuition fees is available to Home UK and EU students. Formal applications need to follow the postgraduate admissions guidelines (http://www.gla.ac.uk/research/opportunities/howtoapplyforaresearchdegree/). The application deadline is Friday 15 February 2016.

Requests for further information should be sent to konstantinos.ampountolas@glasgow.ac.uk and include:
1. Covering/Motivation letter
2. Curriculum Vitae
3. Contact details of two academic referees.

5.3. PhD: Technische Universität München, Germany
Contributed by: Matthias Althoff, althoff@in.tum.de

PhD Position in Autonomous Driving (Collaboration with BMW)

Description:
Our offered position has a strong focus on planning and controlling safe maneuvers of automated vehicles.
The full job description can be found here:

http://portal.mytum.de/jobs/wissenschaftler/NewsArticle_20160114_092919

5.4. PhD: Wichita State University, USA
Contributed by: Zheng Chen, zheng.chen@wichita.edu

The Bio-inspired Robotics and Control Lab in the Department of Electrical Engineering and Computer Science at Wichita State University, which is located in Wichita, KS, USA, has available funding to support one PhD student in the general area of Bio-inspired Robotics, Smart Sensors and Actuators, Bio-mechatronics, and Dynamics and Control. The successful candidate is expected to have a strong background in control theory, modeling of complex dynamic systems, real-time control system design, system identification, micro/nano fabrication. Good programming skills and experience with C/C++, MATLAB/Simulink is an asset. A background in smart materials and structures as well as prior working experience with underwater robot design will be an advantage. Applicant to this position should already have completed (or will soon complete) a Master degree in systems and controls, electrical engineering, and/or mechanical engineering. The funding covers the cost of full tuition and stipends at a competitive rate and can start as early as Fall 2016.
The position will remain open until filled. Interested individuals should send their detailed curriculum vitae, copies of their recent transcripts, personal statement, a copy of their best publication in English, and if applicable GRE/TOFEL test scores to Dr. Zheng Chen (zheng.chen@wichita.edu).

5.5. PhD: Eindhoven University of Technology, Netherlands
Contributed by: Sergio Grammatico, s.grammatico@tue.nl

PhD position: Aggregative control of large-scale multi-agent systems.
Eindhoven University of Technology, Control Systems group, The Netherlands.

Within this PhD project, the candidate will develop novel control and optimization methodologies for large-scale multi-agent systems, specifically for large populations of strategic agents with local control capability, interacting through physical and information networks. A key challenge in regulating such large populations is that the dynamical behavior of the overall system is highly complex, in the sense that it includes the dynamical evolution of a large number of subsystems, each depending on the local variables (e.g. states and inputs), the coupling with non-local variables, the networked information, the local and global utility functions, besides uncertain variables and inputs.
The candidate will model and analyze the decision-making processes of the subsystems and develop scalable control and optimization methods to steer their aggregate emerging behavior toward desirable equilibrium states. Application domains include future smarter grids and user-centric intelligent mobility, e.g. focusing on the matching between distributed demand and supply in the presence of uncertain factors.

We are looking for a candidate with a master degree (or close to completion) in systems and control, applied mathematics, electrical or mechanical engineering, or a related field, and with a strong background or interest in dynamical systems, automatic control, optimization, game theory. The candidate is expected to work at the interface of several disciplines.

A good command of the English language is required (knowledge of Dutch is not required). We offer the opportunity to accomplish scientifically challenging research in a multi-disciplinary research group. The appointment will be for up to 4 years. The PhD student will be able to participate in the training and research activities of the Dutch Institute of Systems and Control (DISC). As an employee of the Eindhoven University of Technology, the PhD student will receive a competitive salary, as well as excellent secondary benefits. Assistance with accommodation can be arranged.

More information about the vacancy and the PhD program can be obtained from Sergio Grammatico (s.grammatico@tue.nl).

Candidates should include the following documents in their application: cv, short statement of motivation and research interests (one page), transcripts of all exams taken and obtained degrees (in English), names and contact information of up to three references (e.g. project/thesis supervisors), up to two research documents (e.g. thesis, conference/journal publication). Candidates shall email their application to Sergio Grammatico (s.grammatico@tue.nl).

The call for applications will remain open until the ideal candidate is found. The starting date is flexible, but ideally would be within March 2016.

5.6. PhD: Eindhoven University of Technology, Netherlands
Contributed by: Nathan van de Wouw, N.v.d.Wouw@tue.nl

PhD: Eindhoven University of Technology, The Netherlands

In the scope of the European Union EID (European Industrial Doctorates) project HYDRA on "HYdraulics modelling for DRilling Automation", the Eindhoven University of Technology, The Netherlands, offers a PhD position at the Department of Mechanical Engineering on "Automatic model reduction techniques for hydraulic drilling models: modelling for estimation & control".

Project Description:
Societal uses for the drilling of deep wells are abundant and have enormous impact on global economies; examples include the exploration of minerals, geothermal energy, oil and gas. The future sustainable harvesting of these resources requires the exploitation of difficult-to-access, unconventional reserves and is threatened by concerns on the environmental safety and high cost of drilling operations. To overcome these threats, there are strong needs for advanced tools for virtual drilling scenario testing and drilling automation.
The scientific objective of HYDRA is to develop a framework for multi-phase hydraulic modeling and model complexity reduction for drilling operations, delivered in software directly usable in industry. The resulting models uniquely combine high predictive capacity and low complexity enabling their usage in both virtual drilling scenario testing and drilling automation.
The HYDRA project comprises 3 PhD projects (two at the Eindhoven University of Technology and one at MINES ParisTech).

The main goals of this Ph.D. sub-project are:
- Develop model reduction techniques for the automatic construction of fit-for-purpose hydraulic models that are suitable for estimation and control of pressure.

- Implement developed model reduction techniques in software at Kelda.

- Validate and test implemented techniques on industrial scenarios.

The HYDRA consortium represents top-level expertise in all scientific and engineering disciplines needed to take on the main challenges of HYDRA: multiphase flow dynamics, model reduction, control and mathematics. Moreover, the consortium houses expertise ranging from academic research & training (Eindhoven University of Technology, the Netherlands, MINES ParisTech, France) and industrial R&D (Kelda, Norway) to industrial practice and training (MH Wirth, Norway, and the Well Academy, the Netherlands), therewith offering a broad spectrum of training.

Within all three Ph.D. positions that are available in HYDRA, the researchers are expected to spend 50% of their time at their hosting university and 50% of their time at Kelda Drilling Controls in Norway. This will provide the Ph.D. students with a unique opportunity to combine academic research and training with industrial R&D.

The starting date is flexible but ideally would be in September 2016.

Requirements:

The EU imposes the so-called "Mobility Rule" for applicants to EID projects:

'at the time of recruitment by the host organisation, researchers must not have resided or carried out their main activity (work, studies, etc.) in the country of their host organisation for more than 12 months in the 3 years immediately prior to the reference date. Compulsory national service and/or short stays such as holidays are not taken into account.'

The Ph.D. candidate should have

- an M.Sc. degree in Mechanical Engineering, Systems and Control or Mathematics with a solid background in the mathematical dynamical modeling of mechanical systems, model reduction and systems and control theory.

- a strong interest and skills in both 1) developing new fundamental theories for the model reduction of complex dynamical systems and 2) applying such novel scientific developments to industrial (drilling) applications.

- Excellent communication skills and written/verbal knowledge of the English language.

Application:

Online application via http://jobs.tue.nl/en/vacancy/3-phd-positions-on-hydraulics-modelling-for-drilling-automation-hydra-251288.html

Please provide the following information:

- An extended curriculum vitae,

- an explanation of your interest in the proposed research topic,

- your course program and corresponding grades,

- references,

- all other information that might help us to assess your suitability for one of these positions and

- a publication list (if applicable).

Information:

For more information on the vacancy and the HYDRA project, consult the website http://jobs.tue.nl/en/vacancy/3-phd-positions-on-hydraulics-modelling-for-drilling-automation-hydra-251288.html or contact Prof.dr. Nathan van de Wouw, N.v.d.Wouw@tue.nl

5.7. PhD: Eindhoven University of Technology, Netherlands
Contributed by: Nathan van de Wouw, N.v.d.Wouw@tue.nl

PhD: Eindhoven University of Technology, The Netherlands

In the scope of the European Union EID (European Industrial Doctorates) project HYDRA on "HYdraulics modelling for DRilling Automation", the Eindhoven University of Technology, The Netherlands, offers a PhD position at the Department of Mathematics and Computer Science on "Automatic model reduction techniques for hydraulic drilling models: modelling for numerical simulation".

Project Description:
Societal uses for the drilling of deep wells are abundant and have enormous impact on global economies; examples include the exploration of minerals, geothermal energy, oil and gas. The future sustainable harvesting of these resources requires the exploitation of difficult-to-access, unconventional reserves and is threatened by concerns on the environmental safety and high cost of drilling operations. To overcome these threats, there are strong needs for advanced tools for virtual drilling scenario testing and drilling automation.
The scientific objective of HYDRA is to develop a framework for multi-phase hydraulic modeling and model complexity reduction for drilling operations, delivered in software directly usable in industry. The resulting models uniquely combine high predictive capacity and low complexity enabling their usage in both virtual drilling scenario testing and drilling automation.
The HYDRA project comprises 3 PhD projects (two at the Eindhoven University of Technology and one at MINES ParisTech).

The main goals of this Ph.D. sub-project are:
- Develop model reduction techniques for the automatic construction of fit-for-purpose hydraulic models that are suitable for virtual drilling scenario testing,
- Implement developed model reduction techniques in software at Kelda,
- Validate and test implemented techniques on industrial scenarios.
The HYDRA consortium represents top-level expertise in all scientific and engineering disciplines needed to take on the main challenges of HYDRA: multiphase flow dynamics, model reduction, control and mathematics. Moreover, the consortium houses expertise ranging from academic research & training (Eindhoven University of Technology, the Netherlands, MINES ParisTech, France) and industrial R&D (Kelda, Norway) to industrial practice and training (MH Wirth, Norway, and the Well Academy, the Netherlands), therewith offering a broad spectrum of training.
Within all three Ph.D. positions that are available in HYDRA, the researchers are expected to spend 50% of their time at their hosting university and 50% of their time at Kelda Drilling Controls in Norway. This will provide the Ph.D. students with a unique opportunity to combine academic research and training with industrial R&D.
The starting date is flexible but ideally would be in September 2016.

Requirements:
The EU imposes the so-called "Mobility Rule" for applicants to EID projects:
'at the time of recruitment by the host organisation, researchers must not have resided or carried out their main activity (work, studies, etc.) in the country of their host organisation for more than 12 months in the 3 years immediately prior to the reference date. Compulsory national service and/or short stays such as holidays are not taken into account.'
The Ph.D. candidate should have
- an M.Sc. degree in Applied Mathematics or Mechanical Engineering/Systems and Control with a solid background in mathematical modeling, model reduction and scientific computing.
- a strong interest and skills in both 1) developing new fundamental theories for the model reduction of

complex dynamical systems and 2) applying such novel scientific developments to industrial (drilling) applications.

- Excellent communication skills and written/verbal knowledge of the English language.

Application:

Online application via http://jobs.tue.nl/en/vacancy/3-phd-positions-on-hydraulics-modelling-for-drilling-automation-hydra-251288.html

Please provide the following information:

- An extended curriculum vitae,
- an explanation of your interest in the proposed research topic,
- your course program and corresponding grades,
- references,
- all other information that might help us to assess your suitability for one of these positions and
- a publication list (if applicable).

Information:

For more information on the vacancy and the HYDRA project, consult the website http://jobs.tue.nl/en/vacancy/3-phd-positions-on-hydraulics-modelling-for-drilling-automation-hydra-251288.html

or contact Prof.dr. Wil Schilders, w.h.a.schilders@tue.nl , or Prof.dr. Nathan van de Wouw, N.v.d.Wouw@tue.nl

5.8. PhD: MINES ParisTech, France

Contributed by: Florent di Meglio, florent.di_meglio@mines-paristech.fr and Nathan van de Wouw, N.v.d.Wouw@tue.nl

In the scope of the European Union EID (European Industrial Doctorates) project HYDRA on "HYdraulics modelling for DRilling Automation", the Centre Automatiques de Systèmes, MINES ParisTech, France, offers a PhD position on "Simplified model-based estimation of downhole parameters for drilling".

Project Description:

Societal uses for the drilling of deep wells are abundant and have enormous impact on global economies; examples include the exploration of minerals, geothermal energy, oil and gas. The future sustainable harvesting of these resources requires the exploitation of difficult-to-access, unconventional reserves and is threatened by concerns on the environmental safety and high cost of drilling operations. To overcome these threats, there are strong needs for advanced tools for virtual drilling scenario testing and drilling automation.

The scientific objective of HYDRA is to develop a framework for multi-phase hydraulic modeling and model complexity reduction for drilling operations, delivered in software directly usable in industry. The resulting models uniquely combine high predictive capacity and low complexity enabling their usage in both virtual drilling scenario testing and drilling automation.

The HYDRA project comprises 3 PhD projects (two at the Eindhoven University of Technology and one at MINES ParisTech).

The main goals of this Ph.D. sub-project are:

- Develop an accurate model for two-phase flow in pipes, amenable to model reduction,
- Identify and perform physics-based complexity reduction opportunities,
- Develop estimation schemes for unmeasured states and parameters of Partial Differential Equations (PDEs),
- Validate and test techniques on industrial scenarios.

The HYDRA consortium represents top-level expertise in all scientific and engineering disciplines needed to take on the main challenges of HYDRA: multiphase flow dynamics, model reduction, control and mathe-

matics. Moreover, the consortium houses expertise ranging from academic research & training (Eindhoven University of Technology, the Netherlands, MINES ParisTech, France) and industrial R&D (Kelda, Norway) to industrial practice and training (MH Wirth, Norway, and the Well Academy, the Netherlands), therewith offering a broad spectrum of training.

Within all three Ph.D. positions that are available in HYDRA, the researchers are expected to spend 50% of their time at their hosting university and 50% of their time at Kelda Drilling Controls in Norway. This will provide the Ph.D. students with a unique opportunity to combine academic research and training with industrial R&D.

The starting date is flexible but ideally would be in September 2016.

Requirements:

The EU imposes the so-called "Mobility Rule" for applicants to EID projects:

' at the time of recruitment by the host organisation, researchers must not have resided or carried out their main activity (work, studies, etc.) in the country of their host organisation for more than 12 months in the 3 years immediately prior to the reference date. Compulsory national service and/or short stays such as holidays are not taken into account.'

The Ph.D. candidate should have

- an M.Sc. degree in Mechanical or Electrical Engineering or Mathematics with a solid background in systems and control theory, in the dynamical modeling of mechanical systems, and in fluid dynamics.

- a strong interest and skills in both 1) developing new fundamental theories for estimation of parameters of Partial Differential Equations and 2) applying such novel scientific developments to industrial (drilling) applications.

- Excellent communication skills and written/verbal knowledge of the English language.

Application:

Submit your application to Prof. Dr. Di Meglio directly (florent.di_meglio@mines-paristech.fr) by providing the information on:

- An extended curriculum vitae,
- an explanation of your interest in the proposed research topic,
- your course program and corresponding grades,
- references,
- all other information that might help us to assess your suitability for one of these positions and
- a publication list (if applicable).

Information:

For more information on the vacancy and the HYDRA project, consult the website http://jobs.tue.nl/en/vacancy/3-phd-positions-on-hydraulics-modelling-for-drilling-automation-hydra-251288.html

or contact Prof. Dr. Di Meglio directly (florent.di_meglio@mines-paristech.fr).

5.9. PhD: INCITE, Spain, Netherlands, Belgium, Italy, France, Germany, Portugal
Contributed by: Fernando D. Bianchi, coordinator-incite@irec.cat

PhD: Marie Sklodowska-Curie training network INCITE, Spain, Netherlands, Belgium, Italy, France, Germany, Portugal

14 PhD positions are available in the Horizon 2020 Marie Sklodowska-Curie Innovative Training Networks (ITN) project INCITE (Innovative controls for renewable source integration into smart energy systems - Grant No. 675318)

INCITE is a Marie Sklodowska-Curie European Training Network (ITN-ETN) funded by the HORIZON 2020 Programme, which brings together experts on control and power systems, from academia and industry with the aim of training 14 young researchers capable of providing innovative control solutions for the challenging task of controlling and designing the future electrical networks. For this purpose, INCITE seeks to create a multidisciplinary research space with a complete view of the smart grids control where talented young researchers can be trained through research. INCITE seeks to cover subjects like: optimisation tools to balance generation and demand, to increase efficiency and to reduce the total energy cost; control of electronics interfaces for the implementation of smart grids; control of ESS to add flexibility to the power management; control for integration of RES and distributed generation; monitoring and state estimation solutions; among others.

INCITE is a multidisciplinary network formed by
- IREC (Catalonia Institute for Energy Research), Barcelona, Spain (Coordinator)
- UPC (Universitat Politecnica de Catalunya), Barcelona, Spain
- TUDelft (Delft University of Technology), Delft, Netherlands
- VITO (Flemish Institute for Technological Research), Mol, Belgium
- UniBo (Universita di Bologna), Bologna, Italy
- UGA (Universite Grenoble Alpes), Grenoble, France
- GE Global Research, Munich, Germany
- EFACEC ENERGIA, Porto, Portugal
- 3E, Brussels, Belgium (Partner organisation)
The network supports the recruitment of 14 Early Stage Researchers (ESRs) during 36 months. Each ESR will be working on an Individual Research Project (IRP) in the host institution and will have secondments related to her/his research in other academic and industrial partners of the network. Strong interactions among the different ESRs and institutions are expected. All ESRs will be enrolled in a PhD programme and the development of the IRPs will be part of their thesis. The network will support training activities (including scientific, personal and transferable skills) and periodical events. This is a unique opportunity for highly motivated young researchers of developing their career in a multi-sectorial and multi-national environment and obtain a wide knowledge on the control of electrical networks.

In Marie Sklodowska-Curie Actions, ESRs are paid a competitive salary (adjusted for the host country), including a Mobility Allowance and a Family Allowance (subject to family situation). To be eligible as an ESR, the researcher should be within four years of the diploma granting her/him access to doctorate studies at the time of recruitment and must not have spent more than 12 months in the host country within the 3 years prior to starting. More information about eligibility criteria and Marie Sklodowska-Curie European Training Networks can be found in: http://ec.europa.eu/research/mariecurieactions/about-msca/actions/itn/index_en.htm

PhD positions:
- ESR1.1: Partitioning and optimisation-based non-centralised control of dynamical energy grids (UPC)
- ESR1.2: Decentralised control for RES by fast market-based MAS (TUDelft)
- ESR1.3: Hybrid agent-based optimisation model for self-scheduling generators in a market environment (TUDelft)
- ESR1.4: Development of non-intrusive and intrusive energy-management algorithms (VITO)
- ESR2.1: Energy flexible and smart grid/energy ready buildings (IREC)
- ESR2.2: Control and management of storage elements in micro-grids (UPC)
- ESR2.3: Robust management and control of smart multi-carrier energy systems (TUDelft)
- ESR3.1: Control strategies for hybrid AC-DC grids (IREC)

- ESR3.2: A new modelling approach for stabilisation of smart grids (UGA)
- ESR3.3: Distributed control strategies for wind farms for grid support (IREC)
- ESR4.1: Integrated simulation for MAS design and testing (UniBo)
- ESR4.2: Fault detection and isolation for renewable sources (UGA)
- ESR4.3: Advanced monitoring and control of electrical distribution grid (GE)
- ESR4.4: Advanced functionalities for the future smart secondary substation (Efacec)

The positions are expected to start between June and October 2016 and the applications open in January 2016.

Deadline for application: 22 February 2016

For full descriptions of the job positions and application procedure please visit www.incite-itn.eu

5.10. PhD: University of Texas at Dallas, USA
Contributed by: Tyler Summers, tyler.summers@utdallas.edu

Multiple PhD positions in Control and Optimization in Dynamical Networks
Description:
Several fully funded PhD positions for highly motivated students are available starting in Fall 2016 in the Control, Optimization, and Networks Laboratory (http://www.utdallas.edu/~tyler.summers/index.html) in the Department of Mechanical Engineering at the University of Texas at Dallas. The lab seeks to understand the rich interplay of dynamics, control, optimization, information, and uncertainty in large-scale networks. The research emphasizes theoretical analysis and computational tools and is strongly driven by a variety of applications, including future power grids and distributed multi-robot systems.

Outstanding eligible candidates will be nominated for special university fellowships that offer increased stipends and other professional development opportunities. Applications from underrepresented minorities are encouraged.

Required qualifications:
(1) B.S. in mechanical engineering, electrical engineering, computer science, applied mathematics, or a related field
(2) Strong background in systems and control theory, optimization, and mathematics, including relevant coursework and/or work experience
(3) Excellent communication skills
(4) Proficiency in MATLAB, Python, Julia, and/or C/C++ or other scientific programming languages

Preferred qualifications:
(1) M.S. degree
(2) Publications in reputable control, optimization, robotics, or power systems conferences or journals
(3) Hands-on experience with robotic systems is a plus for candidates interested in robotics applications

How to apply:
Please send the following documents to tyler.summers@utdallas.edu
(1) One page cover letter describing your research interests, background, and professional goals
(2) CV or resume
(3) Transcripts

Candidates will also need to formally apply through UT Dallas Graduate Admissions; for details, please see http://www.utdallas.edu/admissions/graduate/degrees/detail.php?d=1741

5.11. PhD: University of the Federal Armed Forces Munich, Germany
Contributed by: Gunther Reissig, gunther2013@reiszig.de

PhD position: Formal methods in control

Priv.-Doz. Dr.-Ing. 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.
We invite applications for a doctoral researcher position in the field of formal methods in control. The successful candidate is expected to advance theory of as well as computational methods for abstraction-based controller synthesis, to a degree that facilitates routine, fully automated, practical application of the approach to nonlinear continuous-state plants and complex specifications. The project involves theoretical work, software development, and, on a small scale, experimental work.
Applicants are expected to have a strong interest in dynamical systems and control. A Masters degree (or equivalent, giving access to doctoral studies) in a related field such as Systems and Control, Computer Science, or Mathematics, with a strong theoretical background and an excellent academic record, as well as proficiency in programming (C or Ada) and excellent communication skills in English are required. 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. Competitive salary is offered according to the tariff "TVOeD Bund, E 13".
Please send your application (and any inquiries) via e-mail to G Reissig (gunther2013@reiszig.de, subject: PhD ref 1076, file formats: PDF, plain text). Applications should include a CV (in English) with photo, a letter of motivation (in English), university transcripts (grades records, in English or German, both BSc and MSc degrees), contact details of up to three referees, and possibly a list of publications. Screening of applications will begin on March 1, 2016.

5.12. PhD Research Fellow: University of Agder, Norway
Contributed by: Michael Ruderman, michael.ruderman@uia.no

PhD Research Fellow in Technology with specialization in Mechatronics
Project title: Design and Verification Methods for Hybrid Control Systems
The University of Agder invites applications for a full-time, fixed-term position as Research Fellow in Mechatronics for a period of three years, at the Department of Engineering Sciences, Faculty of Engineering and Science. The position is located in Grimstad, Norway. The starting date is negotiable.
The Faculty of Engineering and Science has a core group of more than 16 academic staff members in the field of mechatronics. The group is responsible for the BSc, MSc, and PhD programmes in mechatronics at the University of Agder and has an extensive network of Norwegian and international partner universities and university colleges.

Background for the position:
Modern control systems often combine hybrid automata for integrating discrete behavior with continuous-time dynamics. The switched and impulsive systems allow for discrete transitions corresponding to the changes between the different state subspaces (set of modes) or impulsive jumps within particular mode of a

hybrid system. Various application examples are in power systems with on-off switches, geared mechanical engines, digital hydraulics, programmable logic controllers employed for automation, and others. There is a growing need and correspondingly research on topics related to the formal design and verification methods for hybrid control systems.

Objectives:
The objective of this PhD project is in (i) systematic analysis of the formal design and verification methods suitable for the hybrid control systems, (ii) elaboration of a methodology how to integrate verification tools and techniques in the design flow so as to improve the overall system reliability, (iii) selection, specification, and realization of application case(s) based on the standard and developed software and hardware. The elaborated solutions will be tested and demonstrated by taking advantage of the experimental facilities.
- Mechatronic Innovation Lab (MIL) in Grimstad.
- Norwegian Motion Laboratory (Motion Lab) in Grimstad.
- Partners in SFI WP3.
It is expected that the candidate will perform both the theoretical and experimental work using the available mechatronic resources of the above-mentioned facilities.

The successful applicant should hold a master's degree in mechatronics, mechanical engineering or electrical engineering that covers the above fields. The position places great demands on the applicant's capacity for independent goal-oriented work, ability to concentrate and attention to detail. Applicants will be assessed on the basis of academic background and results, and any previous research and development work. Relevant industrial experience, personal suitability and good teamwork skills will also be emphasized.

The following requirements must be met:
- Strong academic skills, experience and interest in the following areas: control design, hybrid systems and finite automaton, formal verification methods.
- Hands on experience with PLC and dSpace and programming skills in Matlab/Simulink, C/C++.
- Strong background in systems and control theory.
The following admission requirements apply to the PhD program:
- The average grade for courses included in the bachelor's degree (or equivalent) must be B (or equivalent) or higher;
- The average grade for courses included in the master's degree (or equivalent) must be B (or equivalent) or higher;
- The master's thesis (or equivalent) must have a grade B (or equivalent) or higher when the candidate is admitted to the PhD program;
- The successful applicant must have written and spoken English proficiency;
- The position places great demands on the applicant's capacity for independent goal-oriented work, ability to concentrate as well as good communication and team-work skills in cooperation with research colleagues both inside and outside the university.
Applicants from some countries must document their English proficiency through one of the following tests with the stated results or better:
- TOEFL - Test of English as a Foreign Language with a minimum score of 550 on the Paper-based Test (PBT), or 80 on the Internet based Test (iBT)
- IELTS - International English Language Testing System, with a result of at least 6.0.
Please check this list http://www.nokut.no/Documents/NOKUT/Artikkelbibliotek/Utenlandsk_utdanning/GSUlista/2015/G to see if an English test is required.

Admission requirements:

The candidate will be enrolled in the PhD programme in technology at the Faculty of Engineering and Science. The applicant must qualify for admission to this PhD Programme. More information about the program and a complete list of admission requirements to the PhD programmes can be found here http://www.uia.no/en/studies2/phd-programmes/specialisation-in-mechatronics

Applications from applicants who already hold a PhD will normally not be considered. Short-listed applicants will be invited for interviews. For more details on this position and application procedure see http://www.jobbnorge.no/en/available-jobs/job/121309/phd-research-fellow-in-technology-with-specialization-in-mechatronics

Closing date: 31.03.2016

For further information please contact Associate Professor Michael Ruderman, e-mail michael.ruderman@uia.no In accordance with §25(2) of the Freedom of Information Act, applicants may request that they are not identified in the open list of applicants. The University, however, reserves the right to publish the name of applicants. Applicants will be advised of the University's intention to exercise this right.

5.13. PhD/PostDoc: Rutgers University, USA
Contributed by: F. Javier Diez, diez@jove.rutgers.edu

PhD/Post-Doc: Rutgers, The State University of New Jersey, USA

We invite applications for one postdoctoral/PhD position in the area of experimental control for multi-rotor type UAVs. The successful candidate will join a research group that has built the first multi-rotor vehicle capable of operating in air and underwater and that is expanding its capabilities.

The successful candidate will be familiar with control design methodologies for control and its implementation and testing with multi-rotor systems. The work will involve design, and testing of a robust nonlinear controller for altitude control of a quadrotor type autonomous aerial vehicle operating in air and underwater.

Requirements

MS/Ph.D in Flight Dynamics and Control, Mechanical or Aerospace Engineering or relevant fields

- Backgrounds in control, nonlinear dynamic models for UAV, PID controllers
- Hands on experience in experimental testing of multirotors

Starting position is available immediately. Annual appointment with renewal possible up to 3 years. For further information, please contact Prof. F. Javier Diez, diez@rutgers.edu. Applicants can send a single pdf file containing a letter of interest, curriculum vitae, and names and contact of references.

5.14. PostDoc: KTH, Sweden
Contributed by: Mikael Johansson, mikaelj@kth.se

The School of Electrical Engineering at KTH, Stockholm, Sweden invites applications for a postdoctoral position in the area of large-scale optimization, decision-making, and control.

Applicants should have a Ph.D. in a relevant area, a vision and ambition for their own research, and a proven track record of scientific accomplishments and/or publications in leading international journals.

The position is available for one year, with the possibility of extension for another year. We follow postdoctoral best practices (http://cra.org/resources/best-practice-memos/computer-science-postdocs-best-practices/) to support the successful candidate in her or his career.

The position is created with the support from a five-year project on basic research for "Engineering the Interconnected Society" from the Knut and Alice Wallenberg Foundation, and offers many opportunities

for collaborative work with students, postdocs, and faculty at the School of Electrical Engineering and the ACCESS Linneaus Center.

Applications should contain a CV, a motivational letter summarizing past achievements and current research interests, and contact information for one-two references. The applications should be addressed to Mikael Johansson, mikaelj@kth.se.

5.15. PostDoc: Lund University, Sweden
Contributed by: Anders Rantzer, rantzer@control.lth.se

Positions as LCCC Linnaeus Postdoctor at Automatic Control LTH, Lund University, Sweden. This is an opportunity for excellent young researchers to develop their own line of research in synergy with a strong environment. LCCC - Lund Center for Control of Complex engineering systems - has been created with support from a ten year Linnaeus grant by the Swedish Research Council. The application deadline in the end of February. See www.lccc.lth.se.

5.16. PostDoc: Monash University, Australia
Contributed by: Mohsen Ramezani, mohsen.ramezani@monash.edu

We are seeking highly motivated and talented applicants for a postdoctoral research fellow position at the Institute of Transport Studies at Monash University, Melbourne, Australia.

Applicants should hold a Ph.D. degree in Civil Engineering, Electrical Engineering, Computer Science, Operations Research, Applied Mathematics, or Physics and should be interested in transportation systems research. Preferred background and experience include traffic modeling, transportation network modeling, stochastic analysis, optimization, machine learning and MATLAB computer programming. The research topics will be in the area of complex networks in transportation, network traffic modeling and control, and housing and transportation costs modeling and affordability measurements.

Applicants who are very close to finish their Ph.D. degree are highly encouraged to apply. The position is available immediately for duration of one year, with the possibility of extension for the second year depending on funding availability. A competitive annual salary of $60,000-$70,000 including 9.5% superannuation will be offered. The call for applications will remain open until the position is filled. The starting date is flexible, but ideally would be in March 2016.

Potential applicants are encouraged to contact Dr. Meead Saberi (meead.saberi@monash.edu) and/or Dr. Mohsen Ramezani (mohsen.ramezani@monash.edu), submitting their complete CV and contact information for two references.

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

Postdoctoral Position at ETH Zürich
Control for Modular Robotics in Digital Fabrication

We offer a Postdoctoral Position that will be part of a research group focusing on the development of on-site robotic construction systems for digital fabrication. The position will be part of the National Centre of Competence in Research (NCCR) Digital Fabrication, dfab.ch. The successful candidate will join the

Institute for Dynamic Systems and Control at the Department of Mechanical and Process Engineering at ETH Zürich under the supervision of Prof. Melanie Zeilinger.

Description:

Digital fabrication is an exciting new research area combining digital technologies with physical construction processes with the goal of enabling new architectural designs. Complex and variable digital fabrication environments will require machines, techniques and tools that are inherently flexible and can adjust to their environment. In addition to adjusting the behavior, significant benefits are offered by the ability of changing the machine configuration on-site and during operation. In addition to the machine design, the core technology required to realize such a system is a controller design and implementation that can provide a modular operation in a safe manner.

This project will address this challenge and develop new methodologies for high performance control of modular robotic systems. Topics to be addressed include studying properties and design of modular systems; a plug and play controller design and synthesis; and the development of task-guided system configurations. The results will offer large practical potential for digital fabrication, but will also create novel theory, methods and tools for highly modular robotic systems.

Qualifications:

We are looking for a candidate with a PhD degree from a recognized university (or who will be close to completion); a strong theoretical background in systems and control (prior knowledge in optimization and/or machine learning is a plus) and proficient oral and written English skills.

Application:

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

Please email your application to Prof. Melanie Zeilinger, e-mail: mzeilinger@ethz.ch

For more information, see http://www.idsc.ethz.ch/research-zeilinger/open-positions.html

5.18. PostDoc: Università del Salento, Italy
Contributed by: Giuseppe Notarstefano, giuseppe.notarstefano@unisalento.it

Postdoc (Università del Salento - ERC starting grant project)

A postdoc position will be soon available within the project OPT4SMART funded under the ERC Starting Grant excellence program. Research will be conducted at the Università del Salento (Lecce, Italy), under the supervision of Prof. Giuseppe Notarstefano.

About the position

We are looking for motivated, talented PhDs from all over the world, who wish to:

-) undertake/continue research at the cutting edge of optimization and control in cyber-physical networks;

-) contribute to the startup of an excellent, international new research group;

-) work in one of the most beautiful Italian cities with a great quality of life.

The initial appointment will be for one year with the possibility of extension based on performance. The salary is competitive (very competitive for the life cost in Italy). The postdoctoral researcher will work in a group with about six PhD students and will have the possibility to take the co-supervision of one or more of them.

About OPT4SMART (Distributed optimization methods for smart cyber-physical networks):

OPT4SMART is a 5 years research project funded under the EU Horizon 2020 excellence program "ERC

Starting Grant", http://erc.europa.eu, supporting investigator-driven frontier research on the basis of scientific excellence. OPT4SMART will investigate a novel distributed, large-scale optimization framework and its application to big-data estimation, learning, decision and control problems in cyber-physical networks.

About Lecce

Lecce is a beautiful Baroque city in the South-East of Italy. It is a lively, graceful but relaxed university town in the Salento peninsula, the heel of Italy's boot. For a 36-hours tour of Lecce you can google The New York Times: "36 hours in Lecce, Italy".

Who should apply

The desired candidate holds a PhD degree in Controls, Optimization, Signal Processing or related fields, and has

-) an excellent publication record (few high-impact papers in high-quality journals and conferences);
-) a strong mathematical background including optimization and preferably control theory or signal processing;
-) strong interest in optimization and at least one of: control theory, estimation, machine learning;
-) excellent proficiency in written and spoken English.

The above skills and background should clearly appear from the candidate CV, from few (the most important) publications, and from the PhD thesis.

For further information about the position and the official call you can send an email with subject "OPT4SMART Postdoc last-name" to giuseppe.notarstefano@unisalento.it.

See also http://cor.unisalento.it/notarstefano/opt4smart/Postdoc_OPT4SMART_flyer.pdf

5.19. Lecturer: Central College of Pella, USA
Contributed by: Nadine Argo, argon@central.edu

Central College of Pella, Iowa, seeks a Lecturer of Engineering for a non-tenure line faculty appointment beginning August 2016 to teach undergraduate engineering courses at advanced and intermediate levels. The successful candidate will have an M.S. in Electrical Engineering with background in Mechanical Engineering or an M.S. in Mechanical Engineering with background in Electrical Engineering. Other required qualifications are industrial work experience including significant engineering design, and strong teaching skills. Preference will be given to licensed Professional Engineers (P.E.) with digital control experience. Candidates should be committed to undergraduate teaching and have an understanding of and appreciation for the liberal arts environment. Additionally, candidates will be expected to contribute to program development and assessment, including the ABET accreditation. For more information and to apply please visit http://www.central.edu/jobseekers/.

5.20. Lecturer: Glasgow Caledonian University, Scotland
Contributed by: Geraint Bevan, geraint.bevan@gcu.ac.uk

Lecturer: Glasgow Caledonian University

Ref no: GCU00080

Closes: Wednesday, 17th February 2016

Published: Thursday, 14th January 2016

Location: Glasgow, Scotland

Salary: £40,082 - £46,414 per year

Hours: 35.00 hours per week
Contract Type: Full Time
Position Type: Permanent
Organisation: Glasgow Caledonian University

The School of Engineering and Built Environment wishes to appoint a Lecturer in Control Engineering to join the Instrumentation, Control and Chemical Sciences subject group. Control Engineering is taught in a wide range of our undergraduate programmes and at all levels in Mechanical Engineering and Electrical Power Engineering. Additionally, our successful postgraduate programmes in Applied Instrumentation and Control attract high quality applicants from around the world and are offered in a distance learning mode. Our focus on both theoretical and practical control engineering ensures that our graduates are well equipped for employment in many industries.

We seek a control engineer with experience in the practical implementation of control systems to join our subject group. Your research interests should align with the University research theme of Sustainable Environments or Digital Health and in particular complement one of the research areas of existing academic staff in the group in diagnostic systems and sensors research, or design, process and manufacturing research or energy and power systems research.

The successful candidate will be part of a vibrant team contributing to all levels of teaching and research within the subject area. Our laboratories are extremely well equipped to ensure that teaching and research in control engineering is well supported.

You will have a PhD in a control engineering area, experience of teaching, academic delivery and a strong commitment to the enhancement of teaching, student experience and progression. A current and appropriate record of research and / or knowledge exchange that compliments the existing themes of the University is essential.

Further details on this post are available by contacting Dr Sheila Smith, Assistant Head of Department at a.s.smith@gcu.ac.uk or on +44 (0) 141 331 3552

See more at:

https://www.myjobscotland.gov.uk/education/glasgow-caledonian-university/jobs/lecturer-control-engineering-37981

5.21. Faculty: Washington University in St. Louis, USA

Contributed by: Hiro Mukai, facsearch@ese.wustl.edu

Tenured/Tenure-Track Faculty

The Preston M. Green Department of Electrical & Systems Engineering at Washington University in St. Louis invites applications for faculty positions at all levels, for fall 2016. The Electrical & Systems Engineering department moved to a new building, Preston M. Green Hall, with state-of-the-art facilities. Candidates should be exceptionally strong, possess novel and creative visions of research, and commit gladly to teaching at both the undergraduate and graduate levels. They should have an earned doctorate in Electrical Engineering, Computer Engineering, Computer Science, Applied Physics, Systems Engineering, Mathematics, Statistics, Operations Research or related fields.

Technical areas of interest include, but are not limited to, signal processing, machine learning, imaging, information theory, network science, applied physics, electronics, control systems, operations research, optimization, applied mathematics, and applied statistics. Applications include biomedicine, energy, the environment, robotics, financial engineering, and modeling of physical and complex systems. Successful candidates are

expected to conduct high-quality research and teaching, publish in peer-reviewed journals, and participate in department and university service.

Applications will be accepted immediately, and interviews will begin after January 1, 2016. The details of the application process and necessary documents are found at http://ese.wustl.edu/aboutthedepartment/Pages/faculty-openings.aspx..

Washington University in St. Louis is a medium-size private university, which is 14th in U.S. News & World Report's national university ranking.

Washington University in St. Louis is an Equal Opportunity and Affirmative Action employer, and the Engineering School seeks an exceptionally qualified and diverse faculty; women, minorities, protected veterans and candidates with disabilities are strongly encouraged to apply. Employment eligibility verification required upon employment.

5.22. Researcher: General Motors, USA
Contributed by: Yilu Zhang, yilu.zhang@gm.com

General Motors R&D has one opening in the vehicle health management (VHM) area. VHM is an emerging technology that predicts when certain vehicle components need attention, and notifies drivers before vehicle performance is impacted. Enabled by the advanced connected vehicle technology, VHM provides vehicle customers with an unprecedented level of assurance, convenience, and ownership experience. GM R&D invites the top talent like you to join a vibrant team to address the technical challenges of predictive analytics, big-data, and control, and develop this exciting industry leading technology. Depending on the background and experience, the successful candidate may qualify for either one of the two job levels. Interested candidates are encouraged to apply through the following links:

http://gmibm.avature.net/careers/JobDetail/United-States-Sr-Researcher-Diagnosis-and-Prognosis/8510

http://gmibm.avature.net/careers/JobDetail/United-States-Staff-Researcher-Diagnosis-and-Prognosis/8509

In case the above links do not work, please go to http://gmibm.avature.net/careers/SearchJobsAllJobs and search for RES0000649 or RES0000650

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Senior Researcher - Diagnosis and Prognosis:

Major Duties and Responsibilities:

- Develop next-generation technologies for vehicle system diagnosis, prognosis, and fault-tolerant controls as well as integration.
- Develop and execute technical plans, including concept generation, development, implementation, and evaluation.
- Generate innovative ideas and establish new research areas.
- Lead technical discussions and reviews as an expert in related areas of responsibility.
- Maintain state-of-the-art knowledge in related areas of responsibility.
- Communicate ideas, plans and results effectively via presentations and written reports.
- Work effectively with peers, management, operations groups, and outside organizations.

Qualifications:

Basic Required Skills:

- PhD in Electrical, Controls, Mechanical, Aerospace Engineering with demonstrated research capability or equivalent background
- Up to 5 years of related industry experience

- Strong background in vehicle control, diagnosis, and prognosis systems analysis and synthesis.
- Strong background in system diagnosis and prognosis algorithm development and integration.
- Effective verbal and written communication skills.
- Excellent interpersonal and communication skills to work effectively with GM internal and external customers.

Basic Preferred Skills:
- 5+ years of related industry experience
- Track record of developing and deploying new technology
- Experience of project management
- Experience in remote diagnosis and prognosis.
- Experience in vehicle dynamics.
- Experience in environmental sensors, such as camera, radar, lidar.
- Experience in electromechanical actuators.
- Experience in Matlab/Simulink, dSpace rapid prototyping, ETAS tools
- Experience in large-scale data processing.
- Experience in hardware and software development

Staff Researcher - Diagnosis and Prognosis:

Major Duties and Responsibilities:
- Lead the development of next-generation technologies for vehicle system diagnosis, prognosis, and fault-tolerant controls as well as integration.
- Lead the development and execution of technical plans, including concept generation, development, implementation, and evaluation.
- Set research and development strategy, generate innovative ideas, and establish new research areas
- Lead technical discussions and reviews as an expert in related areas of responsibility.
- Maintain state-of-the-art knowledge in related areas of responsibility.
- Communicate ideas, plans and results effectively via presentations and written reports.
- Work effectively with peers, management, operations groups, and outside organizations.

Qualifications:

Basic Required Skills:
- PhD in Electrical, Controls, Mechanical, or Aerospace Engineering with demonstrated research capability or equivalent background
- 5-10 years of related industry experience
- Strong background in vehicle control, diagnosis, and prognosis systems analysis and synthesis.
- Strong background in system diagnosis and prognosis algorithm development and integration.
- Effective verbal and written communication skills.
- Excellent interpersonal and communication skills to work effectively with GM internal and external customers.

Basic Preferred Skills:
- 10+ years of related industry experience
- Track record of developing and deploying new technology
- Experience of project management
- Experience in remote diagnosis and prognosis.
- Experience in vehicle dynamics.

- Experience in environmental sensors, such as camera, radar, lidar.
- Experience in electromechanical actuators.
- Experience in Matlab/Simulink, dSpace rapid prototyping, ETAS tools
- Experience in large-scale data processing.
- Experience in hardware and software development

5.23. Researcher Engineer: South Dakota School of Mines & Technology, USA
Contributed by: Robb M. Winter, robb.winter@sdsmt.edu

BSLIM Research Engineer I

The South Dakota School of Mines & Technology seeks applicants for the position of BSLIM Research Engineer I in power and energy systems engineering. The ideal candidate will join the power research team, and perform research tasks in modeling and control of power systems. Responsibilities will include modeling key components in a power distribution system, such as generators, fuses, circuit breakers, cables and transformers; constructing simulation testbed systems; designing control logic for the power system; conducting related simulation/field tests; and analyzing and summarizing test data.

The candidate must have a Master's degree in electrical engineering, mechanical engineering or closely related field. Satisfactory written and oral communication skills are required. Priority will be given to a candidate with strong knowledge background in one or more fields of power electronics, system modeling, controls, and data analysis. Expertise in Matlab/Simulink and experiences in PSCAD will be a plus. Programming skills in other languages, such as C, C++, and Java, are welcomed. Industry experience is preferred.

Established in 1885, the South Dakota School of Mines & Technology is a science and engineering research university located in Rapid City, South Dakota. South Dakota Mines is a public university offering bachelor's, master's, and doctoral degrees in engineering and science. Known for our academic rigor, we maintain a 14:1 student-to-faculty ratio. Our students benefit from immersive learning experiences including undergraduate research, co-ops/internships, and numerous nationally competitive engineering teams. Our graduates have a 98% placement rate and an average starting salary of over $63,000. Our Research Programs are concentrated in four areas: energy and environment; materials and manufacturing; STEM education; and underground science. South Dakota Mines is a growing university that enrolls over 2800 students from 47 states and 46 countries.

South Dakota Mines is committed to recruiting and retaining a diverse workforce and offers an excellent comprehensive benefits package including paid medical and life insurance for our employees, as well as medical, dental and vision coverage for spouses and dependents; retirement plans; paid holidays; and a generous vacation and sick day allowance. Individuals interested in this position must apply online at http://www.sdsmt.edu/employment. Human Resources can provide accommodation to the online application process and may be reached at (605) 394-1203. Review of applications will begin December 29, 2015, and will continue until the position is filled. Employment is contingent upon completion of a satisfactory background investigation.

South Dakota School of Mines & Technology does not discriminate on the basis of sex, race, color, creed, national origin, ancestry, citizenship, gender, gender identification, transgender, sexual orientation, religion, age, disability, genetic information or veteran status in employment or the provision of service.

5.24. Research Engineer: GE Global Research, Germany
Contributed by: Axel Busboom, busboom@ge.com

Research Engineer Advanced Wind Turbine Controls

About us

GE Global Research - Europe employs approximately 200 engineers and scientists from more than 30 different countries. Our scientists and technologists come from a variety of disciplines and backgrounds, including chemistry, physics, mathematics, engineering, sciences and materials research.

Located in the heart of southern Germany, Global Research - Europe sits on the Garching campus of the Technical University of Munich. This creates a unique blend for our scientists to be in a university setting, while performing research in a world-class industrial lab that is dedicated to bringing new technologies to market. The facility also operates closely with technology teams at GE businesses across the globe, ensuring effective transition of breakthrough innovations from the lab into advanced products and services. Within the R&D community, the center maintains close partnerships with numerous universities, research institutions and technology companies in Germany and abroad. Current research at the facility focuses on automated manufacturing of composite parts, waste heat recovery for industrial and power applications, grid integration of renewable energies, molecular imaging for cancer diagnostics, high power electronics for stationary and mobile applications and advanced compressor technologies.

Responsibilities

You will be part of the "Controls and Embedded Systems" research group, an international team of highly qualified research engineers and scientists with backgrounds in controls and related disciplines. The group is conducting research on modeling, estimation, model based control, and data analytics. We closely work with various industrial GE businesses as well as academic and industry partners in collaborative research programs.

In this role, you will work on advanced controls for industrial applications, with a focus on modeling, estimation, control and optimization for onshore and offshore wind turbines and wind farms. You will provide your expertise, ideally both in the area of dynamic systems and controls and in the area of renewable energy generation. You will closely work with other GE Global Research sites and GE businesses worldwide. Your key responsibilities will include:

- Develop models for advanced wind turbine concepts for onshore and offshore applications
- Design and verify advanced control algorithms at a wind turbine level and at a wind farm level
- Work with GE businesses to identify their controls needs and formulate system requirements
- Keep abreast of developments on control system theory and renewable energy generation. Identify suitable opportunities for new technologies
- Participate in and lead projects from control system conception to implementation and validation
- Work with other engineering disciplines (mechanical, power electronics, etc.) to develop innovative solutions by using systems engineering and control approaches
- Implement and validate models and controllers in simulation and rapid-prototyping environments
- Document your results in invention disclosures, reports, conference papers, and presentations to all levels of management

Qualifications

- Doctorate in controls or a related discipline (or M.Sc. degree plus at least 3 years of relevant professional experience in advanced controls)
- Very good knowledge of linear and non-linear controls, dynamic systems, estimation, optimization, system identification

- Proficiency with MATLAB / Simulink
- Experience with implementation and validation of control algorithms for wind turbines, wind farms, or related industrial control applications
- Experience with controls-oriented modeling of wind turbines or wind farms
- Excellent academic track record and proven scientific achievements (please attach your publication list to your application)
- Excellent communication and presentation skills
- Can-do attitude
- Global mindset and customer focus
- Open, creative and flexible
- Willingness to travel internationally
- Fluency in English

Desired Qualifications
- Experience data driven system modeling
- Knowledge and experience in wind turbine aeroelastic simulation tool (e.g. in Bladed, FAST, Flex5)
- Industry and/or post-doc experience in control systems analysis, design, implementation, integration and verification
- Willingness to travel internationally

We look forward to receiving your online application at www.ge.com/careers (job #2469397).

5.25. Developer: Intelligent Fusion Technologies
Contributed by: Genshe Chen, gchen@intfusiontech.com

Intelligent Fusion Technologies (IFT) is a Research and Development (R&D) company focused on information fusion technologies from basic research to industry transition and product development and support. We are working on modeling, control, communication, signal/image/text processing, security, autonomy, and decision making in networked systems. We are looking for talented developers majoring in engineering (e.g., EE, ME, AE), computer science, and/or applied mathematics to join our multidisciplinary team as full-time employees or interns. In particular, we are looking for candidates having direct experience in one or several areas as follows:

Engineering Design
- Pattern recognition, image processing, video analysis;
- Full motion video/wide area motion imagery (WAMI) exploitation;
- Wireless communication;
- Cognitive radio network;
- Cyber security;
- Social network analysis, text analytics;
- RF circuit design, electromagnetic wave Propagation, and antenna design.

Control and Mathematics
- Game theoretic estimation and control;
- Graph theory;
- Robotics dynamic and control;
- Guidance, navigation and control for aerospace vehicle;

- Astrodynamics;

- Complex system modeling and simulation.

Software Design

- Cloud computing;

- Service Oriented Architecture;

- Open Architecture/ Open sources government off-the-shelf (GOTS) development;

- Geospatial Information System;

- Human Factors display technology and integration.

Candidate with a Ph.D. degree are preferred. Direct industry experience is a plus. The pay is competitive and can be negotiated.

For interested candidates, please send your resume to hr@intfusiontech.com.

5.26. System Analyst: Intuitive Surgical, USA
Contributed by: James Zhang, James.Zhang@IntuSurg.com

Intuitive Surgical, the global leader in surgical robots, has the following full time position in its Sunnyvale, CA headquarter. Enclosed is the job description. If you have the matching qualifications, send me your resume and links of related projects at James.Zhang@IntuSurg.com. Please start your email subject with "Full Time".

Primary Function of Position:
Intuitive Surgical, Inc. produces the da Vinci® Surgical System, a minimally invasive robotic surgery system that uses proprietary software control, advanced mechanics, and enhanced visualization to extend surgical technique and precision beyond the limits of the human hand. Systems Analysts perform a vital and wide-ranging role in Intuitive's product development. They are primarily responsible for generating, debugging and tuning the algorithms associated with Intuitive Surgical products. They provide analytic assistance to other engineering groups, such as modal analysis of new mechanisms or communications protocol design for new electrical hardware. Their role in user interface design requires a detailed familiarity with clinical issues and an ability to perceive products from a customer's perspective.

The Sr. Systems Analyst will investigate and resolve design issues that impact the performance of systems in the field or design issues related to the manufacturing process. The successful candidate will have both the technical depth to resolve complex control algorithm issues and the ability to work in an interdisciplinary team to troubleshoot higher level system issues. A strong sense of shared responsibility and shared reward is required as well as a commitment to high product quality.

Roles and Responsibilities:
* Resolve design issues related to instrument or robot mechanics, electro-mechanical controls, and software.
- Investigate and determine root cause of both latent and emerging defects in the existing population of deployed systems
- Tasks are related to issues found in the field or Manufacturing that require engineering investigation and redesign, including formal design verification testing
* Work in cross-functional teams to ensure all issues related to a design change are understood in advance of implementation
* Develop, implement, test and document solutions for issues according to corporate standard and departmental operating procedures

Skill/Job Requirements:

This position represents a core competitive capability for Intuitive. Specific requirements for the position are:

* MS or Doctorate in CS, EE, ME, or similar, and at least 5 years industrial experience
* Strong educational emphasis on control theory and practice
* Expertise in the modeling and compensation for
- Time delay
- Drive-train friction losses
- Mechanical hysteresis and back-lash
- Non-co-located sensors and actuators
* Demonstration of a rigorous experimental methodology
* Expertise in the practical implementation of tele-robotic systems, (e.g. experience with real time control systems, multi-tasking, embedded operating systems, etc.)
* An interest in the medical applications of haptics, robotics and machine vision
* Strong ability to isolate and debug mechanical, embedded hardware and software problems
* Ability to communicate effectively across all levels and organizations
* Ability to build and maintain relationships across supported organizations
* Excellent communication (written, oral), presentation and documentation skills
* Comfortable with all phases of the product development lifecycle including design, implementation, debug, verification, qualification, and transfer
* Experience with designing in an FDA or other regulated industry or for mission critical applications is desired; comfort with concepts of design input, design output, traceability, and risk analysis
* A real excitement to learn and get to the bottom of tough technical problems
* A passion for creating robust and reliable products
We are an AA/EEO/Veterans/Disabled employer
James Zhang, PhD
Intuitive Surgical, Inc.
1266 Kifer Road, Sunnyvale, CA 94086
Email: James.Zhang@IntuSurg.com

5.27. Intern: GE Global Research, Germany
Contributed by: Axel Busboom, busboom@ge.com

Intern (m/f) Formal Verification Human-Vehicle Interaction

About Us:

GE Global Research - Europe employs approximately 200 engineers and scientists from more than 40 different countries. Our scientists and technologists come from a variety of disciplines and backgrounds, including chemistry, physics, mathematics, engineering, sciences and materials research. Located in the heart of southern Germany, Global Research - Europe sits on the Garching campus of the Technical University of Munich. This creates a unique blend for our scientists to be in a university setting, while performing research in a world-class industrial lab that is dedicated to bringing new technologies to market. The facility also operates closely with technology teams at GE businesses across the globe, ensuring effective transition of breakthrough innovations from the lab into advanced products and services. Within the R&D community, the center maintains close partnerships with numerous universities, research institutions and technology companies in Germany and abroad.

Current research at the facility focuses on automated manufacturing of composite parts, waste heat recovery for industrial and power applications, grid integration of renewable energies, molecular imaging for cancer diagnostics, high power electronics for stationary and mobile applications and advanced compressor technologies.

The Controls and Embedded Systems (CES) Laboratory in Munich - where you will work - provides technology innovation in the areas of control systems for a wide range of applications as well as embedded systems development. CES is involved with worldwide customers in GE's Oil & Gas, Power & Water, Transportation and Energy Management businesses. The team focuses on control algorithm development - in particular fault accommodating control and nonlinear controls -, physics-based prognostics and health management (PHM) algorithms, high-integrity embedded systems, model-drivel development and V&V. The rapidly growing customer demands for dependable and resilient control systems, performance optimization, and Industrial Internet solutions open up new research and development opportunities for controls systems and embedded systems scientists and engineers.

Responsibilities
You will work in the context of the EU Horizon2020 project UnCoVerCPS (http://cps-vo.org/group/UnCoVerCPS) on control and verification of cyber-physical systems. In particular you will be studying the applicability of formal methods such as model checking for proving safety properties of human-vehicle systems, e.g. pilot-aircraft or driver-car systems.

- Model certain aspects and limitations of human capabilities, integrate these with the vehicle models and apply a tool chain developed in the UnCoVerCPS to this class of systems.
- Perform literature survey on modeling of human operators (pilots, drivers) in collaboration with our project partners
- Develop models of aspects of human operator behavior using GE-internal tools as well as tools developed in the EU project
- Integrate pilot / driver models with existing vehicle models
- Apply existing hybrid model checking tools to the integrated model
- Suggest and implement improvements of the tool chain
- Document and present your results

Qualifications
- Student of Computer Science or a related discipline
- Knowledge of automata theory for discrete systems
- Knowledge of model checking / theorem proving
- Working knowledge of modeling in Matlab/Simulink, Stateflow or similar
- Knowledge of temporal logics (LTL, CTL-)
- Excellent communication skills
- Fluency in English
- Currently enrolled at a university

Desired Qualifications
- Knowledge of tools for model checking and/or theorem proving, e.g. NuSMV, SPIN, Isabelle or ACL2s
- Knowledge of hybrid dynamic systems and their automata representation
- Knowledge of reachability analysis
- Knowledge of temporal logics for continuous systems

We look forward to receiving your online application at http://www.ge.com/careers (job #2418696).