E-LETTER on Systems, Control, and Signal Processing
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Welcome to the 331 issue of the Eletter, available electronically here.
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5.5 PhD: CRAN & CEA LIST, France
5.6 PhD: Delft University of Technology, Netherlands
5.7 PhD: University of Texas at Dallas, USA
5.8 Research Assistant: University of Sheffield, UK
5.9 PostDoc: Texas A&M University-Qatar, Qatar
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1. IEEE CSS Headlines

1.1. IEEE Control Systems Society Publications Content Digest

Contributed by: Elizabeth Kovacs, ekovacs2@nd.edu

CSS Publications Content Digest The IEEE Control Systems Society Publications Content Digest is a novel and convenient guide that helps readers keep track of the latest published articles. The CSS Publications Content Digest, available at http://ieeecss.org/publications-content-digest provides lists of current tables of contents of the periodicals sponsored by the Control Systems Society.
Each issue offers readers a rapid means to survey and access the latest peer-reviewed papers of the IEEE Control Systems Society. We also include links to the Society's sponsored Conferences to give readers a preview of upcoming meetings.

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1.2. IEEE Transactions on Automatic Control

Contributed by: Elizabeth Kovacs, ekovacs2@nd.edu

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Contributed by: Denise Joseph, dejoseph@bu.edu

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Volume 3 (2016), Issue 1 (March)

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1.4. IEEE Control Systems Society Technically Cosponsored Conferences

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

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

- The 35th Chinese Control Conference. Chengdu, China. Jul 27 - Jul 29, 2016. http://ccc2016.swjtu.edu.cn/
- 20th International Conference on System Theory, Control and Computing (ICSTCC 2016). Sinaia, Romania. Oct 13 - Oct 15, 2016. http://ace.ucv.ro/icstcc2016/
- 2017 Indian Control Conference. Guwahati, India. Jan 4 - Jan 6, 2017. http://icc.org.in/
- 14th International Conference on Control, Automation, Robotics and Vision (ICARCV 2016). Phuket, Thailand. Nov 13 - Nov 15, 2016. http://www.icarcv.org/2016

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

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1.5. CFP: IEEE-CSS Outreach Fund

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

The IEEE CSS Outreach Task Force is providing notice that the submission window for proposals to the IEEE-CSS Outreach Fund for its 2016 spring solicitation will be held from May 2 to 27, 2016. Information regarding the program can be found in:

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

Inquiries, notices of intent, and requests for application forms should be made directly to Daniel E. Rivera, Outreach Task Force Chair, at daniel.rivera@asu.edu.

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2. Books

2.1. Nonsmooth Mechanics: Models, Dynamics and Control

Contributed by: Bernard BROGLIATO, bernard.brogliato@inria.fr

Now in its third edition, this standard reference is a comprehensive treatment of nonsmooth mechanical systems refocused to give more prominence to issues connected with control and modelling. It covers Lagrangian and Newton-Euler systems, detailing mathematical tools such as convex analysis and complementarity theory. The ways in which nonsmooth mechanics influence and are influenced by well-posedness analysis, numerical analysis and simulation, modelling and control are explained. Contact/impact laws, stability theory and trajectory-tracking control are given detailed exposition connected by a mathematical framework formed from complementarity systems and measure-differential inclusions. Links are established with electrical circuits with set-valued nonsmooth elements as well as with other nonsmooth dynamical systems like impulsive and piecewise linear systems. Please visit http://www.springer.com/us/book/9783319286624 for more informations.

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3. Journals

3.1. Contents: Automatica

Contributed by: Elisa Capello, automatica@polito.it

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http://www.sciencedirect.com/science/journal/00051098/66

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- “Leader-follower containment control over directed random graphs”, Zhen Kan, John M. Shea, Warren E. Dixon, pages 56-62.

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3.2. Contents: Proceedings of the Institute of Applied Mathematics

Contributed by: proceedings.iam@gmail.com

Proceedings of the Institute of Applied Mathematics
V.4, N.2, 2015
ISSN 2225-0530

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3.3. Contents: Nonlinear Studies

Contributed by: Seenith Sivasundaram, seenithi@gmail.com

Journal Nonlinear Studies
Vol 23, No 1 (2016)
http://www.nonlinearstudies.com/index.php/nonlinear/issue/view/148

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3.4. Contents: Mathematics in Engineering Science and Aerospace

Contributed by: Seenith Sivasundaram, seenithi@gmail.com

Journal Mathematics in Engineering Science and Aerospace (MESA), Vol 7, No 1 (2016)
http://www.nonlinearstudies.com/index.php/mesa/issue/view/144

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3.5. Contents: Mathematics of Control, Signals, and Systems

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

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Volume 28, Number 1
http://link.springer.com/journal/498/28/1

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3.6. Contents: TWMS Journal of Pure and Applied Mathematics

Contributed by: Gamar Mammadova, f_aliev@hotmail.com

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

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- Jürgen Herp, Niels L. Pedersen, Esmaeil S. Nadimi, Wind turbine performance analysis based on multivariate higher order moments and Bayesian classifiers,Pages 204-211
- Laurent Cauffriez, Sébastien Grondel, Pierre Loslever, Christophe Aubrun, Bond Graph modeling for fault detection and isolation of a train door mechatronic system,Pages 212-224

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3.8. Contents: International Journal of Applied Mathematics and Computer Science

Contributed by: amcs@uz.zgora.pl

International Journal of Applied Mathematics and Computer Science (AMCS)
2016, Volume 26, Number 1 (March)
Regular issue

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3.9. Contents: International Journal of Advanced Mechatronic Systems

Contributed by: Mingcong Deng, deng@cc.tuat.ac.jp

International Journal of Advanced Mechatronic Systems, vol. 6, no. 5, 2015
The articles can be retrieved on:
http://www.inderscience.com/info/inarticletoc.php?jcode=ijamechs&year=2015&vol=6&issue=5
Contents:

- Optimal PID control of DC motor with ABC and PSO algorithms, Haiquan Wang; Yingyue Hu; Wudai Liao; Tongbin Yan pp. 193-200
- Development of an active wire tension system for improving the performance of brushless direct current coil winding machine, Van Tu Duong; Dae Hwan Kim; Hak Kyeong Kim; Sang Bong Kim pp. 201-210
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International Journal of Advanced Mechatronic Systems, vol. 6, no. 6, 2015

The articles can be retrieved on:
http://www.inderscience.com/info/inarticletoc.php?jcode=ijamechs&year=2015&vol=6&issue=6
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3.10. Contents: International Journal of Control, Automation, and Systems

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

International Journal of Control, Automation, and Systems (IJCAS)
ISSN: 1598-6446
http://www.springer.com/engineering/robotics/journal/12555

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3.11. Contents: IMA Journal of Mathematical Control and Information

Contributed by: Suzanne Eves, suzie.eves@oup.com

Contents, IMA Journal of Mathematical Control and Information 33:01

A new issue of IMA Journal of Mathematical Control and Information is now available online.
The Table of Contents below can be viewed at:
http://www.oxfordjournals.org/page/6857/1

- S. E. Rebiai and F. Z. Sidi Ali, Uniform exponential stability of the transmission wave equation with a delay term in the boundary feedback
http://www.oxfordjournals.org/page/6857/2
- De-Feng He, Hua Huang, and Qiu-Xia Chen, Stabilizing model predictive control of time-varying non-linear systems using linear matrix inequalities
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- Yuan Chen, Guangying Ma, Shuxia Lin, Shurong Ning, and Jun Gao, Computed-torque plus robust adaptive compensation control for robot manipulator with structured and unstructured uncertainties
http://www.oxfordjournals.org/page/6857/4
- Victor N. Zhermolenko and Alex S. Poznyak, Necessary and sufficient conditions for stabilizability of planar

parametrically perturbed control systems
http://www.oxfordjournals.org/page/6857/5
- Wenying Xu, Tasawar Hayat, Jinde Cao, and Min Xiao, Hopf bifurcation control for a fluid flow model of internet congestion control systems via state feedback
http://www.oxfordjournals.org/page/6857/6
- Ying Feng Shang, Gen Qi Xu, and Xuan Li, Output-based stabilization for a one-dimensional wave equation with distributed input delay in the boundary control
http://www.oxfordjournals.org/page/6857/7
- Do Duc Thuan, Nguyen Huu Du, and Nguyen Chi Liem, Stabilizability and robust stabilizability of implicit dynamic equations with constant coefficients on time scales
http://www.oxfordjournals.org/page/6857/8
- Jia Liu, Liuxiao Guo, Manfeng Hu, Zhenyuan Xu, and Yongqing Yang, Leader-following consensus of multi-agent systems with delayed impulsive control
http://www.oxfordjournals.org/page/6857/9

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4. Conferences

4.1. American Control Conference

Contributed by: Rifat Sipahi, rifat@coe.neu.edu

2016 American Control Conference will take place in the heart of Boston, on July 6-8, 2016:

http://acc2016.a2c2.org

with workshops planned for July 5.

Different from previous years, this year's Conference features a number of new and exciting programs. One of them is the ** APPLICATIONS FRIDAY ** which will take place on Friday July 8, 2016

http://acc2016.a2c2.org/apps_friday.html

The programs on that Friday aim to reach a broad audience with minimal one-day registration fees, with the objective to bring control systems to everyone's life via public talks, tutorials, company exhibits, special lunch time sessions, and undergraduate student poster competitions.

Details can be found at the conference website.

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4.2. IFAC Conference on Cyber-Physical & Human-Systems

Contributed by: Sandra Hirche, hirche@tum.de

CfP
1st IFAC Conference on Cyber-Physical&Human-Systems (CPHS 2016)
http://www.cphs2016.org/, Florianopolis, Brazil, 7-9 December 2016.

I. Call for Papers : can be downloaded by http://ifaccphs.web-events.net/call-for-papers/
II. Contact : CPHumSys2016@gmail.com
III. Important dates:
- Paper submission deadline: May 20, 2016
- Paper acceptance decision: July 20, 2016
- Final paper submission: August 15, 2016

Objectives: CPHS 2016 aims to stimulate the brainstorming on the topic of cyber-physical&human-systems by discussing recent research results, formulating new theoretical control challenges to cope with needs in the joint cyber-physical&Human-systems control, identifying new application areas requesting research advances on the topic and discussing its prospective and impacts.

Approach and Structure :
1) To join together multidisciplinary competencies (The interplay of humans with highly automated and connected systems with complex dynamics and complex controllers or the design of complex control systems to assist the humans need a deep study that requires multidisciplinary joint efforts.

2) To consider different application areas (healthcare, robotics, operation in hazardous environments, transport - ground (automotive, railway), air, space, etc) according to four scenarios:
- Human-Machine Symbiosis
- Humans as operators of complex engineering systems
- Humans as agents in multi-agent systems
- Humans as elements in controlled systems
(The conference topics are organized according to these four scenarios and the complete list is accessible via : http://www.cphs2016.org/scope-topics/)

3) To promote exchanges between industry and universities.

Plenaries: The CPHS 2016 Plenaries will include (http://www.cphs2016.org/keynote-speakers/) .
- Homayoon Kazerooni
- Franck Mars
- Bérénice Mettler
- Gérard Roucairol
- Petr Stluka

We look forward to receiving your contributions and it will be a great pleasure for us to host you in Florianopolis.

Prof Sandra Hirche, CPHS 2016 Steering Committee, on behalf of the CPHS 2016 General Chair, Program Chair, the Steering Commitee board, the Organizing and Program Committees.

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4.3. IFAC International Conference on Foundations of Systems Biology in Engineering

Contributed by: Rolf Findeisen, rolf.findeisen@ovgu.de

IFAC FOSBE 2016
October 9-12, 2016, Magdeburg

On behalf of the organizing committee, we are pleased to invite you to submit papers and proposals for invited sessions to the 6th International Conference on Foundations of Systems Biology in Engineering (FOSBE 2016), which will take place in the historical city of Magdeburg, Germany, October 9-12, 2016.

Computational and engineering methods are at the core of systems biology, synthetic biology and systems medicine. The integration of quantitative data from a variety of sources together with model inference and analysis techniques as well as control theory have proven valuable to decipher biological systems ranging from intracellular mechanisms to human disease.

FOSBE aims at stimulating discussion and fostering collaborations among scientists, from method to theory oriented engineers to experimental and theoretical biologists, interested in or working on systems thinking applied to life sciences. Major conference topics are:

- Modelling of complex biological systems
- Multi-scale and multi-omics data integration and modelling
- Network interference and modeling (signaling, regulation, metabolic)
- Analysis and modeling of stochastic and heterogeneous systems,
- Dynamics and control of biological systems
- Design and control of synthetic biological systems and circuits
- Systems biology for (red, green, blue and white) biotechnology
- Systems medicine
- Synthetic biology
- Next generation methods and tools for systems and synthetic biology

MAGDEBURG

FOSBE 2016 will take place in the historical city of Magdeburg, Germany, at the Elbe river. Magdeburg and the federal state of Saxony-Anhalt have many historical sights to visit. It is often called the birth cradle of German history and culture.

For detailed information about the 6th FOSBE, visit http://www.fosbe2016.ovgu.de.

Deadlines

invited session proposals 1 APR 2016
regular & invited papers,
workshop proposals 10 APR 2016
abstracts contributions 15 JUN 2016
Acceptance notification 30 JUN 2016
Final contributions 15 JUL 2016

Rolf Findeisen (NOC Chair) Eva Balsa-Canto (IPC Chair)
Thomas Eißing (NOC Industrial Co-Chair), Kristel Bernaerts (IPC Co-Chair)

Conference Website: http://www.fosbe2016.ovgu.de.

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4.4. International Workshop on Applied Verification for Continuous and Hybrid Systems

Contributed by: Sergiy Bogomolov, sergiy.bogomolov@ist.ac.at

CALL FOR PARTICIPATION

ARCH 2016

3rd International Workshop on Applied Verification for Continuous and Hybrid Systems

CPSWeek 2016, Vienna, Austria, April 11, 2016

http://cps-vo.org/group/ARCH

Topics

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. 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

Registration
http://www.cpsweek.org/2016/reg.html
Early registration deadline: *March 18, 2016*

Program
08:00 Registration

09:00-10:25 Invited Talk and Benchmarks I
- Invited Talk: Dirk Beyer: Reliable and Reproducible Competition Results
- Houssam Abbas, Kuk Jin Jang and Rahul Mangharam: Nonlinear Hybrid Automata Model of Excitable Cardiac Tissue
- Sidharta Andalam, Avinash Malik, Partha Roop and Mark Trew: Hybrid automata model of the heart for formal verification of pacemakers

10:25-11:00 Coffee break

11:00-12:20 Benchmarks II
- Scott Livingston and Vasumathi Raman: Chains of Integrators as a Benchmark for Scalability of Hybrid Control Synthesis
- Andrew Sogokon, Taylor T Johnson and Khalil Ghorbal: Benchmarks for Non-linear Continuous System Safety Verification
- Omar Beg, Ali Davoudi and Taylor T Johnson: Formal Verification of Charge Pump Phase-Locked Loop and Full Wave Rectifier Through Reachability Analysis
- Simone Schuler, Fabiano Daher Adegas and Adolfo Anta: Hybrid modelling of a wind turbine

12:20-14:00 Lunch

14:00-15:20 Benchmarks III and Tools I
- Sergiy Bogomolov, Christian Herrera and Wilfried Steiner: Benchmark for Verification of Fault-Tolerant Clock Synchronization Algorithms
- Hoang-Dung Tran, Luan Viet Nguyen and Taylor T Johnson: Large-Scale Linear Systems from Order-Reduction
- Stanley Bak, Sergiy Bogomolov and Christian Schilling: High-level Hybrid Systems Analysis with Hypy
- Ibtissem Ben Makhlouf, Norman Hansen and Stefan Kowalewski: HyReach: A Reachability Tool for Linear Hybrid Systems Based on Support Functions

15:20-16:00 Coffee break

16:00-17:20 Tools II
- Axel Busboom, Simone Schuler and Alexander Walsch: FormalSpec - semi-automatic formalization of system requirements for formal verification
- Dalibor Drzajic, Nikolaos Kariotoglou, Maryam Kamgarpour and John Lygeros: A Semidefinite Programming Approach to Control Synthesis for Stochastic Reach-Avoid Problems
- Heinz Riener, Robert Koenighofer, Goerschwin Fey and Roderick Bloem: SMT-Based CPS Parameter Synthesis and Repair
- Matthias Althoff and Dmitry Grebenyuk Implementation of Interval Arithmetic in CORA 2016

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4.5. International Workshop on Hybrid Systems Biology

Contributed by: Eugenio Cinquemani, eugenio.cinquemani@inria.fr

HSB 2016: The 5th International Workshop on Hybrid Systems Biology
20-21 October 2016, Grenoble (France)
http://hsb2016.imag.fr/
Proceedings in Springer LNCS/LNBI

The 5th International Workshop on 'Hybrid Systems Biology' (http://hsb2016.imag.fr/) will be held on October 20th and 21st in Grenoble (France). Previous editions have been held in Newcastle upon Tyne (UK), Taormina (Italy), Vienna (Austria, at VSL 2014), and Madrid (Spain, co-located with Madrid Meet 2015).

Prior to the conference, on October 19, the organization of a one-day workshop with renowned invited speakers is being considered. Registration dates, procedures and costs will be posted in due time on the conference website. Please refer to the conference website for constantly updated information.

IMPORTANT DATES
Initial submission: June 16, 2016
Notification: July 16, 2016
Final Submission: August 1, 2016

Accepted submissions are for papers and posters/demos (see further below)

TOPICS OF INTEREST
HSB is a single-track Systems Biology workshop with emphasis on hybrid approaches in a general sense. Hybrid dynamical modelling but also other dynamical modelling approaches are equally part of the scope of the workshop. Interdisciplinary contributions, such as combining modelling, analysis, algorithmic and experimental techniques from different areas, are especially welcome.

For a list of topics of interest, please visit the conference website http://hsb2016.imag.fr/

CALL FOR CONTRIBUTIONS
We solicit high-quality submissions, to be refereed by the Program Committee below, to be included in the oral presentation sessions of the workshop. Accepted papers will be published in a conference proceedings volume of the Springer LNCS/LNBI series (http://www.springer.com/lncs).

Submitted papers shall describe original work that has not been previously published and is not under review for publication elsewhere. We will consider full papers (about 15 pages in LNCS style; full-blown research work contributing theoretical analysis, methods, algorithms for biology/biomedicine, as well as novel results on biological case studies) and short papers (about 6 pages in LNCS style; work in progress, tool papers and small case studies).

In addition we accept submissions for posters and tool demonstration, to be included in a dedicated poster/demo session of the workshop, in the form of one-page poster/demo abstract (concise description of the research topic, ongoing work, first results or advancements on existing results, objectives and features or further developments of a new or improved tool). Abstracts and posters will not be published. Suitable contributions that could not be included in the workshop oral presentation sessions will be reconsidered for the poster/demo session.

Papers should be written in English, and should not exceed 6 (short papers) or 15 pages (full papers), inclusive of references, and have to be formatted in LNCS style. Additional material may be included in a clearly marked appendix but will not be included in the published version. Papers need to be submitted electronically as PDF files via the EasyChair online submission system (https://easychair.org/conferences/?conf=hsb2016)

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4.6. International Workshop on Symbolic and Numerical Methods for Reachability Analysis

Contributed by: Sergiy Bogomolov, sergiy.bogomolov@ist.ac.at

CALL FOR PARTICIPATION

SNR 2016

2nd International Workshop on Symbolic and Numerical Methods for Reachability Analysis

April 11th, 2016, Vienna, Austria

Affiliated with CPSWeek 2016

https://snr2016.pages.ist.ac.at/

Topics

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
- Tools, benchmarks, and case studies

Registration

http://www.cpsweek.org/2016/reg.html

Early registration deadline: *March 18, 2016*

Invited talks

- Stylianos Basagiannis (United Technologies Research Center, Ireland) Formal Verification towards Software Safety-Critical Certification of Airborne Systems under DO-178C
- Thao Dang (Verimag, France) Template Complex Zonotopes: A New Set Representation for Verification of Hybrid Systems
- Walid Taha (Halmstad University, Sweden) Accurate Rigorous Simulation Should be Possible for Good Designs

Program

9:00-10:30 Session 1: Validated simulation

- 9:00-10:00 Invited talk: Walid Taha (joint work with Adam Duracz and Ference Bartha). Accurate Rigorous Simulation Should be Possible for Good Designs
- 10:00-10:30 Adrien Le Coent, Julien Alexandre Dit Sandretto, Alexandre Chapoutot and Laurent Fribourg. Control of Nonlinear Switched Systems Based on Validated Simulation

11:00-12:30 Session 2: Formal methods in industry

- 11:00-12:00 Invited talk: Stylianos Basagiannis. Software Certification of Airborne Cyber-Physical Systems under DO-178C
- 12:00-12:30 Podium discussion: Formal Methods: Bridging the Gap Between Academic and Industrial Research

14:00-15:30 Session 3: Reachability analysis
- 14:00-15:00 Invited talk: Thao Dang (joint work with Santosh Arvind Adimoolam). Template complex zonotopes: A new set representation for verification of hybrid systems
- 15:00-15:30 Stefan Ratschan. Computing ODE-barriers in Hyper-rectangles

16:00-17:30 Session 4: Discrete-time and probabilistic systems
- 16:00-16:30 Riccardo Vignali and Maria Prandini. Model reduction of discrete time hybrid systems: A structural approach based on observability
- 16:30-17:00 Yang Gao and Martin Fränzle. CSiSAT: A Satisfiability Solver for SMT Formulas with Continuous Probability Distributions
- 17:00-17:30 Kristóf Marussy, Attila Klenik, Vince Molnár, András Vörös, Miklos Telek and Istvan Majzik. Configurable Numerical Analysis for Stochastic Systems

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4.7. 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 March 2, 2016
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
1050 Bruxelles, Belgium email: ants@iridia.ulb.ac.be

Important Dates
Submission deadline March 14, 2016 (extended)
Notification of acceptance May 4, 2016
Camera ready copy May 18, 2016
Conference September 7-9, 2016

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4.8. 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(SUN)-19(WED), 2016. The aim of the ICCAS is to bring together researchers and engineers worldwide to present their latest works, and disseminate the state-of-the-art technologies related to control, automation, robotics, and systems.

Important Dates
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)

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

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

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

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4.9. International Symposium on Distributed Autonomous Robotic Systems

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

Second Call for Papers

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

Vicon Motion Systems is a Platinum Sponsor of DARS 2016

ABOUT DARS

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

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

Previous editions of DARS took place in 1992, 1994, and 1996 in Japan (Riken, Wako); Karlsruhe, Germany (1998); Knoxville, Tennessee, USA (2000); Fukuoka, Japan (2002); Toulouse, France (2004); Minneapolis, Minnesota, USA (2006); Tsukuba, Ibaraki, Japan (2008); Lausanne, Switzerland (2010); Baltimore, Maryland, USA (2012); and Daejeon, Korea (2014).

PUBLICATION DETAILS

All accepted contributions will be included as full-length papers in the Proceedings of DARS 2016. The

proceedings will be published in the Springer STAR series (Springer Tracts in Advanced Robotics): http://www.springer.com/series/5208

KEYNOTE SPEAKERS

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

SUBMITTING TO DARS 2016

Papers should be formatted according to the style files of Springer Tracts in Advanced Robotics. The page limit is 12 pages.

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

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

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

IMPORTANT DATES

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

SPONSORS & EXHIBITORS

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

AWARDS

The following awards will be presented at the conference:

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

SOCIAL MEDIA
Follow us on social media for all the latest updates.
Facebook: https://www.facebook.com/DARSSymposium
Twitter: https://twitter.com/DARS2016
Google+: https://plus.google.com/104027908184261516130

More information at http://dars2016.org

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4.10. International Conference on Instrumentation, Control and Automation

Contributed by: Tua Tamba, tamba@instrument.itb.ac.id

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

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 is fully organized by the Instrumentation & Control Research Group of the Institut Teknologi Bandung, Indonesia. Details of the conference may be found at http://ica2016-itb.org/index.php/call-for-paper/.

Important Dates:
Submission site open: January 11, 2016
Initial submission due: April 30, 2016
Decision notification: May 31, 2016
Workshop proposal submission due: 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.

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4.11. ACM International Conference on Systems for Energy-Efficient Built Environments

Contributed by: Pine Liu, pine@cmu.edu

ACM BuildSys 2016 Call for Papers

November 16-17, 2016
Stanford, California — co-located with ACM SenSys 2016
http://buildsys.acm.org/2016/

BuildSys has established itself as the premier conference for researchers and practitioners working to develop and optimize smart infrastructure systems that are driven by sensing, computing, and control functions. The review process is very thorough, and publications are considered to have the same value as journal publications in engineering fields.

Important Dates:
Abstract registration: June 10th, 2016 AOE
Paper submission deadline: June 17th, 2016 AOE
Paper notification: August 15th, 2016 AOE
Poster/Demo submission deadline: August 29th, 2016 AOE
Poster/Demo notification deadline: September 7th, 2016 AOE
Camera ready submissions: September 14, 2016 AOE

Advances in the effective integration of networked sensors, building controls, and physical infrastructure are transforming our society, allowing the formation of unprecedented built environments and interlocking physical, social, cyber challenges. Built environments, including buildings and critical urban infrastructure, account for over half of society's energy consumption and are the mainstay of our nation's economy, security and health. As a result, there is a broad recognition that systems optimizing explicitly for the built environment are particularly important in improving our society, e.g., by increasing its sustainability and enhancing people's quality-of-life. These systems represent the foundation for emerging "smart cities".

The 3rd ACM International Conference on Systems for Energy-Efficient Built Environments (BuildSys 2016) will be held November 16-17th, 2016 at Stanford University in Palo Alto, California. We invite original contributions in the areas of intelligent systems and applications for the built environment. BuildSys particularly emphasizes approaches that improve energy efficiency, reduce costs, increase performance, and add novel functionality for improving users' comfort and experience. BuildSys' scope is broad, encompassing all systems within the built environment of the urban fabric, including not only buildings but also critical infrastructure systems, such as water, power, communications, and transportation that will make up the "smart cities" of the future. BuildSys has established itself as the premier conference for researchers and practitioners working to develop and optimize smart infrastructure systems that are driven by sensing, computing, and control functions.

Submission Types:
We solicit three types of original submissions:
* Regular papers for oral presentation (10 pages)
* Notes papers for oral presentation (4 pages)
* Technical posters and demos (2 pages)

Topics:
Papers are invited in all emerging aspects of information-driven systems for the built environment. Topics of interest include but are not limited to the following:
* Sensing and control systems for managing urban infrastructure systems, such as water supply and distribution networks, wastewater treatment systems, electrical grids, transportation networks, etc.;
* Sensing, actuation and management of electrical loads in residential, commercial and industrial settings;
* Novel sensor methodologies, sensor networks and applications that enhance energy efficiency, energy reliability, durability and occupant comfort;
* Systems that integrate infrastructure with the emerging smart grid to provide demand response and ancillary services and/or manage utility costs;
* Modeling, simulation, optimization, and control of heating, cooling, lighting, ventilation, water usage and other energy flows in built environments;
* Distributed generation, alternative energy, renewable sources, and energy storage in buildings;
* Emerging communication standards for data collection, energy control, or interoperation of disparate devices or systems;

* Human in the loop sensing and control for efficient usage of electricity, gas, heating, water;
* New socio-technical systems for innovative applications and services to enable more livable, workable, sustainable, and connected communities;
* Localization and contextual computing for increased human-infrastructure interactions;
* Security and Privacy issues for the built environments;
* Optimizations interconnected and interdependent systems-of-systems, such as water, energy, or transportation systems

Submission Guidelines:
Submitted papers must be unpublished and must not be currently under review for any other publication. Paper submissions should be no more than the indicated page count and must follow a double column format. All figures, appendices, and references must fit within this page limit. Paper reviewing is single-blind and submissions should list author names on the front page. Regular and short papers must be submitted through the BuildSys submission site. Requests relating to the technical program and deadlines should be sent to the TPC co-chairs.

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4.12. ACM Conference on Embedded Networked Sensor Systems

Contributed by: Pine Liu, pine@cmu.edu

Call for Papers: The 2016 ACM Conference on Embedded Networked Sensor Systems (SenSys 2016)
November 16-17, 2016
Stanford, California
http://sensys.acm.org/2016/

The 14th ACM Conference on Embedded Networked Sensor Systems (SenSys 2016) introduces a highly selective, single-track forum for research on systems issues of sensors and sensor-enabled smart systems, broadly defined. Systems of smart sensors will revolutionize a wide array of application areas by providing an unprecedented density and fidelity of instrumentation. They also present various systems challenges because of resource constraints, uncertainty, irregularity, mobility, and scale. This conference provides an ideal venue to address research challenges facing the design, development, deployment, use, and fundamental limits of these systems. Sensing systems require contributions from many fields, from wireless communication and networking, embedded systems and hardware, energy harvesting and management, distributed systems and algorithms, data management, and applications, so we welcome cross-disciplinary work.

Important Dates:
- Paper Registration and Abstract: April 3, 2016, AOE.:
- Paper Submission Deadline: April 10, 2016, AOE.:
- Notification of Paper Acceptance: July 17, 2016.:

Note: These are hard deadlines. No extension will be granted.

Sensors have become an essential part of computing systems and applications. Computing today is increasingly characterized by ubiquitous, information-rich sensors that produce massive quantities of data about the physical world. This new era of computing is driving important new systems issues, and requires new system-level approaches and design principles.

The ACM Conference on Embedded Networked Sensor Systems (SenSys 2016) is a computer systems conference focused on the architecture, design, implementation, and performance of sensors, broadly defined, as well as sensor-enabled smart systems. ACM SenSys brings together academic, industry, and government professionals to a single-track, highly selective forum on networked sensing design, implementation, and

applications. It is the premier forum to discuss systems issues that arise specifically due to sensing. SenSys takes a broad view on the areas of computing that are relevant to the future of sensor systems, and topics of interest include but are not limited to the following::
- New technology, platforms and hardware designs:
- Systems software:
- Low power operation, energy harvesting, and energy management:
- Applications and deployment experiences:
- Networking and protocols for embedded devices and the Internet:
- Ubiquitous, mobile and pervasive systems:
- Actuation and control (cyber-physical systems):
- Key services as time and location estimation:
- Data storage, retrieval, processing, and management:
- Wearable and human-centric devices:
- Fault-tolerance and reliability:
- Data quality, integrity, and trustworthiness:
- Security and privacy:
- Programmability and manageability of sensor networks:
- Compelling challenge papers grounded in technology trends:

We invite technical papers describing original ideas, ground-breaking results, and/or real-world experiences involving innovative sensor systems. Successful submissions will explain why the topic is relevant to a vision of the future of sensing systems. Submissions will be judged on originality, significance, clarity, relevance, and correctness. In addition to citing relevant, published work, authors must cite and relate their submissions to relevant prior publications of the their own. Ethical approval for experiments with human subjects should be demonstrated as part of the submission.

Submission Guidelines::
Submissions must be full papers, at most 12 single-spaced 8.5" x 11" pages, including figures, tables,with additional two pages for references, in two-column format, using 10-point type on 12-point (single-spaced) leading, with a maximum text block of 7" wide x 9" deep with an inter-column spacing of .25". Authors must make a good faith effort to anonymize their submissions. Papers that do not meet the size, formatting, and anonymization requirements will not be reviewed. Accepted submissions will be available on the ACM digital library at least one week before the conference.

Latex Class and Sample Latex Files
You can use the sensys-proc.cls file in this zip file. There is also a template LaTeX file for your use. Please do not modify any spacing parameters. We successfully typeset Karthik et al.'s Sensys 2011 paper on Karma with this style file and tested on the submission site.
All papers must be submitted through the conference submission site:
http://hotcrp.andrew.cmu.edu/sensys2016/

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4.13. European Conference on Computational Optimization

Contributed by: Panos Patrinos, panos.patrinos@esat.kuleuven.be

EUCCO2016, the 4th European Conference on Computational Optimization, will be held in Leuven, Belgium, September 12 -14, 2016.

The conference is organised by the University of Leuven, Center of Excellence on Optimization in Engineering

(OPTEC), and by the TEMPO Marie Curie Initial Training Network: Training in Embedded Predictive Control and Optimization.

The conference aims to bring together researchers who are active in the areas of computational optimization, algorithms and applications. EUCCO2016 will have special emphasis on Embedded Optimization and Optimization in Engineering, but it will also continue the traditional EUCCO focus on large scale optimization, optimization with partial differential equations, and numerical optimization algorithms and software.

Invited plenary speakers are: Stephen Boyd (Stanford, USA), Yurii Nesterov (Louvain, Belgium), Sina Ober-Bloebaum (Oxford, UK), Colin Jones (Lausanne, Switzerland), Niels Aage (Lyngby, Denmark), Marc Teboulle (Tel-Aviv, Israel), and Boris Vexler (Munich, Germany).

For additional information, please visit the conference webpage http://www.eucco2016.com/.

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4.14. 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)

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4.15. Workshop on ICT Research and Innovation for Sustainable Economic and Social Development in ASEAN

Contributed by: Francoise Lamnabhi-Lagarrigue, Francoise.Lamnabhi-Lagarrigue@l2s.centralesupelec.fr

RISE'2016: Workshop on ICT Research and Innovation for Sustainable Economic and Social Development in ASEAN - 9th & 10th May 2016 - Hanoi, Vietnam
http://mica.edu.vn/RISE2016/

RISE 2016 is organized in conjunction with ASEAN-EU STI Days on 10-12 May 2016 (http://www.stidays.net). The objectives of the workshop are: (1) to bring together European and ASEAN experts and PhD students for brainstorming and exchanging very recent ICT research and developments as well as societal challenges and to discuss their social impact, (2) to reinforce and increase ICT research and innovation collaborations between Europe and South East Asia in these domains with particular attention to the specificities in ASEAN countries [Brunei Darussalam, Indonesia, Laos, Myanmar, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam], and (3) to contribute to the reinforcement of collaborative research links between EU and ASEAN ICT specialists.

Five topics :
1) Energy efficiency and reduction of pollution by ICT,
2) Water systems management,
3) Building management and control,
4) Smart cities & ICT systems for rural areas, and
5) E-services: promoting access to ICT for economic and social development.

Free registration (deadline: 15 April 2016)
Programme, see http://www.mica.edu.vn/RISE2016/technical-program

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4.16. Symposium on Management of Future Motorway and Urban Traffic Systems

Contributed by: Claudio Roncoli, croncoli@dssl.tuc.gr

The Symposium on "Management of Future motorway and urban Traffic Systems" will take place on June 2-3, 2016, in Chania, Greece.

The Symposium will cover the subjects of traffic control, estimation, and modelling of motorway and urban networks, with particular emphasis on the presence of advanced vehicle communication and automation technologies. Considering the lack of conferences focusing exclusively on future traffic management systems, and since it is expected that the interest of our research community in this specific research area will be increased in the future, we aim at bringing together researchers working on this field.

We invite interested practitioners, researchers, students, and consultants to participate in the Symposium (without presentation). Please visit the website (http://mfts2016.tuc.gr) for updates and registration procedure.

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4.17. CFP: IET Control Theory & Applications

Contributed by: Junfeng Wu, junfengw@kth.se

CALL FOR PAPERS
IET Control Theory & Applications
Special Issue on "Resource-efficient Control in Cyber-Physical Systems"
http://digital-library.theiet.org/content/journals/iet-cta/info/spl-issues

A cyber-physical system (CPS) is a system of collaborative computational agents offering monitoring and control of physical systems. The defining feature of a CPS is that, as a multi-dimensional aggregation of communication, networking, computing and control, it realises unprecedentedly deep integration of the information system and the physical world, which calls for a novel theoretical framework concerning intertwined effects between the ingredients. In particular, in CPSs the constrained resources in communication, networking and computing, such as energy budget, communication bandwidth, network throughput, media access, computational capability, limit the system performance. Traditionally, communication, networking, computing, optimisation and control are investigated relatively independently, and theoretical limits have been approached in their respective fields. Integrated approaches are urgently needed.

The objective of this Special Issue is to gather the state-of-the-art studies of resource-constrained optimisation and control for CPSs within a wide range of relevant topics in control theory, optimisation, information theory, wireless communication and networking.

Potential topics include, but are not limited to the following:
- Event-based state estimation, event-triggered control, event-triggered sampling, hybrid systems, supervisory control;
- Sequential decision processes subject to information exchange constraints;
- Co-design techniques for communication and control systems;
- Control and filtering under communication imperfection and constraints;
- Distributed optimization and distributed algorithm analysis;
- Networked filtering, data fusion, and feedback control;
- Networked multi-agent systems;
- Techniques, algorithms and protocols for bandwidth allocation, media access control, power control, scheduling;
- Self-organization under resource constraints;
- Security of information systems against external and internal attacks;
- Fault detection and fault-tolerant control technology for networked systems;
- Applications and case studies of CPSs.

Important dates:
Submission deadline: Jun 30 2016
Publication Date: Jul 2017

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4.18. 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"
Asian Journal of 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

How to submit:

Potential authors are encouraged to upload the electronic file of their manuscript (in PDF format) through the journal's online submission website: http://mc.manuscriptcentral.com/asjc. If you encounter any submission problem, feel free to contact Prof. Li-Chen Fu.

Editor-in-Chief: Professor Li-Chen Fu
Department of Electrical Engineering, EE II-524 Tel: +886-2-3366-3558
National Taiwan University Fax: +886-2-2365-4267
Taipei 10617, Taiwan E-mail: lichen@ntu.edu.tw

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

CALL FOR PAPERS

Special issue on "Advances in Control and Optimization over Wireless Sensor and Actuator Networks" Asian Journal of Control

http://www.ajc.org.tw

As different from traditional sensor networks which are deemed as open-loop information gathering systems, the emerging wireless sensor and actuator networks (WSANs) are closed-loop systems of wireless-capable sensors and actuators which can facilitate intimate interactions between human and the physical world. For their low cost, ease of maintenance, convenient upgrading and the ability to enhance system intelligence, WSANs have found promising applications in a variety of fields such as environment monitoring and control,building automation, industrial control, smart grid management, and intelligent transportation.

WSANs are an integrated technology of control and communication. However, control engineers and network experts often work separately to design control algorithms and communication protocols without closely examining their intimate interactions and interdependencies in WSANs, resulting in system overall performance underexplored. WSANs are systems of heterogeneous sensors and actuators which call for joint control and optimization of issues such as task scheduling, node coordination and resource allocation. Also,large-scale WSANs call for distributed and cooperative control schemes where each node make decisions based on only limited local information. Recently, mobile WSANs are emerging where the network connectivity becomes dynamic and even stochastic. In such a dynamic environment, it calls for advanced control and optimization schemes with abilities such as mobility control, path planning, and robust control against topology dynamics.

This special issue seeks original contributions which address recent emerging issues of control and optimization over WSANs. We solicit on (but not limited to) the following topics:

1. Sensor-actuator and actuator-actuator coordination in WSANs
2. Estimation and control over wireless networks
3. Distributed and collaborative control over WSANs
4. Control and communication co-design in WSANs
5. Cross-layer optimization and resource allocation for WSANs
6. Wireless sensor/robot networks and mobile WSANs
7. Energy efficiency, security and privacy issues of WSANs
8. Emerging applications, simulation tools, experiments, test-beds and prototyping systems

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4.19. CFP: International Workshop on Numerical Software Verification

Contributed by: Sergiy Bogomolov, sergiy.bogomolov@ist.ac.at

CALL FOR PAPERS

9th International Workshop on Numerical Software Verification (NSV 2016)

July 17-18, 2016

Toronto, Ontario, Canada

Web Page: http://nsv2016.pages.ist.ac.at/

Important Dates

Submissions deadline: ** April 22, 2016 **

Notification: May 15, 2016

Final version: May 28, 2016

Workshop: July 17-18, 2016

** New this year **

All accepted papers will be published as Lecture Notes in Computer Science (LNCS) with Springer Verlag.

Description of the Workshop

Numerical computations are ubiquitous in digital systems: supervision, prediction, simulation and signal processing rely heavily on numerical calculus to achieve desired goals. Design and verification of numerical algorithms has a unique set of challenges, which set it apart from rest of software verification. To achieve the verification and validation of global properties, numerical techniques need to precisely represent local behaviors of each component. The implementation of numerical techniques on modern hardware adds another layer of approximation because of the use of finite representations of infinite precision numbers that usually lack basic arithmetic properties such as commutativity and associativity. Finally, the development and analysis of cyber-physical systems (CPS) which involve the interacting continuous and discrete components pose a further challenge. It is hence imperative to develop logical and mathematical techniques for the reasoning about programmability and reliability. The NSV workshop is dedicated to the development of such techniques.

Topics

The scope of the workshop includes, but is not restricted to, the following topics:

- Quantitative and qualitative analysis of hybrid systems
- Models and abstraction techniques
- Optimal control of dynamical systems
- Parameter identification for hybrid systems

- Numerical optimization methods
- Hybrid systems verification
- Applications of hybrid systems to systems biology
- Propagation of uncertainties, deterministic and probabilistic models
- Specifications of correctness for numerical programs
- Formal specification and verification of numerical programs
- Quality of finite precision implementations
- Numerical properties of control software
- Validation for space, avionics, automotive and real-time applications
- Validation for scientific computing programs

Submission information

We solicit regular and short papers. Paper submission must be performed via the EasyChair system:
https://easychair.org/conferences/?conf=nsv2016

Regular papers must describe original work, be written and presented in English, and must not substantially overlap with papers that have been published or that are simultaneously submitted to a journal or a conference with refereed proceedings. Submitted papers will be judged on the basis of significance, relevance, correctness, originality, and clarity. They should clearly identify what has been accomplished and why it is significant.

Regular paper submissions should not exceed 15 pages in LNCS style, including bibliography and well-marked appendices:
http://www.springer.com/lncs

Program committee members are not required to read the appendices, and thus papers must be intelligible without them.

Short papers are also welcome, they should present tools, benchmarks, case-studies or be extended abstracts of ongoing research. Short papers should not exceed 6 pages. All accepted papers will be published as Lecture Notes in Computer Science (LNCS) with Springer Verlag.

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5. Positions

5.1. PhD: ETH, Switzerland

Contributed by: Maryam Kamgarpour, mkamgar@control.ee.ethz.ch

ETH Zurich, Switzerland
Department of Information Technology and Electrical Engineering
Automatic Control Laboratory
Prof. Maryam Kamgarpour

PhD positions: Two PhD projects are available on the topic of control of large-scale dynamical systems with uncertainty. The problems are motivated by integration of renewable sources of energy in the power grid. We will explore and develop dynamic game theory for a large number of players (e.g. participants in the market) and scalable optimal control algorithms for large dimensional dynamical systems (e.g. the power grid).

Applicant requirements: a strong background and interest in mathematics, self-motivated, well-developed analytical and problem solving skills, outstanding academic track record, excellent English communication and writing skills.

Application process: The interested students should submit their CV, transcript, one page on statement of research interests and goals and name of three references. Please email your applications and inquiries to mkamgar@control.ee.ethz.ch.

ETH Zurich: Situated by lake Zurich and at the foot of Swiss Alps, ETH Zurich is a leading technological university in the world with over 18000 students from 110 countries. Further information on ETH Zurich, working conditions and doctoral employment:
https://www.ethz.ch/en/the-eth-zurich/welcome-center.html

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5.2. PhD: Lehigh University, USA

Contributed by: Nader Motee, motee@lehigh.edu

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

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

For Postdoctoral Positions: Strong background in probability theory, stochastic dynamical systems, and graph theory are desirable. Candidate with strong Control Systems background as well as Applied/Pure Mathematical background are highly encouraged to apply.

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

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

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

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5.3. PhD: University of Toulouse III, France

Contributed by: Carolina Albea Sanchez, calbea@laas.fr, Germain Garcia, garcia@laas.fr

PhD : LAAS (Laboratory for Analysis and Architecture of Systems), University of Toulouse III, France.

HYBRID CONTROL : APPLICATION TO ENERGY CONVERSION SYSTEMS

Description:

Production, distribution and consumption of renewable energy are among the active areas, which mobilize

many researchers and industrialists. More specifically, the development of renewable energy distribution networks depends on advances of electrical energy management systems, whose efficiency is based, in particular, on the design and use of high performance materials and components. In this context, the control of electrical energy converters is an important step to improve the energy efficiency of the processing systems as whole.

The different topologies and power converters have been extensively studied by the power electronics and control communities, usually based on approximate models, for example, averaged models. These approaches have helped solve many practical problems, even though in theoretical terms, the answers are often very incomplete. The advances of recent years in the field of materials and components lead to converter topologies or structures with many possibilities to improve performance. These options allow considering a diversity of structures (e.g. converter network) that advance toward reliable and secure conversion operation, while maintaining a quality of high energy. However, the drawback is an increase of the complexity that directly concerns the control laws and, consequently, the development methods. Therefore, we must consider more realistic models taking into account the specifications of energy conversion, and encompass theoretical complexity, such as the discontinuities caused by switching models. We wish to take directly into account the discrete dynamics (switching of active gates that decide the circuit configuration at every sampling time) and continuous dynamics (evolutions of the electrical continuous signals of the converter). The expected results in this direction present a relevant impact on the development of control law techniques and would allow us to develop an approach with a reduction of the differences between simulated results and experimental results. This is the general context of the thesis. It is based on a novel power converters control paradigm, combining all the points described above, through an innovative approach inspired by hybrid dynamic models for the automatic control.

Starting date: 1st october 2016

Requests for further information should be sent to calbea@laas.fr and garcia@laas.fr and include:

1. Covering/Motivation letter
2. Curriculum Vitae
3. Contact details of two academic referees.

Candidates will also need to apply through UT Dallas Graduate Admissions; for details, please see:
https://www.laas.fr/boreal/web/fr/these/voirEquipe/MAC/125

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5.4. PhD: Stevens Institute of Technology, USA

Contributed by: Yi Guo, yguo1@stevens.edu

PhD: Stevens Institute of Technology, USA

A PhD Research Assistant position is available in Department of Electrical and Computer Engineering at Stevens Institute of Technology starting Fall 2006. The candidate is expected to have a strong mathematics background, and research experience in dynamic systems and controls, or optimization, or robotics. The successful candidate will work on research project funded by the NSF National Robotics Initiative, and focus on robotics control, human-robot interaction, and machine learning methods. A Bachelor's degree in relevant fields is required, and a Master's degree is preferred.

Stevens Institute of Technology is located in Hoboken, NJ, on a bluff overlooking the Hudson River and New York City. Interested candidates please send your inquiries together with your detailed CV to yguo1@stevens.edu

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5.5. PhD: CRAN & CEA LIST, France

Contributed by: Irinel-Constantin Morarescu, moraresco@yahoo.com

Ph.D.: Research Center for Automatic Control of Nancy

This PhD thesis will be developed in the framework of "Projet de Ressourcement en Region Lorraine" and will be supervised by Marc Jungers, Irinel-Constantin Morarescu from CRAN and Christophe Janneteau and Michael Boc from CEA LIST.

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

2) Objectives: Traditionally, the design of embedded control systems assumes a separation of concerns between computation and control. An integrated approach where the constraints due to limited or shared computational resources are taken into account in the synthesis of control strategies would enable the development of high quality embedded controllers with guarantees of safety, stability and performance, while optimizing the usage of the available computational resources. The main objective of this thesis is to design decentralized controllers that integrate the communication and computation constraints. In other words, we specify the computation budget and the communication bandwidth and range and we want to design a controller that can be executed under these constraints. In order to satisfy the communication constraints we will impose a limited number of simultaneous communications per agent. The computation constraints will be taken into account by designing simple control laws that require small computation loads. This will be basically done by decoupling the controller in two parts. The first will compute reference trajectories based on standard consensus algorithms while the second will design tracking controllers for each agent independently from the others.

3) Background of the candidate and contact:
We are looking for a candidate with a MS or engineer degree having a good background in control theory. The applicant should be interested in theoretical and practical aspects of multi-agent systems. The working language can be either English or French. The standard duration of a PhD thesis in France is 36 months and the net salary is around 1 600 euros. Applications have to be sent by email at: marc.jungers@univ-lorraine.fr, constantin.morarescu@univ-lorraine.fr. They can also be contacted for further information, and should include a resume, recommendation letters (or persons to contact preferably).

The position is open and the candidate can start anytime but not later than 01/10/2016.

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5.6. PhD: Delft University of Technology, Netherlands

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

2 PhD positions on "Dynamic Fleet Management for Autonomous Vehicles" at Delft University of Technology, The Netherlands

Job description
The Section of Transport Engineering & Logistics (TU Delft) seeks two talented and ambitious PhD candidates for a challenging multidisciplinary research project on modelling and control of fleets of cooperative

vehicles. The PhD positions are defined within the framework of the NWO/STW Perspectief Programme "i-CAVE: Integrated Cooperative Automated Vehicles".

Cooperative driving solutions for areas such as business parks, leisure sites, port areas, or event sites demand efficient management of fleets of cooperative vehicles. This project considers the real-time challenges at the logistics and system level for organisations owning fleets of cooperative vehicles. This encompasses the entire spectrum of logistics systems: fleet size selection, vehicle rostering and assignment, dispatching, repositioning, and maintenance. The aim is to develop efficient methods that will enable the efficient deployment and operation of such fleets of cooperative (automated) vehicles.

Within the framework of the project there will be two PhD positions that will focus on the above aspects from different perspectives.

PhD Project 1 will take a more application-oriented perspective. The PhD candidate working on this project will determine in close cooperation with industrial partners high-potential logistic applications that could be enabled with fleets of automated vehicles, and their possible interaction with traffic management. Integrating fleet system dynamics in models representing traffic, simulating the combined behaviour under varying fleet control strategies, and assessing the performance of the different control strategies are core parts of this project. This connects the fields of simulation systems, operations research, and transport sciences. The PhD candidate will have the unique opportunity to work with engineers at a leading company that designs the communities and cities of the future in order to assess the potential of proposed methods in highly relevant case studies.

PhD Project 2 will take a more methodological, artificial intelligence and distributed control perspective. Automatic coordination strategies and planning algorithms that will maximise the performance of fleets of vehicles themselves or as a system will be proposed and investigated. Autonomous learning algorithms, e.g. using (multi-agent) reinforcement learning, and how to integrate expert knowledge will be formally analysed. State-of-the-art logistic service simulators will be used to investigate the technical and logistic performance that could be realised with the new fleet management strategies. The value of integrating real-time maps with up-to-date transport system conditions (e.g. related to travel times) will then also be explored.

Requirements

We are seeking two outstanding and enthusiastic researchers who have expertise and interest in one or more of the following areas:

* fleet management, logistics, intelligent transport systems, vehicle routing, traffic control;
* multi-agent systems, planning algorithms, artificial intelligence, computer science, automatic coordination / negotiation, modelling and control, control theory, optimisation.

You have obtained an MSc or an equivalent degree or expect to obtain an MSc very soon related to these areas (Transport and Logistics, Operations Research, Computer Science / AI). Good spoken and written English and the ability to work in a team are mandatory.

Conditions of employment

The TU Delft offers a customisable compensation package, a discount for health insurance and sport memberships, and a monthly work costs contribution. Flexible work schedules can be arranged. An International Children's Centre offers childcare and an international primary school. Dual Career Services offers support to accompanying partners. Salary and benefits are in accordance with the Collective Labour Agreement for Dutch Universities.

As a PhD candidate you will be enrolled in the TU Delft Graduate School. The TU Delft Graduate School provides an inspiring research environment; an excellent team of supervisors, academic staff and a mentor;

and a Doctoral Education Programme aimed at developing your transferable, discipline-related and research skills. Please visit http://graduateschool.tudelft.nl/ for more information.

Information and application
For more information about these positions, please contact R. R. Negenborn, phone: +31 (0)15-2786718, e-mail: r.r.negenborn@tudelft.nl. To apply, please e-mail an up-to-date, detailed curriculum vitae, a letter of application, a transcript of grades obtained during your MSc studies, and the names and contact information (telephone number and e-mail address) of two references by 30 April 2016 to: application-3mE@tudelft.nl. When applying for one of these positions, please refer to vacancy number 3ME16-16 and specify for which position you are applying (PhD1 or PhD2).

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5.7. PhD: University of Texas at Dallas, USA

Contributed by: Tyler Summers, tyler.summers@utdallas.edu

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) in the Departments of Mechanical and Electrical 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 may 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 at least one scientific programming language, such as MATLAB, Python, Julia, C/C++, etc.

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 apply through UT Dallas Graduate Admissions; for details, please see
http://www.utdallas.edu/admissions/graduate/degrees/detail.php?d=1741 or
http://www.utdallas.edu/admissions/graduate/degrees/detail.php?d=251

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5.8. Research Assistant: University of Sheffield, UK

Contributed by: Andreagiovanni Reina, a.reina@sheffield.ac.uk

The Behavioural and Evolutionary Theory group of the University of Sheffield has an opening for a Research Assistant in Collective Robotics beginning in May 2016. The position is for 2 years with the option to enroll in a PhD program in parallel to the assistant position.

The post holder will have the opportunity to work with a 1000 robot swarm in a research excellence environment (elected as one of the best places to work in the UK), within the research project DiODe led by Prof. James Marshall.

Required qualifications involve a degree in Computer Science or Electronic Engineering, some experience of designing and developing electronic circuit boards, and experience of device firmware programming.

More information can be found at: http://tinyurl.com/guh8a6m
Application deadline: 13th of April (2016)

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5.9. PostDoc: Texas A&M University-Qatar, Qatar

Contributed by: Reza Langari, rlangari@tamu.edu

Postdoctoral Position - Exoskeleton-based Stroke Rehabilitation

A postdoctoral position in exoskeleton-based stroke rehabilitation is available at Texas A&M University-Qatar (TAMU-Q). Applicants must have control, design and biomechanics background. Good oral and written communication skills and the ability to prepare internal and external documents and presentations as well as hands-on experience are desirable.

TAMU-Q offers excellent benefits and a number of special items. For example, the package includes furnished accommodations in Doha at no cost, a local transportation allowance, and dependent education allowance.

TAMU-Q (see: www.qatar.tamu.edu) is a branch campus of Texas A&M University and is located in Education City, Doha, Qatar. Education City is the location of a number of premier institutions, which are engaged in activities of advanced scientific and engineering research and applications. Major companies are establishing facilities in Education City and its vicinity as well.

Review of applications will begin immediately, and continue until the positions are filled. Candidates who would like to apply need to submit their curriculum vita to:

Dr. Reza Langari
Professor and JR Thompson Department Head Chair
Engineering Technology and Industrial Distribution (ETID)
Texas A&M University
College Station, TX 77843-3367
979-845-4949 (office)
979-847-9396 (fax)
rlangari@tamu.edu and to Dr. Reza Tafreshi

Associate Professor of Mechanical Engineering
Texas A&M University at Qatar
Education City
P.O. Box 23874, Doha, Qatar
974-4423-0237 (office)

974-4423-0066 (fax)
email: reza.tafreshi@qatar.tamu.edu

*Please note that only shot-listed candidates will be contacted.

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5.10. PostDoc: Delft University of Technology, Netherlands

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

A Postdoctoral position is available at the Delft Center for Systems and Control (DCSC), Delft University of Technology, The Netherlands, with the following focus:

Cooperative Control of Remote Wind Farm Transmission Grids

Project description:
The project will focus on power and voltage control in remote (e.g. offshore) wind farms and related transmission systems to ensure stability and robustness with respect to fluctuations in the wind field, unforeseen events, and to enforce maximum power limits. Motivated by typical challenging scenarios defined by our industrial partner, we will focus on a decentralized or distributed cooperative control setting, where local controllers are designed for each subsystem and may have the ability to communicate with each other. The candidate will implement applicable methodologies in the area of consensus filters, and may investigate topics such as robust control for interconnected systems, distributed model predictive control, and distributed optimization. The control mechanisms will be elaborated and implemented in a simulation environment (e.g., RTDS) for further analysis. In addition to developing and testing research methodology and algorithms, the successful applicant will be involved in the interaction with representatives of our industrial partner, with frequent visits to their offices in northwest Europe.

Candidate:
Applicants for this challenging project should have a PhD degree and background in systems and control or electrical engineering. The applicant should have demonstrated ability to conduct high-quality research according to international standards, as demonstrated by publications in international journals. Familiarity or previous experience with the following topics is a plus: smart grids, power networks, power inverter control, decentralized and distributed control, consensus. In addition, excellent communication skills are important for this position and a good command of the English language is required.

Project term:
Employment and salary are according to the Collective Employment Agreement of Dutch Universities, with excellent secondary benefits and an annually increasing salary starting at approximately EUR 3000 gross per month or higher depending on the candidate's experience. The appointment will be for one year. The position will be filled as soon as a suitable candidate is found. The project will be supervised by dr. Tamás Keviczky.

Information and application:
Interested applicants should send their detailed Curriculum Vitae, the names of two professional referees, a list of courses taken with grades obtained, a list of publications (with a copy of three selected ones), a summary of their Ph.D. thesis and a cover letter stating their motivation to:

Dr. Tamás Keviczky, tel. +31 15 278 2928, t.keviczky@tudelft.nl

General information is also available from the website http://www.dcsc.tudelft.nl/.

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5.11. PostDoc: KTH, Sweden

Contributed by: Dimos Dimarogonas, dimos@kth.se

I am looking for a postdoc in distributed hybrid systems at the Department of Automatic Control at KTH to start not earlier than July 2016. Topics of expertise should include one or more of the following:
- hybrid control systems
- formal methods for planning and control
- discrete approximations of continuous systems
- hybrid control and planning of multi-robot systems

The positions will be related to the ERC Starting Grant BUCOPHSYS (http://bucophsys.eu/index.html) and a recent Fellowship by the Knut och Alice Wallenberg Foundation in Sweden, both projects involving research on the above topics. Experience with robotics' platforms will be considered as a positive, but is not necessary.

In case of interest, please send me a short CV, two reference contacts and list of publications before April 15, 2016. Contact: Dimos Dimarogonas, email: dimos@kth.se, web: http://people.kth.se/~dimos/.

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5.12. PostDoc: UTFPR, Brazil

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

Systems and Control: Two Post-Doctoral Fellowships in Brazil

Two exciting opportunities are opened for young or experienced researchers to develop research in Brazil.

Candidates must hold a PhD or Doctorate degree related to at least one of the next topics: Control and Systems Engineering; Automation; Robotics; Electrical Engineering; Electronics; Mechatronics; Industrial Engineering; Computer Engineering; Mechanics; Mathematics (pure or applied); Statistics; Computer sciences; and Technology. Candidates holding a PhD in any of the aforementioned topics are invited to apply.

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

The two selected candidates will receive a Post-Doctorate Fellowship from CAPES, Brazil (R$ 4,100 per month; it is equivalent to EU 1,100). The fellowships are awarded for 12 months and can be renewed annually. The successful applicant can be appointed to receive support for travel expenses from where he/she lives to come to live in Parana, Brazil, but this financial support depends on the available budget from the hosting university.

Candidates must have a PhD or Doctorate degree to apply for a fellowship. The position requires a good-level of written and oral communication skills in English. The University's staff will help the non-speaking Portuguese candidates to learn Portuguese efficiently in specific language training programs.

The aim of the project is to advance the knowledge of Control systems in its broad sense. We are interested in new results of Control systems for applications of real-time processes. Candidates are strongly encouraged to apply if they are committed to pursuing theoretical or applied research in systems and control engineering whilst working collaboratively across disciplines to develop solutions to one or more of the next topics:
- Theory: linear and nonlinear control systems, stochastic systems, Markovian systems, optimal control, stability of systems, filtering and identification, networked control, nonlinear optimization, computational

methods, signal processing, among others topics.
- Applications: industrial processes, electrical and electronic systems, automotive systems (electronic control of vehicles), mechatronic devices, renewable energy, wind turbines, photovoltaics, technology applied in Agriculture, among others.

The appointed candidates are expect to build a bridge between theory and applications. Candidates will be trained in one or more of the next topics: control, electronics, computer processing, programming of microprocessors (e.g., DSP, FPGA, Arduino, Raspberry Pi), data acquisition cards, digital oscilloscopes, industrial instrumentation, sensors, technology for industrial applications, among others.

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

Quantity of fellowships: 02 (two)

Time: The initial appointment is for a period of 12 months, renewable up to three years.

Salary: R$ 4,100 (EU 1,100 aprox.) per month paid by CAPES, Brazil. This value is free of tax.

Selection:
The selection process will be completed in three steps: assessment of the candidate CV by analysis of documents submitted by the candidate; interview via email and Skype with the selected candidates. the selected candidate is required to sign a document stating that will obey the CAPES and Brazilian rules. This document is required by CAPES to issue the documents to be used by the candidate to apply for a Brazilian Visa.

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

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

Deadline:
The deadline for applications is June 01, 2016, but applications will be accepted until the positions are filled.

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

Starting time (tentative):
Candidate: From September 01, 2016 to February 01, 2017.

Benefits:
The vacancies of this call are for nominations for scholarships only. As a result the Brazilian government issues a Visa for study only, i.e., the candidate cannot work for private companies. But the successful candidates may apply for permanent positions at UTFPR in a future opportunity. UTFPR is a Brazilian public university. This signifies that candidates, citizens of any nationality, may apply for full-time professor permanent positions. After approved by a rigorous public selection, the candidate obtains the employment stability in the professor's position after completing three years of work.

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

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5.13. PostDoc: Gyeongsang National University, Korea

Contributed by: Yoonsoo Kim, yoonsoo@gnu.ac.kr

Post-doctoral research fellow in "Design and analysis of large-scale complex network of dynamical systems"

The Graduate School of Mechanical and Aerospace Engineering in Gyeongsang National University (Jinju, Republic of Korea) has a one-year postdoctoral research fellow position in aerospace, mechanical engineering, or applied mathematics to join an active research project on design and analysis of large-scale complex network of dynamical systems.

This one-year research shall be funded by the BK21plus project (directed by the Ministry of Education in Korea), and mainly focused on quantitatively characterizing the effect of network topology on the stability and performance of the network of dynamical systems. The network of interest is often of large-scale and complex in practice, and it may need to be approximated to a small-scale or scale-free network with a certain level of stability and performance guarantee (stability/robustness margin, H2/H-infinity performance, etc.). Unlike many existing works on complex network, this research shall have the aim of providing a new insight into the interplay between 'the network' connecting local systems and 'the local dynamics' physically driving the global network. This research will be supervised by Principal Investigator of the BK21plus project (Prof. R. S. Myong) and Technical Investigator (Prof. Yoonsoo Kim).

Requirements: This position requires a PhD degree in aerospace, mechanical engineering, or applied mathematics. Research experience and a record of journal publications in control theory or application are strongly recommended.

Salary: The starting annual salary is USD 25,000 (plus basic insurance fees). Salary negotiation is possible for a candidate with an excellent research background.

To apply: a full Curriculum Vitae including a list of journal publications and the contact details of two referees must be sent to yoonsoo@gnu.ac.kr.

Closing date: The closing date is April 30, 2016.

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5.14. PostDoc: Nanyang Technological University, Singapore

Contributed by: Erdal KAYACAN, erdal@ntu.edu.sg

NTU: A post-doctorate position in ST Eng-NTU Corp. Laboratory at Nanyang Technological University (Singapore) is immediately available.

Research topic: Precise landing of unmanned aerial vehicles on an un-defined landing target

This project aims to solve the precise landing problem of a VTOL UAV by using a cost-effective hybrid method consisting of local positioning systems and global positioning systems. In this project, an un-defined landing target will be selected for the UAV to realize a precise landing.

Requirements:
- Prospective candidate should hold a Ph.D. degree in automatic control engineering, mechatronics engineering, electrical engineering, mechanical engineering, computer science or other related disciplines from reputable universities.

- The candidate should have excellent verbal and writing skills in English with very good communication skills. - Concrete knowledge in C/C++.
- Experience in controlling and navigating of multi-rotor UAVs.
- Knowledge in calibration of multiple sensors and sensor fusion for UAV is a plus.
- Knowledge in 3D vision, e.g. stereo vision or a monocular vision plus a laser range finder, for UAV is a plus.
- Knowledge in 6D pose estimation or localization for UAV is a plus.
- Knowledge in fuzzy logic control is a plus.
- Knowledge in visual model-free object tracking for UAV is a plus.
- Knowledge in working with Robot Operating System (ROS) is a plus.
- Knowledge in developing Graphical User Interface (GUI) is a plus.

The application should consist of:
- A CV with a full publication list,
- Transcripts of B.Sc., M.Sc. and Ph.D.
- The contact details of three referees.

These documents must be compiled as a single pdf file, and named as "<Name>_<Surname>.pdf". Then, the single file should be sent to "erdal_at_ntu.edu.sg" with a subject line of "Postdoc application for PL project".

The salaries are competitive, and the position will be available immediately once the candidate is selected. The applications will be reviewed directly until the position is filled.

The deadline for the application is the 30th of April 2016.

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5.15. PostDoc: United States Naval Academy, USA

Contributed by: Daniel Opila, opila@usna.edu

The Power and Energy group in the Electrical and Computer Engineering Department at the United States Naval Academy, is seeking a candidate for a funded 2-year postdoctoral position with the possibility of renewal. The research is sponsored by the Office of Naval Research (ONR) and is subject to availability of funds. This research position involves:
1. Conducting research on the design, simulation, operation, and control of small-scale power grids using power electronics.
2. Constructing and operating a low voltage, low power research test-bed microgrid.
3. Assisting undergraduate independent research projects.

The appointee will be expected to work closely with USNA faculty, students, multi-university research collaborators, experts from Navy Labs and other DOD entities, and private industry. A variety of active projects span academic, government, and industrial research. The academy is a charter member of the Electric Ship Research and Development Consortium (www.esrdc.com) and heavily involved with various Naval labs and program offices. The supervising faculty have a mix of experience in academia, industry, Navy ship design offices, and as active-duty Naval officers.

This is a non-tenure track federal excepted service position. The position includes office space, computer facilities, library privileges, conference travel support, health benefits, and a competitive salary. The position is currently open, and the starting date is negotiable.

QUALIFICATIONS:

Minimum: Applicants must have a Ph.D. in electrical engineering, mechanical engineering, systems/controls engineering, math, computer science, physics or a closely related area. US Citizenship is required.

Preferred:
A background in power systems, power electronics, and control/optimization is beneficial, as is familiarity with shipboard machinery systems, fluid mechanics, and thermodynamics. Hands-on experience with building and testing power electronics hardware is extremely useful, as is knowledge of MATLAB/Simulink and rapid prototyping of embedded control systems.

HOW TO APPLY FOR POSITION:
Please see the official posting here: http://www.usna.edu/HRO/jobinfo/ElecCompPostDoc.php
Applicants should submit a cover letter describing their qualifications and research interests, their curriculum vitae, and a list of three references. The cover letter should include the applicant's citizenship. Application review will begin immediately. All application materials should be emailed to power-research-group@usna.edu.

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5.16. PostDoc: University of Salento, Italy

Contributed by: Giuseppe Notarstefano, giuseppe.notarstefano@unisalento.it

Postdoc (University of Salento, Lecce, Italy - ERC starting grant project)

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

About the position
The official call will be published at the beginning of April with tentative deadline end of April and tentative interview in the second half of May.
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 Leccehttp://erc.europa.eu 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
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 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

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5.17. PostDoc: Cambridge Centre for Advanced Research and Education, Singapore

Contributed by: Jan Maciejowski, jmm@eng.cam.ac.uk

POST-DOCTORAL RESEARCH FELLOW IN OPTIMIZATION OF POWER SYSTEMS USING MODEL PREDICTIVE CONTROL

Applications are invited for a post-doctoral Research Fellow to work on the use of Model Predictive Control (MPC) for 'Smart Grid' applications, with particular reference to reducing the carbon footprint associated with industrial energy consumption.

This post will be associated with the project "Integrated Chemical and Electrical System Operation", which is a collaboration between Nanyang Technological University and the University of Cambridge. The project sits within the Cambridge Centre for Advanced Research and Education in Singapore (CARES), the University of Cambridge's presence in Singapore sponsored by the NRF CREATE programme. Further information on CARES may be found at www.cares.cam.ac.uk.

The main responsibility of the Research Fellow will be the development of real-time MPC algorithms for use with linear and nonlinear dynamic models of 'smart grids' containing electrical and thermal power generation and distribution systems, as well as industrial loads. A contribution to the development and maintenance of power system models may also be required. The Research Fellow will be expected to interact with other team members, who will supply detailed models and domain-specific knowledge, as well as MPC expertise.

The successful candidate is expected to have a good degree in Engineering, Mathematics or a related subject, and a PhD in Systems and Control, Numerical optimization, or a closely-related field. Expertise with numerical constrained optimization for convex and/or non-convex problems is required. The successful candidate will have experience of at least one of the following: implementation under real-time constraints (for example for MPC); implementation on special-purpose processors; distributed/decentralized optimization; modelling and control of power generation and distribution systems. The person appointed will work under the supervision of Prof. Jan Maciejowski of the University of Cambridge, and of Prof. Keck-Voon Ling of NTU Singapore.

The post-holder will be employed under a Research Collaboration Agreement between CARES and Nanyang Technological University (NTU) and will be an employee of NTU. The post is located in Singapore. Occasional visits to the University of Cambridge in the UK will be required.

The salary range is SGD 52K - SGD 75K per year; the actual salary will depend on the experience of the successful candidate. The tenure of the post will be up to April 2018, with the possibility of reappointment if further grant funding is obtained. The position is available immediately.

Application Procedure: Please send (1) CV and publication list, (2) Names and contact details of 3 referees, and (3) a covering letter discussing interest and qualification for the position, to Ms Leong Xiang Ning (CARES HR Executive), cares@hermes.cam.ac.uk by Monday 9 May 2016.

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5.18. PostDoc: University of Florida, USA

Contributed by: Getachew K Befekadu, gbefekadu@ufl.edu

Postdoctoral Researcher in Optimization and Inference

There is a postdoc opportunity in optimization and inference with Dr. Eduardo L. Pasiliao's research group at the UF-REEF/AFRL.

Responsibilities

- Conduct research and development in the area of decision optimization, implement novel algorithms and methods for solving large-scale optimization problems, and apply them to challenging real world problems.
- Formulate new research ideas and pursue them all the way to realization in prototypes. Publication in major journals is also required.
- Propose new directions and projects related to optimization problems and applications.

Qualifications

- A Ph.D. degree in Mathematics, Operations Research, Computer Science, Electrical Engineering, Industrial Engineering, or a closely related field.
- Very strong background in continuous and combinatorial optimization. Applicants with expertise in solving sequential optimization problems under uncertainty, planning, and scheduling are especially encouraged to apply.
- Background in related areas such as predictive analytics, machine learning and probabilistic inference.
- Good programming skills in Matlab, C/C++ or Java; experience with industrial grade solvers such as CPLEX and Gurobi and applying them for large-scale optimization projects.

Application

Interested candidates should send their CV, a research statement, and list of references to Dr. Getachew K. Befekadu at gbefekadu@ufl.edu

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5.19. Faculty: Texas A&M University, USA

Contributed by: Rebecca Marianno, rmarianno@tamu.edu

The Dwight Look College of Engineering invites applications for a senior level position at the professor level from exceptional individuals who have demonstrated broad research expertise in one or more of the following domains: autonomous air, ground, or space vehicles; computational intelligence/machine learning; cyber engineering and sensor systems. Applicants with demonstrated success in leading team efforts at the university and national levels, and who bridge the above domains are especially encouraged to apply. The successful candidate will lead capture efforts to develop and deploy advanced technology solutions that address existing and emerging missions of national importance that involve autonomous systems for a broad range of federal and industrial sponsors. The faculty candidate will also be instrumental in fostering and promoting a thriving research environment that envisions and develops disruptive technical solutions and advances the state of the art for autonomous systems. This will include facility development and recruitment and retention of other outstanding technical contributors. As a faculty member, the candidate will be expected to teach at the undergraduate and graduate levels; lead the multi-disciplinary effort for national

level externally-funded research programs in the autonomous systems area; mentor graduate students; and provide service to the university and professional community.

Texas A&M is located in the twin cities of Bryan and College Station, with a population of more than 175,000, and is conveniently located in a triangle formed by Dallas, Houston and Austin. Texas A&M has more than 55,000 graduate and undergraduate students enrolled. Research expenditures at Texas A&M total more than $820 million annually, ranking in the top tier of universities nationwide. With an endowment valued at more than $5 billion, the university ranks fourth among U.S. public universities and 10th overall. Texas A&M is aware that attracting and retaining exceptional faculty often depends on meeting the needs of two careers and having policies that contribute to work-life balance. For more information visit http://dof.tamu.edu/Faculty-Resources/CURRENT-FACULTY/Faculty-Work-Life. With over 400 tenured/tenure-track faculty members and more than 13,900 students, the Dwight Look College of Engineering is one of the largest engineering schools in the country. The college is ranked seventh in graduate studies and eighth in undergraduate programs among public institutions by U.S. News & World Report, with seven of the college's 13 departments ranked in the Top 10. The Look College is also ranked 10th in the Academic Ranking of World Universities compiled by Shanghai Jiao Tong University. The American Society for Engineering Education ranks the Look College second in research expenditures.

The Dwight Look College of Engineering at Texas A&M University is leading a multi-disciplinary search for scholarly talent in the area of unmanned autonomous systems. The goal of this effort is to position the Look College as the national leader in underwater, ground, air, and space autonomous systems research. The college is committed to providing the resources, facilities, equipment, and personnel to realize this goal. Applicants must have earned a doctorate in an engineering discipline or a closely related field. Applicants should submit a cover letter, curriculum vitae, teaching statement, research statement, and a list of five references (including postal addresses, phone numbers and email addresses) by applying for this specific position at www.tamengineeringjobs.com. Full consideration will be given to applications received by 1 June 2016. Applications received after that date may be considered until positions are filled. It is anticipated the appointment will begin fall 2016.

The members of Texas A&M Engineering are all Equal Opportunity/Affirmative Action/Veterans/Disability employers committed to diversity. It is the policy of these members to recruit, hire, train and promote without regard to race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation or gender identity.

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5.20. Researcher: MINES ParisTech, France

Contributed by: Nicolas Petit, nicolas.petit@mines-paristech.fr

RECRUITMENT OF A RESEARCHER IN AUTOMATIC CONTROL AT MINES PARISTECH (CAS)

Developing its research and teaching activities in the field of Automatic Control, MINES ParisTech opens a full time researcher position. This position is aimed at a researcher (man or woman), who appreciates a multidisciplinary work combining fundamental research and industrial applications. The successful candidate will take part to the partnership research work of CAS and contribute to industrial and economic innovation.

MINES ParisTech is a top-level engineering school in France. The school has developed research and graduate education, in conjunction with industry and academic partners. Within it, the Centre Automatique et Systèmes (CAS) is a research laboratory specialized in automatic control theory. The research developed at CAS is focused on industrial needs and is the subject of scientific publications. CAS also provides courses for engineering Master students and PhD students. The laboratory wishes to strengthen its team of 8

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

The successful candidate is expected to have already proven his/her ability to elaborate academic research in automatic control: uncertain time delay systems, systems with varying delays, backstepping, stability and stabilization, adaptive control, distributed parameters systems, modeling of nonlinear systems for real-world applications and industry. The successful candidate is expected to develop scientific research to be published in the best journals and international conferences. He/she is expected to develop an independent and creative research program devoted to his/her topics, in order to contribute to theoretical and methodological studies as well as to their application to concrete cases. He/she will initiate externally funded research programs, and establish strong relationship with academic communities and technological companies.

He/she will take part to the various undergraduate and graduate courses and teaching sessions in which CAS is involved (in particular Automatic Control and Optimization), open to MINES ParisTech students as well as to engineers undergoing post-graduate education.

The applicant must have a doctoral degree in Automatic Control or Applied Mathematics (nonlinear control theory, delay systems, uncertain or varying delay systems, backstepping, stability, stabilization, adaptive control, distributed parameters systems) or related subject. The applicant must show interest for science and technology applied to industry applications. A post-doctoral experience in a research laboratory different from the one he/she got his/her doctoral degree at, especially in a foreign laboratory, would be an asset for this position. As the position implies cooperation with international partners, strong social skills as well as good knowledge of English language are required. The applicant will have to show his/her capacity to conduct research work in a multidisciplinary context, together with an aptitude for teamwork.

Detailed information can be obtained at http://cas.ensmp.fr/~petit/Poste2016/poste_CAS_ENG.pdf

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5.21. Researcher: TNO-Helmond, Netherlands

Contributed by: Arturo Tejada, arturo.tejadaruiz@tno.nl

The Integrated Vehicle Safety (IVS) department at TNO-Helmond is looking for a new, junior/medior-level colleague with embedded control expertise. IVS focuses on cooperative vehicle automation technologies such as cooperative adaptive cruise control.

The new colleague will support, among other tasks, the development of current and future vehicle fault-tolerant and operational safety architectures. This will require familiarity (or familiarization) with the systematic process of vehicle safety assessment (e.g, ISO26262) and the ability of relating its results to existing (or new) hardware and software fault-tolerant solutions. Moreover, we expect the new colleague to help us analyze the impact of such solutions on our existing and future automation (control) algorithms and propose and demonstrate their necessary fault-tolerant adaptations.

Complete details about the position, its requirement, and its electronic application process can be found here: https://goo.gl/M2b9jV

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