E-LETTER ON SYSTEMS, CONTROL, & SIGNAL PROCESSING
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Welcome to Issue 369 of the CSS E-letter available here.

– To submit new articles, visit article submissions on the E-Letter website.
– To **subscribe**, send an empty email to eletter-css-join@lists.it.utsa.edu and you will be automatically subscribed to the CSS E-Letter.
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The next E-Letter will be mailed out at the beginning of June 2019.

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1   IEEE CSS Headlines

1.1.   Call for Nominations: Roberto Tempo Best CDC Paper Award
Contributed by: Thomas Parisini, t.parisini@imperial.ac.uk

The IEEE Control Systems Society recently established the "Roberto Tempo Best CDC Paper Award" to recognise the best paper presented at the IEEE Conference on Decision and Control (CDC). Details about this award can be found visiting

http://www.ieeecss.org/awards/roberto-tempo-best-cdc-paper-award

Nominations are solicited. A nomination letter describing the excellence of the nominated paper should be submitted on the IEEE CSS Awards nomination system, css.paperplaza.net by May 15, 2019.

The first award will be presented in December 2019 during the Award Ceremony of the 2019 CDC for papers presented in the 2018 IEEE Conference on Decision and Control held in Miami, USA.

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1.2.   IEEE CSS Outreach Fund
Contributed by: Daniel E. Rivera, daniel.rivera@asu.edu

The IEEE Control Systems Society (CSS) Outreach Fund provides grants for projects that will benefit CSS members and the controls community in general. Since its inception in 2011, the Fund has funded over 60 grants on behalf of a diverse group of CSS member-led activities.

The CSS Outreach Task Force is pleased to announce that the window for proposal submission for its 2019 spring solicitation will be held from May 1 to 24, 2019. Because of inherent delays in proposal evaluation and processing, any CSS members interested in pursuing an Outreach-funded project during 2020 need to apply during this solicitation. Information regarding the program, which includes proposal requirements and descriptions of current and past funded projects, can be found in:
http://www.ieeecss.org/general/control-systems-society-outreach-fund

Potential applicants are encouraged to watch a 10-minute video describing the CSS Outreach Fund that is available from IEEE.tv: https://bit.ly/2vysdEp

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

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1.3.   CSS Technically Cosponsored Events
Contributed by: Luca Zaccarian, CSS AE Conferences, zaccarian@laas.fr

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

- 57th Allerton Conference on Communication, Control, and Computing. Monticello, United States. Sep 24–Sep 27, 2019. https://allerton.csl.illinois.edu/

- 24th International Conference on Methods and Models in Automation and Robotics (MMAR 2019). Miedzyzdroje, Poland. Aug 26 - Aug 29, 2019. http://mmar.edu.pl/

- 8th International Conference on Systems and Control (ICSC'19). Marrakech, Morocco. Oct 23 - Oct 25, 2019. http://lias.labo.univ-poitiers.fr/icsc/icsc2019/

- 23rd International Conference on System Theory, Control and Computing - ICSTCC 2019. Sinaia, Romania. Oct 9 - Oct 11, 2019. http://icstcc2019.cs.upt.ro/

- 27th Mediterranean Conference on Control and Automation. Akko, Israel. Jul 1 - Jul 4, 2019. https://med19.net.technion.ac.il/

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

1.4. IEEE Control Systems Society Publications Content Digest
Contributed by: Kaiwen Chen, kaiwen.chen16@imperial.ac.uk

The IEEE Control Systems Society Publications Content Digest is a novel and convenient guide that helps readers keep track of the latest published articles.

The CSS Publications Content Digest, available at

http://ieeecss.org/publications-content-digest

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

1.5. IEEE Transactions on Automatic Control
Contributed by: Alessandro Astolfi, ieeetac@imperial.ac.uk

IEEE Transactions on Automatic Control
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2 Miscellaneous

2.1. Summer School: Practical Signal and System Modeling for Health, Italy
Contributed by: Giulia Giordano, g.giordano@tudelft.nl

In July 15-18 2019 the CISM-UniUD Summer School "Practical Signal and System Modeling for Health" will be held in Udine, Italy. The course is mainly addressed to doctoral student and aims at presenting some of the most recent results and techniques concerning signal processing, modeling and analysis of biological systems.

Lectures will be given by:
- Gari Clifford, Georgia Institute of Technology and Emory University, Atlanta, USA
- Giulia da Poian, Emory University, Atlanta, USA
- Shamim Nemati, Emory University, Atlanta, USA
- Giulia Giordano, TU Delft, NL
- Franco Blanchini, University of Udine, IT
- Radu Grosu, Technische Universität Wien, AT

For more information, please visit:
http://www.cism.it/courses/E1901
http://media.cism.it/courses%2FE1901%2FE1901_Practical_Signal.pdf

2.2. Online Seminar: Maria Prandini at USF FoRCE
Contributed by: Tansel Yucelen, yucelen@usf.edu

Dr. Maria Prandini will give an online seminar at USF FoRCE (http://force.eng.usf.edu/) on May 3 (Friday) at 12:00 PM Eastern Time. Her talk title, abstract, and bio are included at the end of this message. You can attend this online seminar by simply clicking to this WebEx link:

https://force.my.webex.com/force.my/j.php?MTID=m42fad459424a02161af415445c255470

Title: Socio-technical Modeling, Control, And Optimization For Urban Mobility

Abstract: Urban mobility in Transportation is witnessing a transformation due to the emergence of new concepts in Mobility on Demand, where new modes of transportation other than private individual cars and public mass transit are being investigated. With a projection of a total number of 2 billion vehicles on roads by the year 2050, such innovations in transportation are urgently needed. One such paradigm is the notion of shared mobility on demand, which consists of customized dynamic routing for multi-passenger transport. A solution to this problem consists of a host of challenges that ranges from distributed optimization, behavioral modeling of passengers, traffic flow modeling, and distributed control. Recent efforts in our group have made some inroads into this problem and form the focus of this talk. A socio-technical model that combines behavioral models of passengers based on Cumulative Prospect Theory and traffic models will be discussed. The solution to dynamic routing is presented in the form of an optimization problem solved via an Alternating Minimization based approach. The model together with the optimization frame-

work is then used to propose a dynamic tariff that can be viewed as a model-based control strategy based on Transactive Control, a methodology that is being explored in power grids for incentivizing flexible consumption.

Biography: Dr. Prandini received her laurea degree in Electrical Engineering (summa cum laude) from Politecnico di Milano (1994) and her Ph.D. degree in Information Technology from Universita di Brescia (1998). She was a postdoctoral researcher at the University of California at Berkeley (1998-2000). She also held visiting positions at Delft University of Technology (1998), Cambridge University (2000), University of California at Berkeley (2005), and Swiss Federal Institute of Technology Zurich (2006). In 2002, she became an assistant professor in systems and control at Politecnico di Milano, where she is currently a full professor. She has been in the program committees of several international conferences, co-chair of HSCC 2018, and she has been appointed program chair of IEEE CDC 2021. She serves as an associate editor for IEEE Transactions on Network Systems, and previously for IEEE Transactions on Automatic Control, IEEE Transactions on Control Systems Technology, and Nonlinear Analysis: Hybrid Systems. She is member of IFAC Technical Committee on Discrete Event and Hybrid Systems since 2008 and of the IFAC Policy Committee for the triennium 2017-20. She was editor for the CSS Electronic Publications (2013-15), elected member of the IEEE CSS Board of Governors (2015-17), and IEEE CSS Vice-President for Conference Activities (2016-17). She is senior member of the IEEE. Her research interests include stochastic hybrid systems, randomized algorithms, distributed and data-based optimization, multi-agent systems, and the application of control theory to transportation and energy systems.

2.3. Online Seminar: Anuradha Annaswamy at USF FoRCE
Contributed by: Tansel Yucelen, yucelen@usf.edu

Dr. Anuradha Annaswamy will give an online seminar at USF FoRCE (http://force.eng.usf.edu/) on May 24 (Friday) at 12:00 PM Eastern Time. Her talk title, abstract, and bio are included at the end of this message. You can attend this online seminar by simply clicking to this WebEx link:

https://force.my.webex.com/force.my/j.php?MTID=mb582ed65b29c40d9436f135ad09a27b2

Title: Distributed Optimization over Networks with Applications to Energy Systems

Abstract: The well-functioning of our modern society rests on the reliable and uninterrupted operation of large scale complex infrastructures, which are more and more exhibiting a network structure with a high number of interacting components/agents. Energy and transportation systems, communication and social networks are a few, yet prominent, examples of such large scale multi-agent networked systems. Depending on the specific case, agents may act cooperatively to optimize the overall system performance or compete for shared resources. Based on the underlying communication architecture, and the presence or not of a central regulation authority, either decentralized or distributed decision making paradigms are adopted. In this seminar, we address the interacting and distributed nature of cooperative multi-agent systems arising in the energy application domain. More specifically, we present our recent results on the development of a unifying distributed optimization framework to cope with the main complexity features that are prominent in such systems, i.e.: heterogeneity, as we allow the agents to have different objectives and physical/technological constraints; privacy, as we do not require agents to disclose their local infor-

mation; uncertainty, as we take into account uncertainty affecting the agents locally and/or globally; and combinatorial complexity, as we address the case of discrete decision variables. (This is a joint work with Alessandro Falsone, Simone Garatti, and Kostas Margellos.)

Biography: Dr. Annaswamy is Founder and Director of the Active-Adaptive Control Laboratory in the Department of Mechanical Engineering at MIT. She is recognized worldwide as a pioneer in adaptive control theory and its applications to aerospace, automotive, and propulsion systems as well as cyber physical systems such as Smart Grids, Smart Cities, and Smart Infrastructures. Her current research team of 15 students and post-docs is supported by Air-Force Research Laboratory, Boeing, Ford-MIT Alliance, Department of Energy, and NSF. Dr. Annaswamy is an author of over 100 journal publications and 250 conference publications, co-author of a graduate textbook on adaptive control, and co-editor of several cutting edge science and technology reports including Systems & Control for the future of humanity, research agenda: Current and future roles, impact and grand challenges (Annual Reviews in Control, 2016), Smart Grid Control: Overview and Research Opportunities (Springer, 2018), and Impact of Control Technology (IoCT-report 2011 and 2013). Dr. Annaswamy has received several awards including the George Axelby (1986) and Control Systems Magazine (2010) best paper awards from the IEEE Control Systems Society (CSS), the Presidential Young Investigator award from NSF (1992), the Hans Fisher Senior Fellowship from the Institute for Advanced Study at the Technische Universitat Munchen (2008), the Donald Groen Julius Prize from the Institute of Mechanical Engineers (2008). Dr. Annaswamy has been elected to be a Fellow of the IEEE (2002) and IFAC (2017). She received a Distinguished Member Award and a Distinguished Lecturer Award from IEEE CSS in 2017. Dr. Annaswamy is actively involved in IFAC, IEEE, and IEEE CSS. She has served as General Chair of the American Control Conference (2008) as well as the 2nd IFAC Conference on Cyber-Physical & Human Systems (2018). She is Deputy Editor of the Elsevier publication Annual Reviews in Control (2016-present). She has been a member of IEEE Fellows Committee and the IEEE CSS Outreach Committee, and is the Chair of IEEE Smart Grid Meetings and Conferences. In IEEE CSS, she has served as Vice President of Conference Activities (2015-16) and Technical Activities (2017-18), and will serve as the President in 2020.

2.4. Call for Nominations: 2019 Dave Ward Memorial Lecture Award
Contributed by: David Doman, david.doman@us.af.mil

Nominations sought for 2019 Dave Ward Memorial Lecture Award

The Aerospace Control and Guidance Systems Committee (ACGSC) is seeking nominations for the 2019 Dave Ward Memorial Lecture Award. This award is to recognize significant contributions by a young member of the aerospace community (35 years old or less at the time of the nomination deadline) to development of flight dynamics, control, and guidance system technologies. The award is in memory of Dave Ward who was Vice-Chair and Chair-Elect of ACGSC, and he was very active in recruiting young members to the committee. Dave passed away in April 2010 at age 46 after a long and courageous battle with cancer.

The award consists of a plaque and free registration to attend the Fall meeting of the ACGSC. The recipient of the award will present an invited lecture on their technical contributions in a special session of the meeting. The award recipient will be reimbursed for reasonable travel expenses up to $1,500 to attend the meeting. The nomination process is web-based. Please see the attached award description for additional

information and visit www.acgsc.org to nominate a candidate. An account with ACGSC is required to log in and create the nomination. If you do not have an ACGSC account, you can request an account on the website. The nomination deadline for this award cycle is July 31, 2019. Therefore, nominees must have been born after July 31, 1984 in order to be eligible for the award. The 2019 Fall meeting of the ACGSC will be held October 16-18, 2019 in Williamsburg, VA. The mission of the ACGSC is to provide a forum for discussion, development, and rapid dissemination of technical information related to aerospace control and guidance systems. Additional information is available at: www.acgsc.org. Any questions regarding this award should be sent to WardAward@acgsc.org. Please share this information with your colleagues and help us spread the word about this award among the aerospace research community.

Marge Draper-Donley
Chairman, ACGSC

3   Books

3.1.   Control of Wave and Beam PDEs
   Contributed by: Laura Burgess, laura.burgess@springer.com

Control of Wave and Beam PDEs by Bao-Zhu Guo and Jun-Min Wang
ISBN: 978-3-030-12480-9
May 2019, Springer
Hardcover, 596 pages, $179.99/€149.99
https://www.springer.com/gp/book/9783030124809

Control of Wave and Beam PDEs is a concise, self-contained introduction to Riesz bases in Hilbert space and their applications to control systems described by partial differential equations (PDEs). The authors discuss classes of systems that satisfy the spectral determined growth condition, the problem of stability, and the relationship between fulfillment of the condition and stability.

Using the (fundamental) Riesz-basis property, the book shows how controllability, observability, stability, etc., can be derived for a linear system. The text provides a crash course in the mathematical theory of Riesz bases so that a reader can quickly understand this powerful method of dealing with linear PDEs. It introduces several important methods for achieving the Riesz basis property through spectral analysis, as well as new approaches including treatment of systems coupled through boundary weak connections.

The book moves from a discussion of mathematical preliminaries through bases in Hilbert Spaces to applications to Euler–Bernoulli and Rayleigh beam equations and hybrid systems. The final chapter expands the use of the book's methods to applications in other systems.

Many typical examples, representing physical systems, are discussed in the text. The book is suitable not only for applied mathematicians seeking a powerful tool to understand control systems, but also for control engineers interested in the mathematics of PDE systems.

Contents
1. Preliminaries
2. Bases in Hilbert Spaces
3. Riesz Basis Generation: Comparison Method
4. Riesz Basis Generation: Dual-Basis Approach
5. Riesz Basis Generation: Green Function Approach
6. Stabilization of Coupled Systems Through Boundary Connection

3.2.   Dynamic Programming for Impulse Feedback and Fast Controls
   Contributed by: Laura Burgess, laura.burgess@springer.com

Dynamic Programming for Impulse Feedback and Fast Controls by Alexander B. Kurzhanski and Alexander N. Daryin
ISBN: 978-1-4471-7436-3

April 2019, Springer
Hardcover, 275 pages, $169.99/€139.99
https://www.springer.com/gp/book/9781447174363

Dynamic Programming for Impulse Feedback and Fast Controls offers a description of feedback control in the class of impulsive inputs. This book deals with the problem of closed-loop impulse control based on generalization of dynamic programming techniques in the form of variational inequalities of the Hamilton–Jacobi–Bellman type. It provides exercises and examples in relation to software, such as techniques for regularization of ill-posed problems. It also gives an introduction to applications such as hybrid dynamics, control in arbitrary small time, and discontinuous trajectories.

This book walks the readers through:
• the design and description of feedback solutions for impulse controls;
• the explanation of impulses of higher order that are derivatives of delta functions;
• the description of their physically realizable approximations - the fast controls and their approximations;
• the treatment of uncertainty in impulse control and the applications of impulse feedback.
Of interest to both academics and graduate students in the field of control theory and applications, the book also protects users from common errors, such as inappropriate solution attempts, by indicating Hamiltonian techniques for hybrid systems with resets.

Contents
1. Introduction: Why Impulses?
2. Open-Loop Impulse Control
3. Closed-Loop Impulse Control
4. Impulse Control Under Uncertainty
5. State-Constrained Impulse Control
6. State Estimation Under Ordinary Impulsive Inputs
7. The Open-Loop and Closed-Loop Impulse Controls
8. State-Constrained Control Under Higher Impulses
9. State Estimation and State Constrained Control
10. Generalized Duality Theory. The Increasing and Decreasing Lagrangian Scales
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3.3. Networked Control Systems: Cloud Control and Secure Control
    Contributed by: Sonnini Ruiz Yura, s.yura@elsevier.com

Networked Control Systems: Cloud Control and Secure Control
ISBN:9780128161197
February 2019, Butterworth-Heinemann
Paperback, 502 pages, $150
Authors: Magdi Mahmoud Yuanqing Xia
https://www.elsevier.com/books/networked-control-systems/mahmoud/978-0-12-816119-7

Networked Control Systems: Cloud Control and Secure Control explores new technological developments in networked control systems (NCS), including new techniques, such as event-triggered, secure and cloud control. It provides the fundamentals and underlying issues of networked control systems under normal operating environments and under cyberphysical attack. The book includes a critical examination of the principles of cloud computing, cloud control systems design, the available techniques of secure control design to NCS's under cyberphysical attack, along with strategies for resilient and secure control of cyberphysical systems. Smart grid infrastructures are also discussed, providing diagnosis methods to analyze and counteract impacts.

Finally, a series of practical case studies are provided to cover a range of NCS's. This book is an essential resource for professionals and graduate students working in the fields of networked control systems, signal processing and distributed estimation.

Key Features:
- Provides coverage of cloud-based approaches to control systems and secure control methodologies to protect cyberphysical systems against various types of malicious attacks
- Provides an overview of control research literature and explores future developments and solutions
- Includes case studies that offer solutions for issues with modeling, quantization, packet dropout, time delay and communication constraints

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3. Cloud Computing
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5. Secure Control Design Techniques
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8. Secure Resilient Control Strategies
9. Cyberphysical Security Methods
10. Appendix

3.4. A Relaxation-Based Approach to Optimal Control of Hybrid Systems
Contributed by: Sonnini Yura, s.yura@elsevier.com

A Relaxation-Based Approach to Optimal Control of Hybrid and Switched Systems: A Practical Guide for Engineers
Author: Vadim Azhmyakov
ISBN: 9780128147887
February 2019, Butterworth-Heinemann
Paperback, 434 pages, $125
https://www.elsevier.com/books/a-relaxation-based-approach-to-optimal-control-of-hybrid-and-switched-systems/azhmyakov/978-0-12-814788-7

A Relaxation Based Approach to Optimal Control of Hybrid and Switched Systems proposes a unified approach to effective and numerically tractable relaxation schemes for optimal control problems of hybrid and switched systems. The book gives an overview of the existing (conventional and newly developed) relaxation techniques associated with the conventional systems described by ordinary differential equations. Next, it constructs a self-contained relaxation theory for optimal control processes governed by various types (sub-classes) of general hybrid and switched systems. It contains all mathematical tools necessary for an adequate understanding and using of the sophisticated relaxation techniques.

In addition, readers will find many practically oriented optimal control problems related to the new class of dynamic systems. All in all, the book follows engineering and numerical concepts. However, it can also be considered as a mathematical compendium that contains the necessary formal results and important algorithms related to the modern relaxation theory.

Key Features:
- Illustrates the use of the relaxation approaches in engineering optimization
- Presents application of the relaxation methods in computational schemes for a numerical treatment of the sophisticated hybrid/switched optimal control problems
- Offers a rigorous and self-contained mathematical tool for an adequate understanding and practical use of the relaxation techniques
- Presents an extension of the relaxation methodology to the new class of applied dynamic systems, namely, to hybrid and switched control systems

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4 Journals

4.1. CFP: Machine Learning and Dynamical Systems in Physica D
Contributed by: Boumediene Hamzi, boumediene.hamzi@gmail.com

I am pleased to inform you that the Call for Papers for the Special Issue on Contributions to Machine Learning and Dynamical Systems in Physica D is now online at
https://www.journals.elsevier.com/physica-d-nonlinear-phenomena/call-for-papers/contributions-to-machine-learning-and-dynamical-systems
There are two possible formats for the papers: research contributions and tutorials.
The submission deadline: September 1st, 2019.
The acceptance deadline: March 1st, 2020.
Article Type Name: It is important that authors select the correct article type when they submit their articles in EVISE. If authors select the wrong article type their paper may end up publishing in a regular issue and not the special issue. When submitting their papers, authors must select VSI:MLDS as the article type.

Please feel free to advertise for this special issue among your colleagues.

4.2. CFP: Special Issue of the Open Access journal Processes
Contributed by: Sigurd Skogestad, skoge@ntnu.no

Invitation to submit papers to Special issue of the open access journal Processes on "Real-time optimization of processes using simple control structures, economic MPC or machine learning."

Dear Colleagues,
I think Processes is the best open access journal in our field and I'm happy to announce that we are planning a special issue of 'Processes' on "Real-time optimization of processes using simple control structures, economic MPC or machine learning." The main motivation behind the special issue, is the realization that real-time optimization is not used as much in practice as one would expect, so there is a need for new approaches, of which some are listed in the above title. Other approaches than the one listed in the title of the special issue may be also be included. The deadline for the manuscripts is November 15.

However, for further planning we would like to know until June 5, whether you are considering to contribute and if so we would need a preliminary title of your planned contribution(s). For more information see here:
https://www.mdpi.com/journal/processes/special_issues/real_time_process

Guest Editor
Prof. Sigurd Skogestad
skoge@ntnu.no
Department of Chemical Engineering, Norwegian University of Science and Technology (NTNU), 7491 Trondheim, Norway
Interests: Use of feedback as a tool to reduce uncertainty, change the system dynamics, and make the system more well-behaved, including self-optimizing control; Limitations on performance in linear systems,

Real-time optimization; Control structure design and plantwide control; Interactions between process design and control. Distillation column design, control and dynamics

Guest Editor
Dr. Dinesh Krishnamoorthy
dinesh.krishnamoorthy@ntnu.no
Department of Chemical Engineering, Norwegian University of Science and Technology (NTNU), 7491 Trondheim, Norway
Interests: Real-time optimization and plantwide control; model-predictive control under uncertainty; measurement and learning-based optimization and control.

4.3. CFP: Control Theory and Technology
Contributed by: Zou Tiefeng, tfzou@scut.edu.cn

Call for Papers: Control Theory and Technology
https://link.springer.com/journal/11768
Special Issue on Networked System Control and Connected Vehicles: Opportunities and Challenges

Guest Editors
Hong Chen (Jilin University, China)
Tielong Shen (Sophia University, Japan)

In the past two decades, as the first industry introduced IoT with big scale, automotive industry promoted connectivity in the vehicle network. This trend provided a big opportunity for control technology, since networked system control was focused much attention in the system control field, the last two decades. A lot of advanced theoretical results have been proposed by the control theory researchers. The scope of this special issue is to provide a stage for both of control theorists and the practitioners of automotive control to present new results and to exchange challenging problems and solutions.

Topics include but not limited to
- Networked system control
- Optimization of networked system
- V2V, V2I and control
- Prediction and online optimization
- Learning control of connected vehicles
- Game theoretic control of networked system and application in vehicles

All manuscripts must be submitted through the manuscripts system at
https://mc03.manuscriptcentral.com/ctt

Manuscripts should be clearly marked as being submitted to the Special issue on Networked System Control and Connected Vehicles: Opportunities and Challenges (Please clarify in the cover note if the paper is submitted to this special issue).

Submission Deadline: 30 June, 2019
Acceptance Notification: 1 August, 2019
Publication Date: October 2019

For Further Information about Paper Submissions, please email to jcta@scut.edu.cn. Control Theory and Technology (formerly named Journal of Control Theory and Applications) publishes high-quality papers in the broadest areas of systems and controls, covering original research results and applications of new and established control methods. The journal is published by Springer Science and indexed in SCOPUS, EI-Compendex, INSPEC, etc.

4.4. CFP: AIAA Journal of Aerospace Information Systems
Contributed by: Nisar Ahmed, nisar.ahmed@colorado.edu

Call for submissions: Special Issue on Multi-agent Coordination and Control, AIAA Journal of Aerospace Information Systems

Purpose and Scope:
Autonomous multi agent systems have a broad array of functionalities and are being used in many diverse and growing applications. With this growth there is an increasing need for control and planning architectures/algorithms for coordinating multi-agent systems. We aim to emphasize applications from the perspective of information, perception and communications to make autonomous decisions possible. The purpose of this special issue is to have a discussion on the state of the art in control and coordination of multi-agent systems from intelligent systems perspective. Looking at problems where there is minimal human oversight or where operator intents must be understood. How can teams of agents fulfill mission objectives with uncertain or partial information? The scope of the issue includes novel control and coordination techniques and distributed estimation approaches, as well as novel system level design and implementation to make these methodologies possible.

Topics of interest
* Intelligent systems for multi-agent applications
* Human-machine interaction with multi-agent systems
* Security challenges in the multi-agent systems
* Cooperative path planning
* Mission planning under uncertainty or partial information
* Multi-agent operations in GPS-denied environments
* Both distributed and centralized solutions
* Hierarchical decision methodologies

Dates
* Submission deadline: August 12, 2019
* Expected publication date: December 2019

Guest Editors
* Dr. David Casbeer, AFRL

* Dr. Rajnikant Sharma, University of Cincinnati
* Dr. Satyanarayana Manyam, InfoSciTex Corp.

Submission website:
https://mc.manuscriptcentral.com/aiaa-jais

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

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Vol.21, No.2 March, 2019
https://onlinelibrary.wiley.com/toc/19346093/2019/21/2

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Authors: Zhoujingzi Qiu, Shiqiang Hu, Xinwu Liang

12. Paper Title: Optimal non-blocking decentralized supervisory control with unobservable controllable events (Pages: 800-808)

Authors: Vahid Saeidi, Ali A. Afzalian, Davood Gharavian

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Authors: Maoning Tang, Qingxin Meng

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Authors: Adam Owczarkowski, Dariusz Horla, Joanna Zietkiewicz

4.6. Evolution Equations and Control Theory
Contributed by: Irena Lasiecka, lasiecka@memphis.edu

The new issue of Evolution Equations and Control Theory EECT is now online.
http://www.aimsciences.org/journal/A0000-0000/2019/8/2

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4.7. IEEE/CAA Journal of Automatica Sinica
Contributed by: Yan Ou, yn.ou@ia.ac.cn

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4.8. Systems and Control Letters
Contributed by: Lusia Veksler and Miroslav Krstic, lveksler@ucsd.edu

Volume 126, April 2019
https://www.sciencedirect.com/journal/systems-and-control-letters/vol/126/suppl/C

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4.9. Control Theory and Technology
Contributed by: Zou Tiefeng, tfzou@scut.edu.cn

Control Theory and Technology

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(formerly entitled Journal of Control Theory and Applications)

Vol. 17, No. 2, May 2019

ISSN: 2095-6983

http://www.springer.com/engineering/control/journal/11768 Special issue on benchmark problems in automotive system control

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4.10. International Journal of Control, Automation, and Systems
Contributed by: Keum-Shik Hong, journal@ijcas.com

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

ISSN: 1598-6446

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

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

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4.11. IMA Journal of Mathmatical Control and Information
Contributed by: Charlotte Parr, charlotte.parr@oup.com

IMA Journal of Mathematical Control and Information, 36 (1)

Links to all articles in this issue are available online at:

https://academic.oup.com/imamci/issue/36/1

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4.12. IET Control Theory and Applications
Contributed by: Alexandria Lipka, alipka@theiet.org

IET Control Theory & Applications
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4.13. International Journal of Control
Contributed by: Bing Chu, b.chu@soton.ac.uk

International Journal of Control
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http://www.tandfonline.com/toc/tcon20/current

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5 Conferences and Workshops

5.1. Conference on System Theory, Control and Computing, Romania
Contributed by: Radu-Emil Precup, radu.precup@aut.upt.ro

23rd International Conference on System Theory, Control and Computing - ICSTCC 2019
October 9-11, 2019, Sinaia, Romania
Website: http://icstcc2019.cs.upt.ro/

ICSTCC 2019 aims at bringing together under a unique forum, scientists from academia and industry, to discuss the state of the art and the new trends in System Theory, Control and Computer Engineering, promoting professional interactions and fellowship.

ICSTCC 2019 is technically co-sponsored by the IEEE Control Systems Society. In accordance with the Letter of Acquisition signed with IEEE, the Proceedings of ICSTCC 2019 will be submitted for inclusion in IEEE Xplore Digital Library. The Proceedings will also be submitted for indexing in Clarivate Analytics Conference Proceedings Citation Index (formerly ISI Proceedings).

ICSTCC 2019 conference will be hosted by the beautiful Palace Hotel, Sinaia. Sinaia is one of the most famous and oldest mountain tourist resorts in Romania, known as "The Carpathian Pearl". It is best known for being the summer residence of the Romanian Royal family. We are planning a number of field trips: Bran Castle (Dracula's Castle) and Peles Castle.

Confirmed keynote speakers:
Maria Elena Valcher (University of Padova, Italy)
Marios M. Polycarpou (University of Cyprus, Cyprus)
Marcin Paprzycki (Polish Academy of Sciences, Poland)
Gianluca Tempesti (University of York, UK)

Important dates:
- April 19, 2019: Submission of proposals for invited sessions
- April 26, 2019: Initial submission of papers
- June 28, 2019: Notification of acceptance for papers
- July 26, 2019: Final camera ready manuscript and registration payment

The main areas of interest are: Automation and Robotics; Computer Science and Engineering; Electronics and Instrumentation. All papers should be submitted via the online submission system at
http://controls.papercept.net/conferences/scripts/start.pl#STCC19

For further information please contact the organizing committee at: icstcc2019@cs.upt.ro.

5.2. IEEE Connected and Automated Vehicles Symposium, USA
Contributed by: Yue Wang, yue6@clemson.edu

2nd IEEE Connected and Automated Vehicles Symposium (IEEE CAVS 2019) 22-23 September 2019, Honolulu, Hawaii, USA http://ieee-cavs.org/
Full paper submission: April 15, 2018

With the advances in computing and communication technologies, vehicle technology has entered a new era of connected and automated vehicles (CAVs). The host of technologies that are required to enable CAVs are many and span several engineering and science disciplines. This symposium aims to bring together researchers who are working on different aspects of CAVs. IEEE CAVS is a symposium for reporting advances in all aspects of CAVs, including theory, tools, protocols, networks, applications, systems, testbeds and field deployments. IEEE CAVS 2019 will be held on 22-23 September 2019 in Honolulu, Hawaii, co-located with IEEE VTC-2019 Fall (September 22-25, 2019, http://www.ieeevtc.org/vtc2019fall/). Standalone and combined registrations packages will be offered for IEEE CAVS and IEEE VTC2019-Fall events. Areas of interest include (but are not limited to) the following:

- Autonomous driving
- Motion Planning, Decision-Making, and Controls for CAVs
- Vehicular networks. V2V, V2I and V2X communications
- ADAS technologies, systems and applications
- Artificial Intelligence and Machine Learning for CAVs
- 5G for connected and automated vehicles
- In-vehicle communications
- Sensing, detection, and actuation
- Formal Methods and Model Checking in Autonomous Driving
- Multi-CAV Coordination
- Multi-sensor fusion
- Mapping and localization
- Vision and environment perception
- In-car electronics and embedded software, OS and systems
- Networked automotive cyber-physical systems
- Automotive IoT
- Vehicular and transportation data analytics
- Automotive cybersecurity, liability and privacy
- Smart and shared mobility systems and applications
- Coexistence of CAVs, automated, connected and conventional/legacy vehicles
- Connected and automated vehicle safety applications
- Cooperative driving and cooperative perception/sensing
- Impact of CAVs on transport safety, traffic management, characterization and prediction
- Computer aided modeling, simulation, verification
- Field trials
- Standards development, business models, policies
- Human factors, human machine interfaces and Human-Vehicle Interaction
- Emotion detection in self-driving vehicles
- CAVs and vulnerable road users

Prospective authors are invited to submit 5-page, original, and unpublished full papers. Manuscripts

should be formatted according to IEEE two-column conference style, including figures and references. You can find the template at the CFP section in http://ieee-cavs.org/ Manuscripts should be submitted through Trackchair: https://vtc2019f-rr-wks.trackchair.com/track/1764

All submissions will undergo peer-review by subject matter experts, and the full paper version of accepted submissions will be published in the conference proceedings and submitted to IEEE Xplore (conditional on in-person presentation at the conference). Standalone and combined registrations packages will be offered for IEEE CAVS and IEEE VTC2019-Fall events.

General Co-Chairs
Javier Gozalvez, Universidad Miguel Hernandez de Elche, Spain
Yaser P. Fallah, University of Central Florida, USA
Cem Seraydar, General Motors, USA

Technical Program Co-Chairs
David W. Matolak, University of South Carolina, USA
Dongpu Cao, University of Waterloo, Canada
Panagiotis Tsiotras, Georgia Tech, USA

Publicity Co-Chairs
Sedat Ozer, University of Central Florida, USA
Yue Wang, Clemson University, USA
Baldomero Coll-Perales, Universidad Miguel Hernandez de Elche, Spain

5.3. International Workshop on Human-Friendly Robotics, Italy
Contributed by: Marcello Bonfe, marcello.bonfe@unife.it

HFR 2019: Call for Papers and First Announcement
The 12th International Workshop on Human-Friendly Robotics (HFR 2019)
October 24-25, 2019 - Reggio Emilia, Italy
http://www.hfr2019.unimore.it

The objective of the International Workshop on Human-Friendly Robotics is to stimulate a focused single-track discussion and bring together researchers so to share knowledge on design, control, safety and ethical issues, concerning the introduction of robots into everyday life. The workshop covers a wide range of topics related to human-robot interaction, both physical and cognitive, including theories, methodologies, technologies, empirical and experimental studies.

In particular, the topics of interest include, but are not limited to:
FUNDAMENTS OF HUMAN-FRIENDLY ROBOTS:
* mechatronic design
* control methods for safe and adaptive interaction
* interaction-based robot design
* telerobotic systems

* methods for physical and cognitive human-robot interaction
* multimodal human-robot communication
* human monitoring and intention recognition
* cognitive modeling
* adaptive interfaces
* cooperative task execution and sliding autonomy
* learning by demonstration
* human factors
* benchmarking and performance analysis
* social and ethical issues

APPLICATIONS OF HUMAN-FRIENDLY ROBOTS:
* medical and rehabilitation devices
* prostheses and orthoses
* robot assisted therapy
* personal and entertainment robots
* collaborative robots
* social robots
* telerobotics
* human-robot interaction in hazardous environments.

Important Dates:
* SUBMISSION OF CONTRIBUTED PAPERS: June 24, 2019
* Notification of paper acceptance: August 25, 2019
* Submission of final papers: September 15, 2019
* HFR 2019 Workshop: October 24-25, 2019

Paper Submission:

Prospective authors should submit their paper in the form of a single PDF file of up to 14 pages, prepared according to the guidelines provided by Springer for Proceedings in Advanced Robotics (SPAR). Templates for LaTeX and Microsoft Word users can be downloaded from the Information for Authors page of the HFR 2019 website: http://www.hfr2019.unimore.it. Authors are also encouraged to provide a video clip accompanying their paper, by including a link to their video on YouTube (or any other website reachable by reviewers) in the PDF of the paper itself. Manuscripts for review must be submitted via EasyChair: https://easychair.org/conferences/?conf=hfr2019
The Best Paper of the 12th International Workshop on Human-Friendly Robotics will be awarded a prize of 300€, kindly offered by Robotics, an Open Access journal of MDPI.

Committee:
General Chairs:
* Dr. Federica Ferraguti - University of Modena and Reggio Emilia (Italy)
* Dr. Valeria Villani - University of Modena and Reggio Emilia (Italy)

Program Chair:

* Prof. Lorenzo Sabattini - University of Modena and Reggio Emilia (Italy)

Publicity Chair:
* Dr. Marcello Bonfè - University of Ferrara (Italy)

5.4. European Workshop on Advanced Control and Diagnosis, Italy
Contributed by: Silvio Simani, silvio.simani@unife.it

15th European Workshop on Advanced Control and Diagnosis (ADS 2019)
21-22 November 2019, Bologna, Italy
https://eventi.unibo.it/acd2019

The Organizing Committee has the pleasure of inviting you to submit papers and invited session proposals for the 15th European Workshop on Advanced Control and Diagnosis, which will be held in Bologna, Italy, on November 21-22, 2019.

The submission site is now open https://ocs.springer.com/misc/home/ACD2019 Information for authors are available at
https://eventi.unibo.it/acd2019/paper-submission
Submission Deadline: May 31, 2019
Invited Session Proposals Deadline: May 31, 2019
Notification of Acceptance: July 10, 2019
Final Paper Submission: July 31, 2019
Early Registration Deadline: July 31, 2019
Workshop Dates: November 21-22, 2019

Paper awards
Best Student Paper Award https://eventi.unibo.it/acd2019/best-student-paper-award
Best Industry Paper Award
https://eventi.unibo.it/acd2019/best-industry-paper-award

Plenary Speakers
Sarah Spurgeon (University College London) - Thursday, November 21, hrs 9.00-10.00
Alessandro Giua (Università di Cagliari & Aix-Marseille Université) - Friday, November 22, hrs 9.00-10.00

The technical program will be announced early September. Authors are invited to submit papers and invited session proposals in all areas of advanced control and fault diagnosis. Papers will be reviewed by at least three independent reviewers and acceptance/ rejection will be decided by the IPC. At least one author is required to register at the conference and present his/her paper for this to be included in the proceedings. By uploading their manuscript, the authors certify that the submission represents original work that neither has appeared or has been accepted to appear elsewhere for publication, nor is under review for another publication in its current form.

The conference proceedings will be published online in a volume of the Springer series "Lecture Notes in Control and Information Sciences – Proceedings" https://eventi.unibo.it/acd2019/paper-submission.

Full Registration: 250,00 Euro before 31 July 2019 (280,00 Euro after 31 July 2019).
Student Registration: 150,00 Euro before 31 July 2019 (170,00 Euro after 31 July 2019).
Industry Day: 150,00 Euro before 31 July 2019 (170,00 Euro after 31 July 2019).

Contact:
Dr. Elena Zattoni
Department of Electrical, Electronic and Information Engineering "G. Marconi"
Alma Mater Studiorum Università di Bologna
Viale Risorgimento 2, 40136 Bologna, Italy
Phone: +39 051 2093023
E-mail: elena.zattoni@unibo.it

Workshop Secretariat: acd2019@unibo.it
Workshop Website: https://eventi.unibo.it/acd2019

5.5. Workshop on Collaboration Control & Planning for Unmanned Systems, USA
Contributed by: Jing Wang, jingwang@bradley.edu

CFP: IEEE International Workshop on Collaboration Control & Planning for Unmanned Systems and Robots

In recent years, unmanned systems and autonomous robots have been increasingly popular in many industrial applications, such as industrial manipulators for manufacturing, welding robots, AGVs for logistics, etc. In these applications, collaboration control & planning play an important role in conducting complex tasks performed by multi-robot or human-robot collaborative systems. This workshop addresses the design and the implementation of efficient hardware platforms and intelligent algorithms for control and motion planning of unmanned systems and autonomous robots. Our objective is to facilitate the exchange of new ideas and to promote collaboration among researchers in this active field of robotics.
Topics of interest include, but are not limited to:
o Human-robot collaboration
o Cooperative control of multi-robot systems
o Human-robot interaction
o Motion planning and task planning
o Navigation, mapping, localization and path planning
o Mobile robotics in industrial applications
o Soft robotics in industrial applications

Important dates:
Workshop paper Submission Deadline: July 15, 2019 EDT
Workshop paper Acceptance Notification: August 15, 2019 EDT
Workshop paper Camera-Ready Due: August 31, 2019 EDT
http://www.ieee-icii.org/wkp.html

Paper can be submitted through the line below: https://edas.info/newPaper.php?c=26177

5.6. SIAM Conference on Control and Its Applications, China
Contributed by: Maxwell Hayes, hayes@siam.org

The SIAM Activity Group on Control and Systems Theory (SIAG/CST) is pleased to announce that registration and the conference program for the SIAM Conference on Control and Its Applications (CT19) are now available.

Sponsored by the SIAM Activity Group on Control and Systems Theory (SIAG/CST)
Location: Chengdu Cynn Hotel, Chengdu, China
Dates: June 19-21, 2019

Registration and the conference program are now posted at
http://siamct19.cuit.edu.cn/index.htm#promo

Preregistration deadline: May 19, 2019
General Conference Chair:
Jiliu Zhou, Chengdu University of Information Technology, China

Organizing Committee Co-Chairs:
William Levine, University of Maryland, College Park, U.S.
Richard Stockbridge, University of Wisconsin-Milwaukee, U.S.

Invited Speakers:
Lei Guo, Chinese Academy of Sciences, China
Miroslav Krstic, University of California at San Diego, U.S.
Shige Peng, Shandong University, China
Claire Tomlin, University of California at Berkeley, U.S.

For additional information, contact siamct19@cuit.edu.cn

5.7. IEEE Connected and Automated Vehicles Symposium, USA
Contributed by: Panagiotis Tsiotras, tsiotras@gatech.edu

2nd IEEE Connected and Automated Vehicles Symposium (IEEE CAVS 2019)
22-23 September 2019, Honolulu, Hawaii, USA
http://ieee-cavs.org/

Extended submission deadline: May 10, 2018

A selection of the best conference papers will be invited to submit to a fast track special section of the IEEE Transactions on Vehicular Technology (IF=4.43). Only papers presented at the conference will be considered. Submissions to the special section need to be extended versions of the conference paper with at least 50% of new content. Regular submissions will also opt for a Best Paper Award and student submissions will opt for a Best Student Paper Award. For the latter, the paper must be presented by the student who is first author of the paper.

With the advances in computing and communication technologies, vehicle technology has entered a new era of connected and automated vehicles (CAVs). The host of technologies that are required to enable CAVs are many and span several engineering and science disciplines. This symposium aims to bring together researchers who are working on different aspects of CAVs. IEEE CAVS is a symposium for reporting advances in all aspects of CAVs, including theory, tools, protocols, networks, applications, systems, testbeds and field deployments. IEEE CAVS 2019 will be held on 22-23 September 2019 in Honolulu, Hawaii, co-located with IEEE VTC-2019 Fall (September 22-25, 2019,http://www.ieeevtc.org/vtc2019fall/). Standalone and combined registrations packages will be offered for IEEE CAVS and IEEE VTC2019-Fall events. Areas of interest include (but are not limited to) the following:
- Autonomous driving
- Motion Planning, Decision-Making, and Controls for CAVs
- Vehicular networks. V2V, V2I and V2X communications
- ADAS technologies, systems and applications
- Artificial Intelligence and Machine Learning for CAVs
- 5G for connected and automated vehicles
- In-vehicle communications
- Sensing, detection, and actuation
- Formal Methods and Model Checking in Autonomous Driving
- Multi-CAV Coordination
- Multi-sensor fusion
- Mapping and localization
- Vision and environment perception
- In-car electronics and embedded software, OS and systems
- Networked automotive cyber-physical systems
- Automotive IoT
- Vehicular and transportation data analytics
- Automotive cybersecurity, liability and privacy
- Smart and shared mobility systems and applications
- Coexistence of CAVs, automated, connected and conventional/legacy vehicles
- Connected and automated vehicle safety applications
- Cooperative driving and cooperative perception/sensing
- Impact of CAVs on transport safety, traffic management, characterization and prediction
- Computer aided modeling, simulation, verification
- Field trials
- Standards development, business models, policies
- Human factors, human machine interfaces and Human-Vehicle Interaction
- Emotion detection in self-driving vehicles
- CAVs and vulnerable road users

Prospective authors are invited to submit 5-page, original, and unpublished full papers. Manuscripts should be formatted according to IEEE two-column conference style, including figures and references. You can find the template at the CFP section in http://ieee-cavs.org/ Manuscripts should be submitted through Trackchair:https://vtc2019f-rr-wks.trackchair.com/track/1764

All submissions will undergo peer-review by subject matter experts, and the full paper version of accepted submissions will be published in the conference proceedings and submitted to IEEE Xplore (conditional on in-person presentation at the conference). Standalone and combined registrations packages will be offered for IEEE CAVS and IEEE VTC2019-Fall events.

General Co-Chairs
Javier Gozalvez, Universidad Miguel Hernandez de Elche, Spain
Yaser P. Fallah, University of Central Florida, USA
Cem Seraydar, General Motors, USA

Technical Program Co-Chairs
David W. Matolak, University of South Carolina, USA
Panagiotis Tsiotras, Georgia Tech, USA
Dongpu Cao, University of Waterloo, Canada

5.8. International Conference on Systems and Control, Morocco
Contributed by: Driss Mehdi, driss.mehdi@univ-poitiers.fr

The 8th International Conference on Systems and Control (ICSC 2019)
The 8th edition of the International Conference on Systems and Control will be held on October 23-25, 2019, at the University of CADDI AYYAD, Marrakech, Morocco. This edition is technically co-sponsored by IEEE CSS.

Paper submission: Papers must be submitted electronically via the Web upload system only. The guidelines are given at the ICSC'19 Web site. The authors are invited to submit the full version of their manuscripts online through the online paper submission

https://controls.papercept.net/conferences/scripts/start.pl

Important Dates:
Contributed papers, invited session papers: April 30, 2019
Notification of Acceptance / Rejection: June 30, 2019
Final, Camera ready papers due: July 30, 2019
Conference opening: October 23, 2019

Websites:
http://lias.labo.univ-poitiers.fr/icsc/icsc2019/

Program Chairs
Fouad Mesquine, Morocco
Fernando Tadeo, Spain
Mohamed Machmoum, France

General Chairs:
Abdellah Benzaouia, Morocco
Mohamed Msaad, France

For more information please feel free to contact Prof. Driss Mehdi (driss.mehdi@univ-poitiers.fr).

5.9. International Conference on System Theory, Control and Computing, Romania
   Contributed by: Radu-Emil Precup, radu.precup@aut.upt.ro

23rd International Conference on System Theory, Control and Computing - ICSTCC 2019
October 9-11, 2019, Sinaia, Romania
Website: http://icstcc2019.cs.upt.ro/

ICSTCC 2019 aims at bringing together under a unique forum, scientists from academia and industry, to discuss the state of the art and the new trends in System Theory, Control and Computer Engineering, promoting professional interactions and fellowship. ICSTCC 2019 is technically co-sponsored by the IEEE Control Systems Society. In accordance with the Letter of Acquisition signed with IEEE, the Proceedings of ICSTCC 2019 will be submitted for inclusion in IEEE Xplore Digital Library. The Proceedings will also be submitted for indexing in Clarivate Analytics Conference Proceedings Citation Index (formerly ISI Proceedings).

ICSTCC 2019 conference will be hosted by the beautiful Palace Hotel, Sinaia. Sinaia is one of the most famous and oldest mountain tourist resorts in Romania, known as "The Carpathian Pearl." It is best known for being the summer residence of the Romanian Royal family. We are planning a number of field trips: Bran Castle (Dracula's Castle) and Peles Castle.

Confirmed keynote speakers:
Maria Elena Valcher (University of Padova, Italy)
Marios M. Polycarpou (University of Cyprus, Cyprus)
Marcin Paprzycki (Polish Academy of Sciences, Poland)
Gianluca Tempesti (University of York, UK)

Important dates:
- May 20, 2019: Initial submission of papers (firm deadline, no further extension)
- June 28, 2019: Notification of acceptance
- July 26, 2019: Final camera ready manuscript and registration payment

The main areas of interest are: Automation and Robotics; Computer Science and Engineering; Electronics

and Instrumentation. All papers should be submitted via the online submission system at
http://controls.papercept.net/conferences/scripts/start.pl#STCC19
For further information please contact the organizing committee at: icstcc2019@cs.upt.ro.

5.10. Indian Control Conference, India
Contributed by: Mathukumalli Vidyasagar, m.vidyasagar@iith.ac.in

The Indian Control Conference (ICC) is an annual international conference devoted to advances in the broad areas of control and system theory and allied areas, and their applications. The ICC is held every year at a different academic institution in India.

The Sixth Indian Control Conference (ICC-6) will be held on the campus of the Indian Institute of Technology Hyderabad (IITH) during December 18-20, 2019. ICC-6 is technically co-sponsored by the IEEE Control Systems Society, and its Proceedings will be included in IEEE Xplore after a quality check.

There will be four plenary speakers at ICC-6, namely:

Stephen P. Boyd, Stanford
Yonina Eldar, Weizmann Institute
Rajeeva L. Karandikar, Chennai Mathematical Institute
Kristin Pettersen, Norwegian University of Science and Technology

There will be pre-conference tutorial sessions on the first day. I request you to consider submitting a paper to ICC-6, and bring the event to the attention of interested colleagues. Hyderabad is a historic city and the weather in December will be extremely pleasant.

The paper submission deadline is 05 June 2019. More details can be found at the conference web site: icc.org.in. For any queries please contact me in my capacity as the General Chair. Thank you and best wishes.
M. Vidyasagar
General Chair
Sixth Indian Control Conference

5.11. International Conference on Control, Automation and Systems, South Korea
Contributed by: Zee Yeon Lee, conference@icros.org

2019 19th International Conference on Control, Automation and Systems (ICCAS 2019), October 15–18, 2019
ICC Jeju, Korea
http://2019.iccas.org

Call for Papers: http://icros.org/data/download/ICCAS2019/ICCAS2019_CFP.pdf 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 31, 2019 : Submission of Regular Papers (3-6 pages)
- June 30, 2019 : Submission of Organized Session/Mini-symposium Proposal
with Papers and Research Poster Papers (1-2 pages)
- July 31, 2019 : Notification of Acceptance
- August 31, 2019 : Submission of Final Camera-ready Papers

Paper Submission:
The conference invites three types of submission: "Regular Paper", "Research Poster Paper", and "Organized (Invited) Session/Mini-symposium Paper".
Indexed in: IEEE Xplore, EI compendex, and SCOPUS

Plenary Speakers:
- Frank Doyle (Harvard Univ., USA)
- Jun-Ichi Imura (Tokyo Institute of Technology, Japan)
- Eduardo F. Camacho (Univ. of Seville, Spain)
- Tianyou Chai (Northeastern Univ., China)
- Dawn Tilbury (Univ. of Michigan, USA)

ICCAS 2019 will be held on October 15 18, 2019 at ICC Jeju in Jeju, Korea. Jeju is a very beautiful and relaxing island, and selected as the World Natural Heritage. The aim of ICCAS 2019 is to bring together professors, researchers, engineers and students worldwide to present their recent works and discuss the state-of-the-art technologies related to control, automation, robotics and systems.

General Chair: Chung Choo Chung (Hanyang Univ., Korea)
General Co-Chair: Jay H. Lee (KAIST, Korea)
Program Chair: Dong Eui Chang (KAIST, Korea)
Organized by Institute of Control, Robotics and Systems (ICROS)

6 Positions

6.1. PhD: GIPSA-Lab, Grenoble, France
Contributed by: Hassen Fourati, hassen.fourati@gipsa-lab.fr

Open PhD position at GIPSA-Lab, Grenoble, France on "Towards attitude, velocity and position estimation with gyro-free inertial and magnetic sensors array."
Advisors: Hassen Fourati and Christophe Prieur
Email : Hassen.Fourati@gipsa-lab.fr and Christophe.Prieur@gipsa-lab.fr
Profile: The candidate should have a solid background in control theory (observers, nonlinear dynamics) with application in navigation.
Dates: Beginning: October 2019. Duration: 3 years.

How to apply: Applications should be declared as soon as possible. The position may be closed as soon as a competent candidate has applied. Please include the CV, marks and a list of (at least) two references to one of the advisors.

This work will be conducted in collaboration between an academic lab (Gipsa-Lab) and the SYSNAV company, under the supervision of Hassen Fourati and Christophe Prieur for the preparation of the PhD of the University Grenoble Alpes.

6.2. PhD: CEA Grenoble, France
Contributed by: Roland Hildebrand, roland.hildebrand@univ-grenoble-alpes.fr

PhD Position at LETI Optronics Department, CEA Grenoble, France, in parameter identification
Project title: Improvement of performance in X and gamma-ray imaging by identification of semiconducting detector parameters
Start date: October 1st, 2019
Duration: 3 years
Advisor: Roland Hildebrand

Our laboratory designs X and gamma-ray imaging systems for medical imaging or luggage control. We use CdTe or CdZnTe-based detectors that are sensitive to five physical parameters of the interaction: deposited energy E, interaction time T and the 3-dimensional position XYZ. These parameters are estimated by real-time analysis of anode electronics signals.

These detectors have been significantly improved in recent years but some limits remain, especially those due to the non-uniformity of the response due to physical properties of the material. The goal of this Ph.D. internship is to overcome these limits by a detailed modelling and characterization of the actual detector response. The identification of internal physical parameters of the detector would allow to optimize estimation of interaction location, time and energy.

The applicant should have a background in mathematics, statistics or physics and a high affinity for multi-disciplinary research. How to apply: Applications should include a motivation letter, a detailed CV, and a

list of (at least) two references to the advisor.

6.3. PhD: Kiel University and Universität Bremen/Jacobs University, Germany
Contributed by: Thomas Meurer, tm@tf.uni-kiel.de

PhD Positions: GEOMAR/Kiel University and AWI/Universität Bremen/Jacobs University in for Data Scientists in Marine Sciences

The Helmholtz School for Marine Data Science (MarDATA) is recruiting candidates for doctoral studies (PhD) at Germany's leading institutes for marine research, GEOMAR and AWI, together with their partner universities in Kiel and Bremen. We are looking for excellent graduates holding master degrees in computer science ("Informatik" in German), software architecture, data engineering, data analytics, advanced statistics, machine learning, numerical and applied mathematics, bioinformatics or electrical engineering/technical cybernetics. More information can be found at https://www.mardata.de (Application deadline 15 May 2019).

MarDATA, a graduate school financed by the Helmholtz Association, will define and educate a new type of "marine data scientists" by introducing and embedding researchers from data science into ocean sciences – from supercomputing and modelling, (bio)informatics, robotics, to statistics and big data methodologies. Researchers from the German leading institutes for marine research, the GEOMAR Helmholtz Centre for Ocean Research Kiel and the Alfred-Wegener-Institute (AWI) Helmholtz Centre for Polar and Marine Research, will jointly educate and supervise doctoral candidates together with information & data science specialists from their partner universities in Kiel (Kiel University) and Bremen (Universität Bremen and Jacobs University). The broad education in joint block courses, international summer schools and colloquia will go beyond a single discipline towards genuine scientific insight into and a more systematic treatment of marine data.

6.4. PhD: GEOMAR Kiel University, Germany
Contributed by: Thomas Meurer, tm@tf.uni-kiel.de

PhD Position at GEOMAR/Kiel University on "Navigation and Real-time sensor fusion for automated observation and data assimilation" within the Helmholtz School for Marine Data Science (MarDATA).

Aim: This PhD project aims at identifying, analysing and developing solutions to improve marine data acquisition by advancing AUV navigation, localization and guidance capabilities using sensor fusion and combined data-driven / model-based techniques. This will include sophisticated state and parameter estimation methods that are based on the feedback injection of AUV sensor data into the process model. Closed-loop AUV control integrating the estimated states will be developed towards the achievement of situational and environmental awareness and robustness w.r.t. disturbances or sensor and actuator faults. Environmental awareness that will guide adaptive navigation depends on understanding and predicting sensor data in space and time. Chemical, physical and optical sensors need to be analysed and interpreted applying data science methods as machine learning and statistics running in concert with the vehicle steering components.

The approaches will address aspects of cooperation by investigating swarm concepts using, e.g., a multitude of rather cost efficient devices that build a mobile sensor network. The concepts and technologies will be directed towards automated, accurate and robust observation and data collection capabilities to support marine data analytics and data mining.

Objectives: (1) Develop model-based and data-driven navigation, localization and guidance solutions for AUVs allowing for situational adaptive planning, (2) Extending the concepts to distributed devices with cooperation capabilities (multi-agent system / AUV swarm), (3) Real time analysis of different sensor data utilizing ML-methods for adapting the initial navigation plan, (4) Implementing 'real-autonomy' in AUVs and similar platforms.

Competences: The successful candidate should have a very solid background in model-based and data-driven automatic control and estimation techniques. He/she should further have a good understanding of data processing methods and machine learning techniques. Practical experience with AUV or underwater ROV operation and real-time programming are appreciated.

Further information:https://bit.ly/2DFKeVS

Application: For the application process please consult
https://www.mardata.de/apply/

Deadline: May 15th, 2019

6.5. PhD: University of Luxembourg, Luxembourg
Contributed by: Jorge Goncalves, jorge.goncalves@uni.lu

Fully funded PhD position in the Systems Control group at the University of Luxembourg.
Supervisor: Prof. Jorge Goncalves.
Funding: full funding available for up to 4 years, with a highly competitive salary.

Description:
The Systems Control Group at the University of Luxembourg focuses on modelling and analysing large-scale time-series data to learn the mechanisms behind complex systems. The PhD student will be a member of the highly interdisciplinary research centre, integrating experimental biological and system biology approaches to develop the foundation of future predictive, preventive and personalised medicine.
Biological systems are dynamical in nature as molecular species evolve in time in response to internal or external regulations, perturbations or just random fluctuations. The group is interested in understanding the complexity inherent to biological systems from a dynamical perspective, typically captured with differential equations, stochastic processes or AI (neural networks). Theoretically, we develop mathematical tools to efficiently collect, process and analyse biological data, aiming to make reliable predictions. Applied, we closely collaborate with experimental biologists and physicians to generate mathematical models, which offer new biological insights that can subsequently be tested experimentally, hence closing the loop between experiments and modelling.

- There is flexibility in the choice of projects, which can be more theoretical or applied.
- There is a possibility for the students to spend some time at Caltech, MIT or the University of Cambridge to collaborate with researchers at those institutions.
- My group has no wet lab and the student is not expected to run any laboratory experiments. Datasets come from biological collaborators. However, if desired, it should be possible to perform experiments at collaborator's laboratories.

Candidate profile
• Hold (or about to obtain) a Master degree in Mathematics, Theoretical Physics, Engineering, Control Systems, Theoretical Machine Learning or related fields.
• Strong mathematical background is a requirement. Biological knowledge is not essential.
• We will only consider students that graduated in their top 20% undergraduate and Master's class rank (equivalent to a UK first class degree).
• Excellent working knowledge of English.

Applications (to be sent online at http://emea3.mrted.ly/25dsp) should contain the following documents:
• A detailed Curriculum vitae that includes your class rank.
• A motivation letter, including a brief description of past research experience and future interests.
• Copies of diploma and transcripts of Bachelor/Master.
• Please ask at least two references to email their confidential letters directly to Prof. Jorge Goncalves, jorge.goncalves@uni.lu, within two weeks of submitting the application.

Only complete applications will be considered.
Review of applicants will begin immediately and will continue until the position is filled. Informal inquires: Prof. Jorge Goncalves, jorge.goncalves@uni.lu

The University of Luxembourg is an equal opportunity employer. All applications will be treated in the strictest confidence.

6.6. PhD: The University of Sheffield, UK
Contributed by: George Konstantopoulos, g.konstantopoulos@sheffield.ac.uk

Fully Funded PhD (UK/EU applicants only) on 'Nonlinear control and optimisation in micro-grids' at The University of Sheffield, Department of Automatic Control and Systems Engineering, starting in September 2019. The studentship offers a 3.5-year funded* PhD scholarship open to all UK/EU applicants.

Project Description:

The project deals with the development of novel nonlinear hierarchical control strategies for a local community type micro-grid to enable maximum utilisation of Distributed Energy Resources (DERs), such as renewables, storage and active loads. The main aim is to analyse the accurate nonlinear dynamic model of a micro-grid consisting of both producers and consumers in a local neighbourhood and design primary and supervisory control techniques to enhance system stability and resilience. Research work will focus on the design of decentralised and distributed control methods to optimise power flow and enable energy trading

between the users in order to maximise the financial and environmental benefits of the entire community. The project combines fundamental research in terms of control design, stability analysis and optimisation, and applied research in micro-grids that includes the verification and validation of the developed techniques through hardware-in-the-loop and experimental implementation, using the state-of-the-art laboratory facilities of the University of Sheffield.

Candidate Requirements:

Prospective applicants must have a minimum undergraduate Honours degree (UK 2:1 or better) or MSc (Merit or Distinction) in Control Engineering, Electrical Engineering, Mathematics or other related disciplines from a reputable institution. Candidates with a background in one or more of the following topics are particularly encouraged to apply: nonlinear systems theory, control and optimisation, power system analysis, knowledge of DSP programming. EU applicants must submit IELTS results (with an overall score 6.5 or higher, with a minimum of 6 in each component) or TOEFL score of 88+ within their application. More details on entry requirements can be found at:
https://www.sheffield.ac.uk/acse/research-degrees/applyphd
Applying:

To apply, please submit a PhD application using the University's online application system via the Postgraduate online application form link at the following:
http://www.sheffield.ac.uk/postgraduate/research/apply/applying

Within the application, please state Dr George Konstantopoulos and Dr Paul Trodden as your preferred supervisors and state the project title as 'Nonlinear control and optimisation in micro-grids'. Should you have any queries about the position, please contact either Dr George Konstantopoulos on g.konstantopoulos@sheffield.ac.uk or Dr Paul Trodden on p.trodden@sheffield.ac.uk.

Deadline for applications: 9am, Friday 28th June 2019.

Shortlisted Candidates will be required to attend an interview. The interview will consist of i) a short test of knowledge in systems and control theory, ii) discussion with the supervisory team. Interviews will take place in the week commencing on 8th July 2019. This studentship is fully funded for 3.5 years for UK/EU nationals only, covering full tuition fees and offering a tax-free stipend at the EPSRC rate (£15,009 for 2019/20).

6.7. PhD: Université Grenoble Alpes, France
Contributed by: Antoneta Luliana Bratcu, antoneta.bratcu@gipsa-lab.fr

PhD position in Modelling And Control Of Modular Multilevel Power Electronic Converters (MMCS)
Contact: Antoneta Iuliana BRATCU: antoneta.bratcu@gipsa-lab.grenoble-inp.fr, +33 476 826 384
Deadline: May 20th 2019

Please provide CV, relevant transcripts, letter of motivation, record of publications (if any). This link includes related to this position:

http://www.gipsa-lab.fr/offres/offres_de_theses.php

Modular Multilevel Converters (MMC) represent a shift in the power electronics converters technology, that consists in multiplying number of layers containing switching devices, which are thus required to operate at a switching frequency being lower than in previous converter topologies. Lower losses and higher operating efficiency are thus obtained. Multilevel topology also ensures improved harmonic performance at a given switching frequency. MMCs are, for example, a promising solution to high-voltage direct-current (HVDC) transmission systems over long distances, to facilitate grid integration of renewable energy systems.

The objective of this thesis is to propose pertinent solutions to control problems of MMCs operation. Instead of a large DC-side capacitor, MMCs have many lower-capacity capacitors, behaving like a sort of spatially distributed energy storing capacity.

Applicant Profile:

A person having a strong background in linear and nonlinear control, with interest and skills in technology and applications of power electronic converters is sought for. Proficiency in MATLAB®/Simulink® is indispensable. Capacity in mathematical modelling for control purpose is necessary. Proven high academic performance (excellent transcripts) is expected. A record of publications in high-level journals and/or conferences is a plus (but not mandatory).

Financing:

Excellence of application is a criterion to obtain 3-year financing (approx. 1770€ gross per month) of the French Ministry of Education through Doctoral School EEATS (Ecole Doctorale Electronique, Electrotechnique, Automatique et Traitement du Signal – Electronics, Electrotechnics, Control Systems and Signal Processing) – one of the 14 doctoral schools of the College of doctoral schools of Université Grenoble Alpes, located in Grenoble area, France. Thesis will begin on October 1st 2019.

6.8. PhD: Halmstad University, Sweden
Contributed by: Maben Rabi, maben.rabi@hh.se

A PhD student position is available on Automated driving in challenging urban scenarios. This position involves interdisciplinary research spanning both the field of Wireless Communication Networks, and the field of Motion Control of Autonomous vehicles. The scientific questions shall revolve around how to steer autonomous vehicles at road intersections, using sensor data as well as the data packets exchanged with other vehicles and the traffic infrastructure.

The work shall require versatility as it involves: (i) Mathematical analysis, (ii) Practical design, (iii) Software implementation, (iv) Interfacing with the Testing team, and (v) Interfacing with the Sensing team. One of the main challenges is to keep system testability in mind and jointly design: (A) MAC and Link layer protocols in the vehicular communication networks, and (B) Motion control algorithms in the autonomous vehicles.

Description:

The employment as doctoral student involves individual research studies (80%) and additional institutional duties or teaching within the subject field (20%). The Ph.D. student will be carrying out research in a highly international research environment at the department of Intelligent Systems and Digital Design (ISDD), School of Information Technology, Halmstad University, Sweden, see
http://www.hh.se/en-US/akademinforinformationsteknologi.1240.html.
The research project is funded by the Knowledge foundation of Sweden and will be carried out in collaboration with the project's industrial partners, primarily Scania, see http://www.scania.com, AstaZero, see https://www.astazero.com, and H&E Solutions https://evam.life/ The other partners include Quviq, KPIT, TerraNet, and Gutec.
Qualifications:

The suitable candidate has a Masters degree in on e of: Applied Mathematics, Communication Engineering, Computer Science, Computer Engineering, Electrical Engineering, Electronics Engineering, Robotics, Mechatronics or closely related fields. Students expecting to finalize their degree during spring 2019 are also welcome to apply. An ideal candidate would have expertise in some, and interest in all of the following fields: Wireless networking protocols, Vehicular technology, Control theory, Embedded systems, and Programming.

To apply, use the link:
https://hh.mynetworkglobal.com/se/what:job/jobID:258005/iframeEmbedded:0/where:4

6.9. PhD: Laboratory of Signals and Systems, Paris-Saclay, France
Contributed by: Paolo Frasca, paolo.frasca@gipsa-lab.fr

PhD position available at L2S, Paris-Saclay, France in collaboration with GIPSA-lab, Grenoble, France.
Title: A hybrid systems approach to open multi-agent dynamics
Supervisors: Elena Panteley, Paolo Frasca
E-mails: elena.panteley@l2s.centralesupelec.fr, paolo.frasca@gipsa-lab.fr

Key dates: For full consideration, contact the potential supervisors no later than May 15, 2019.
Starting date: Flexible, the position is available immediately.

Context: This work will be carried out in collaboration between L2S (Paris) and GIPSA-lab (Grenoble), France. Both L2S and GIPSA are leading research institutions in the broad field of signals and systems. The student will be enrolled in the ED STIC doctoral school of Paris-Saclay University with main attachment to the Laboratory of Signals and Systems. She/he will be mainly be based at L2S but shall also spend a significant portion of time at GIPSA-lab. The position is funded by the ANR 2018 project HANDY "Hybrid And Networked Dynamical sYstems" supported by the French national scientific foundation (ANR).

Candidate profile: The candidate will have a MS degree in Applied Mathematics, Control Systems, Electrical Engineering, or related disciplines.

Topic description: The topic of the thesis combines mathematical systems theory, and in particular the theory of Hybrid Systems, with networks and multi-agent systems. Control-theoretic methods for networks often assume the network structure to be static. While on a short time scale this assumption can be made, on a longer time scale the network is bound to change due to the addition or removal of both nodes and arcs. In many applications, including online social networks and modern power networks, the set of the nodes can change with time, as new members can join the network and some others can leave it. We will explore several possible approaches to analyze such networks in the framework of hybrid systems, by modeling the arrival/departure of a node as a jump in the state of the overall system and a change of the connectivity matrix of the system.

More information: https://bit.ly/2UxsDFc

6.10. PhD: University of Limerick, Ireland
Contributed by: Martin Hayes, martin.j.hayes@ul.ie

A number of (at least three) fully funded PhD studentships are available within the Centre for Robotics and Intelligent Systems (CRIS, www.cris.ul.ie) at the University of Limerick, Ireland. The programme of Research is sponsored by Confirm, The Science Foundation Ireland Institute for Smart Manufacturing. Brief descriptions of some of the open projects that require students are listed below. This is not an exhaustive list - please feel free to look at the CRIS website for details of all the positions that are available and do please email martin.j.hayes@ul.ie if you have informal queries about any of the positions that are available.

Project 1: Deep learning for Visual cognition.
This project will explore how Digital twins can support precision manufacturing at geometries where direct human in the loop is not feasible. Object/feature Identification, decision making and robust actuator control are some of the issues that will be addressed by this work.

Project2: Natural Language Processing for Smart Manufacturing.
This project will investigate how voice and gesture can be parsed to support precision control in smart manufacturing, robot trajectory planning and Digital twin applications. This work will assess how Key Performance indicators can be fused from a variety of sensor/data sources to facilitate well defined robust control objectives.

Project 3: Automated assessment of learning and engagement in blended education environments.
This project will look at how data provided by students in blended learning environments can be parsed using NLP technology. The objective is to help moderators distinguish between learning and engagement in group sandbox type learning activities. The successful candidate will work with the University's teaching and Learning department to develop best practice regarding how Machine Learning can be used to help the online or blended assessment process.

6.11. PhD: Tallinn University of Technology, Estonia
Contributed by: Arvo Kaldmäe, arvo@cc.ioc.ee

A PhD position is available at Department of Software Science, Tallinn University of Technology, Estonia. The research topic is "Event-Based Control Strategies Based on Differential Flatness." More precise topic will be agreed on between the supervisor (Arvo Kaldmäe) and the candidate. The successful candidate must have a master degree and good skills in control theory and/or applied mathematics. The candidate must have excellent English language skills and he/she should be motivated to do theoretical research, including prove theorems.

If successful, the university will sign an employment contract with the candidate, which guarantees competitive salary for 4 years of studies. More information can be seen and applications should be submitted from https://bit.ly/2PEAznc

In case of questions, contact Arvo Kaldmäe by email at arvo@cc.ioc.ee

6.12. PhD: University of Stuttgart, Germany
Contributed by: Elisabeth Schaettgen, elisabeth.schaettgen@mathematik.uni-stuttgart.de

PhD Position in Mathematical Systems Theory, University of Stuttgart
We offer the possibility to pursue a PhD degree in a project embedded in the project network 4 of the Cluster of Excellence Data-Integrated Simulation Science (SimTech) at the University of Stuttgart.

Project title: Optimization-based design of data-integrated controllers

Short description: Integrating machine learning and data in the design of controllers is highly promising for mastering future complex technological systems. The goal of this project is to develop novel control synthesis methodologies that permit to exploit the benefit of data and learning on top of classical control and model structures. A particular emphasis is put on the largely open questions of how to provide rigorous stability and robustness guarantees for the overall learning-control system.

Conditions of employment: The current funding period is for 3 years. The PhD student will participate in the training and research activities of the SimTech Graduate School. As an employee of the University of Stuttgart, the PhD student will receive a competitive salary including all social benefits an employment in Germany offers.

If you are interested, please send
- a complete resume
- a letter of motivation
- the names of two professional referees
to
Ms. Elisabeth Schaettgen
University of Stuttgart
Mathematical Systems Theory
Pfaffenwaldring 5A
70569 Stuttgart
elisabeth.schaettgen@mathematik.uni-stuttgart.de

https://www.imng.uni-stuttgart.de/mst/index.html
https://www.simtech.uni-stuttgart.de/en/

6.13. PhD: École Nationale Supérieure de Techniques Avancées de Bretagne, France
Contributed by: Benoit Clement, benoit.clement@ensta-bretagne.fr

PhD Position at Lab-STICC & ENSTA Bretagne, Brest, France in Control Systems
Project title: Adaptive Control of underwater robots with Machine Learning

The general context of this thesis is the auto tuning of structured controllers based on machine learning algorithms. The objective is to ensure robustness and good performances for the Guidance , Navigation and Control algorithms for underwater vehicles. The focus of the project is on the controller design and on the Machine Learning with a few data as the underwater environment is not well known. This PhD is a cooperation between Lab-STICC UMR CNRS 6285 in France and Flinders University in Australia.

For more information on this position, see https://bit.ly/2USmWSf

Advisors: Benoit Clement, Estelle Chauveau, Karl Sammut
Starting date: Sept./Oct 2019, for 3 years.
Application deadline: until filled.
Qualifications: Applicants must hold, or be about to complete, a Master's degree (or equivalent) in Systems and Control, applied mathematics or a related discipline. Fluency in English is strongly required. How to apply: Interested applicants should contact benoit.clement@ensta-bretagne.fr . Applications must include a detailed resume, a short one-page CV, academic transcripts, and a list of (at least) two academic references.

6.14. PhD/Postdoc: Lund University, Sweden
Contributed by: Anders Rantzer, rantzer@control.lth.se

The department of Automatic Control at Lund University is announcing PhD and postdoc positions funded by an Advanced Grant from the European Research Council. The project is devoted to theory for large scale systems, adaptive control and applications in district heating networks. See
http://www.lth.se/english/working-at-lth/

6.15. PhD/Postdoc: University of California, Riverside, USA
Contributed by: Fabio Pasqualetti, fabiopas@engr.ucr.edu

Multiple PhD and Postdoc positions are available to work in the general areas of network analysis and control in the presence of adversaries, network and system theory for neuroscience, and cyber-physical security for power distribution systems. Successful candidates will work under the supervision of Prof. Fabio Pasqualetti. Interested candidates should send their CV and a brief statement of purpose to fabiopas@engr.ucr.edu.

6.16. PhD/Postdoc: University of Seville, Spain
Contributed by: Eduardo F. Camacho, efcamacho@us.es

The Automatic Control Department of the University of Seville has three PhD open positions in the following topics:

PhD position 1: Design, Modelling and simulation fleet of mobile sensors
PhD position 2: Dynamic models of solar plants with spatial irradiance estimation.
PhD position 3: Coalitional MPC algorithms for large scale processes

Primary supervisor: Eduardo F. Camacho.
Duration: Up to three years for PhDs starting September 2019
Positions funded by the European Research Council under the Advanced Research Grant OCONTSOLAR.

Context and Objectives

Technology developments in many fields advance much faster than the methodologies needed to apply them in industry. This is the case of many devices used in our daily life such as sensors installed in cell phones or drones. These devices can supply a huge amount of information over extended geographical areas that can be used to extend the capability of control systems to heights unforeseen in the past. OCONTSOLAR aims to develop new control methods using mobile sensors mounted on drones and unmanned ground vehicles (UGV) as an integral part of the control systems. Sensors mounted on vehicles have been used for surveillance and for gathering information, however these mobile sensors have not been used so far as an integral part of control systems. Solar power plants will be used as a case study, with the aim of optimizing their operation using spatial irradiance estimations and predictions. Many results will be applicable to other systems such as traffic control in highways and cities, energy management in buildings, micro-grids, agriculture (irrigation and plague control) and flood control.
Work description

PhD position 1: designing and modelling a fleet of mobile sensors mounted on drones and UGVs and their corresponding docking stations. Different granularity models (ranging from simple models for planning the missions to more precise models for simulating the mobile sensors) of the mobile UGVs, drones and sensors will be developed. The design will be based on proven off-the-shelf products able to provide a technically sound solution to produce a spatially distributed estimation of the irradiance.

PhD position 2: developing dynamical models of solar plants with a spatially distributed solar irradiance. The modelling stage will require the use of complexity reduction techniques in order to get models that can be used both for simulation and control. A library of elements will be built, and these elements will be validated in two reference plants.

PhD/PostDoc position 3: developing cooperative MPC algorithms for large scale systems formed by dynamically coupled units with changing topologies. Coalitional control ideas will be considered for this purpose. In order to form the different coalitions of cooperating controllers, different approaches will be used.

Background of the candidate

PhD positions: The candidate must hold a Master in engineering or computer science with a strong background on control. A prior experience in the technical areas related to the applied PhD position is desired. Programming skills and a good level of English are also needed.

Salary and others:

- PhD positions 20 keuros. It is a 1 year position that can be extended to 3 years in total.
- Application closing date is 30th of June 2019 or until finding a suitable candidate. Expected start date is September 2019 or soon thereafter.

Applications: please submit the following (in PDF format) to Prof. Eduardo F. Camacho (efcamacho@us.es, cc: svallejo@us.es). Indicate in the subject "Application PhD #" .

a) CV, b) a one page summary of your research interests and motivation, c) a copy of your most recent transcript (PhDs), d) contact information for up to three references to assess your research potential, and e) copies of your most relevant publications

6.17. Postdoc: TESL@UVM, USA
Contributed by: Mads Almassalkhi, malmassa@uvm.edu

ARPA-E post-doctoral position at the University of Vermont (UVM)

The Energy and Systems Laboratory at the University of Vermont (TESL@UVM) invites applications for a postdoctoral researcher in power, optimization, dynamical systems and control of distributed energy devices (DERs) for the packetized energy management project sponsored by the Department of Energy's ARPA-E and involving Michigan Technological University (MTU) and Packetized Energy, an energy startup company.

This is a year-to-year appointment, renewable annually for up to two years subjected to satisfactory performance, availability of resources, and the needs of the project. Funding is available through May 2021, though the position may be extended given additional external funding.

Desired qualifications include a demonstrated track record with some of the following topics:
• DER coordination, aggregation, modeling, and control (e.g., Markov chain, mean-field);
• online learning/estimation theories as it applies to power systems;
• optimization of uncertain/energy-constrained resources for power system operations & markets
• experiences validating analytical research results with large-scale realistic power systems simulations (e.g., Matlab, Julia, C++) and/or practical hardware validation (e.g., OPAL-RT, Arduino, or field demonstration) are desired.

Some of the project's specific tasks include:
• Adapt packetized energy management to a fast time-scale for ancillary services markets and frequency regulation,
• Develop appropriate control and estimation methodology for a virtual battery model of the packetized energy management scheme.
• Quantify and characterize time-varying parameters of the VB

- Quantify and characterize the uncertainty associated with the VB model parameters
- Validation of a virtual battery and embedding it into operations and/or markets.
- Lead publications and conference presentations at top tier outlets
- Assist with DOE reporting and project management, including supporting commercialization and validation activities

A competitive salary and benefits are included plus living in beautiful Burlington, Vermont.

In addition, the candidate will be working with graduate students in a mentoring role. Entrepreneurial/tech-transfer/start-up opportunities are also available based on candidate's capabilities and interests. The candidate will enjoy a dynamic and collaborative working environment. Interested applicants should send their curriculum vitae (CV), a 1-paragraph statement of why you believe your background is a good fit for the position, a 1-paragraph summary of your PhD dissertation, and contact information of three professional references to Profs. Mads Almassalkhi (malmassa@uvm.edu) and Luis Duffaut Espinosa (lduffaut@uvm.edu).

6.18. Postdoc: University of Kansas, USA
Contributed by: Huazhen Fang, fang@ku.edu

Applications are cordially invited for a postdoctoral research fellow position in the Information & Smart Systems Laboratory at the University of Kansas. The position can start between May and June 2019, with the exact beginning date negotiable. The research project will be concerned with estimation theory and machine learning. A background in the broad areas of estimation, machine learning, deep learning, optimization, signal processing, mathematics, and control will be desirable.

A successful candidate should have the following qualifications: a recent PhD degree with thesis research on machine learning, data science, estimation theory, control systems, mathematics or related subjects, solid mathematical skills, excellent programming (Matlab, TensorFlow, or Python) skills, excellent oral and written communication skills, and strong motivation to perform outstanding research.

The appointment is for one year, with possible extension contingent on availability of funds and research performance. The salary will be in accordance with the postdoctoral salary scale of the University of Kansas. Interested candidates can feel free to contact Dr. Huazhen Fang (fang@ku.edu) for further information and are encouraged to send: a curriculum vitae detailing research achievements, a list of three referees, and up to three research documents (e.g., thesis, journal articles, and conference papers).

6.19. Postdoc: GIPSA-Lab, Grenoble, France
Contributed by: Hassen Fourati, hassen.fourati@gipsa-lab.fr

Open Post-doc position at GIPSA-Lab, Grenoble, France
Title: Capture of postures and human activities by inertial modules for fine analysis of multimodal displacement.

Description:

Mobility is currently evolving in urban scenarios and multimodality is now the key to more efficient transport. The CAPTIMOVE project falls within this framework and aims to develop a solution adapted to intelligent urban mobility aimed at better detection and classification of traditional human activities from its main residence to its destination (for example, place of work, place of entertainment, etc.). We seek to reliably identify the nature of the modes of transportation used during the displacement (eg, walking, cycling, public transit, car, etc.) as well as transition transitions from one mode to another. To meet this objective, we will use inertial and attitude modules, embedded in most inertial units, connected watches and smartphones. These technological tools constitute a truly innovative and promising instrumentation both for the non-invasive automatic capture of information in situ, over extended periods, as well as for the objective, accurate and reliable analysis of a person's activities during his or her displacement.

In terms of research, we will use techniques from "machine learning" and state estimation to address this issue. An in-depth study must be conducted to determine the type of measurements to be used in the databases (in "Machine Learning" especially), the number of sensors to be used and their most appropriate locations on the body. Questions about the quality of the data to be provided to the algorithms and how to detect and discard the erroneous ones from our calculation process will also be addressed in this project. This technological brick finds its future major interest later in the development of a multimodal intelligent navigation system for indoor and outdoor environments.

Postdoctoral missions:

To meet the CAPTIMOVE project's major objectives, the postdoctoral fellow will carry out the following tasks:

Task 1: Propose and test a reliable classification method of human activities and postures observed during a multimodal urban journey (for example, sitting on a chair, walking, standing, pedaling, imitating the driving of a car steering wheel, etc.), carried out by volunteer participants in a controlled environment.

Task 2: Analyze the type of database, the number of modules and the location on the body, and discuss the effect of this on classification performance. Detect and discard data that is wrong in our calculation process.

Task 3: Apply the developed approaches to real urban displacement scenarios (by example, walking, cycling, public transit, car, etc.)

6.20. Postdoc: University of Minnesota, USA
Contributed by: Wyatt Dopke, Doep0013@umn.edu

Pre-clinical Research in Brain Connectivity and Feedback Control to Optimize DBS (Job Code 328718)

The Neuromodulation Research Center (NMRC) at the University of Minnesota, directed by Dr. Jerrold Vitek, seeks postdoctoral researchers to join its interdisciplinary team. Interested candidates will join dedicated, collaborative researchers working to advance neuromodulation therapies for those living with neurological disorders. In the heart of Minnesota's Medical Alley, our translational research brings together experts from neurology, neurosurgery, neuroscience, engineering, radiology, and beyond. For more information, visit nmrc.umn.edu.

The postdoctoral researcher working in this placement will focus on studying how Parkinson's disease alters effective connectivity in brain circuits responsible for movement control and investigating feedback control techniques aimed to restore function in these circuits. The postdoctoral researcher will have the opportunity to apply engineering methods to the development and testing of next-generation DBS therapies.

Required Qualifications: PhD in control engineering or related science/engineering field with a background in
- Feedback control systems
- Signal processing and data analysis
- System identification and mathematical modeling of dynamical systems
- Real-time systems
Desired Qualifications:
- Systems neuroscience
- Kinematic analysis
- Development of software tools using MATLAB/Simulink

If you are interested in this position or would like to know more about it, please contact Dr. David Escobar at descobar@umn.edu. Please include an updated CV with your interest. All formal applications must be made through the University of Minnesota job portal at https://humanresources.umn.edu/content/find-job using the job code indicated above.

6.21. Postdoc: University of Minnesota, USA
Contributed by: Wyatt Doepke, doep0013@umn.edu

Pre-clinical Research on Neuronal Population Dynamics (Job Code 328718)

The Neuromodulation Research Center (NMRC) at the University of Minnesota, directed by Dr. Jerrold Vitek, seeks postdoctoral researchers to join its interdisciplinary team. Interested candidates will join dedicated, collaborative researchers working to advance neuromodulation therapies for those living with neurological disorders. In the heart of Minnesota's Medical Alley, our translational research brings together experts from neurology, neurosurgery, neuroscience, engineering, radiology, and beyond. For more information, visit nmrc.umn.edu.

Successful candidates for these positions will apply control engineering and dynamical systems analysis techniques to the characterization of neuronal population dynamics in Parkinson's disease and the development of feedback control techniques for subject-specific deep brain stimulation (DBS) therapies.

The postdoctoral researcher working in this placement will study the collective dynamics of neuronal populations in Parkinson's disease and the effect of DBS therapy on these dynamics. The postdoctoral researcher will have the opportunity to access and analyze large sets of neural data available in the NMRC.

Required Qualifications: PhD in engineering, applied mathematics, neuroscience or a related field with a background in

- Signal processing and data analysis
- System identification, inverse problems, and mathematical modeling of dynamical systems
- Graduate-level linear algebra and differential equations

Desired Qualifications:
- Systems neuroscience
- Brain machine interfaces
- Kinematic analysis
- Development of software tools using MATLAB/Simulink

If you are interested in this position or would like to know more it, please contact Dr. David Escobar at descobar@umn.edu. Please include an updated CV along with your interest. All formal applications must be made through the University of Minnesota job portal at https://humanresources.umn.edu/content/find-job using the job code indicated above.

6.22. Postdoc: University of Minnesota, USA
Contributed by: Wyatt Doepke, doep0013@umn.edu

Pre-clinical Research in Brain Connectivity and Feedback Control to Optimize DBS (Job Code 328718)

The Neuromodulation Research Center (NMRC)at the University of Minnesota, directed by Dr. Jerrold Vitek, seeks postdoctoral researchers to join its interdisciplinary team. Interested candidates will join dedicated, collaborative researchers working to advance neuromodulation therapies for those living with neurological disorders. In the heart of Minnesota's Medical Alley, our translational research brings together experts from neurology, neurosurgery, neuroscience, engineering, radiology, and beyond. For more information, visit nmrc.umn.edu.

Successful candidates for these positions will apply control engineering and dynamical systems analysis techniques to the characterization of neuronal population dynamics in Parkinson's disease and the development of feedback control techniques for subject-specific deep brain stimulation (DBS) therapies.

The postdoctoral researcher working in this placement will focus on studying how Parkinson's disease alters effective connectivity in brain circuits responsible for movement control and investigating feedback control techniques aimed to restore function in these circuits. The postdoctoral researcher will have the opportunity to apply engineering methods to the development and testing of next-generation DBS therapies.

Required Qualifications: PhD in control engineering or related science/engineering field with a background in
- Feedback control systems
- Signal processing and data analysis
- System identification and mathematical modeling of dynamical systems
- Real-time systems

Desired Qualifications:
- Systems neuroscience

- Kinematic analysis
- Development of software tools using MATLAB/Simulink

If you are interested in this position or would like to know more it, please contact Dr. David Escobar at descobar@umn.edu. Please include an updated CV along with your interest. All formal applications must be made through the University of Minnesota job portal at https://humanresources.umn.edu/content/find-job using the job code indicated above.

6.23. Postdoc: TU Delft, The Netherlands
Contributed by: Vasso Reppa, v.reppa@tudelft.nl

Post-doc position in Maritime and Transport Technology Department at TU Delft, Netherlands.
Learning for Self-Healing of Multi-Machine Systems

The goal of this project is to design novel methods to ensure the normal operation of multi-machine systems for transport and logistics, in the presence of multiple defective components and high system uncertainty. The post-doctoral researcher will conduct fundamental theoretical and algorithmic research on multi-agent reinforcement learning for fault-tolerant control with applications to maritime transport systems. The researcher will join a multi-disciplinary team led by Dr. Vasso Reppa, Assistant Professor with the Department of Maritime and Transport Technology, and by Dr. Wei Pan, Assistant Professor, with the Department of Cognitive Robotics.

The post-doctoral researcher is expected to bridge the expertise of the two departments by integrating cognitive fault tolerant control and decentralized multi-agent reinforcement learning techniques for the self-healability of multi-machine systems in the maritime transport domain (e.g. autonomous ships, automated container terminals).

- Wen, Y., Yang, Y., Luo, R., Wang, J., & Pan, W. (2019). Probabilistic Recursive Reasoning for Multi-Agent Reinforcement Learning. International Conference on Learning Representation (ICLR).
- Reppa, V., Polycarpou, M. M., & Panayiotou, C. G. (2015). Decentralized isolation of multiple sensor faults in large-scale interconnected nonlinear systems. IEEE Transactions on Automatic Control
- Ferranti, L., Negenborn, R. R., Keviczky, T., & Alonso-Mora, J. (2018). Coordination of Multiple Vessels Via Distributed Nonlinear Model Predictive Control. In 2018 European Control Conference (ECC).

For applying, please follow the link below:
https://vacature.beta.tudelft.nl/vacaturesite/permalink/53268/?lang=en

6.24. Postdoc: Universidad Técnica Federico Santa María, Chile
Contributed by: Juan I. Yuz, juan.yuz@usm.cl

The Advanced Center for Electrical and Electronic Engineering (AC3E) is offering up to FOUR postdoctoral fellowships in the lines of research of the Center: Control and Automation, Renewable Energy and Power Conversion, Robotics, Biomedical Systems, Electrical Systems, and Data Analytics and Computational In-

telligence.

The AC3E is part of Universidad Técnica Federico Santa María - UTFSM - one of the most prestigious universities in Chile and Latin America. The Center was created in 2014 to group individual research efforts into multi- and inter-disciplinary teams and to focus research towards industry related problems to spark innovation. UTFSM is ranked #1 in Latin America in Electronic & Electrical Engineering and in Automation & Control, according to the ARWU Shanghai Ranking of Academic Subjects 2018. One of the postdoctoral fellows will be part of the Clinical Research Center for the Improved Prevention, Diagnosis, and Treatment of Vocal Hyperfunction (P50 grant of the National Institute of Health - NIH, USA) that AC3E is part of through Dr. Matías Zañartu and other researchers.

Required Documents
1. Cover letter explaining your interest in becoming part of AC3E.
2. Curriculum Vitae, including a list of publications.
3. Documentation providing evidence of the possession of a PhD or that the applicant is in the last stage of his/her doctoral studies.
4. Contact details of at least two referees, that may be contacted for a reference letter.

Important Information
• The postdoctoral fellowships are initially for a two-year period.
• Required documents should be provided in English in a single PDF file.
• AC3E is committed to gender diversity and we encourage women applicants to write confidently about their achievements.
• The positions are for working at AC3E, located at UTFSM main campus in Valparaiso, Chile.
• Selected candidates are expected to join AC3E no later than November 2019.
• Deadline for application submissions is 31st of May, 2019.
• Applications should be sent to ac3e@usm.cl with subject POSTDOC POSITIONS 2019-1
• Additional information can be found at www.ac3e.cl and at www.usm.cl
• Further enquiries can be sent to ac3e@usm.cl or to juan.yuz@usm.cl

6.25. Postdoc: Chalmers University of Technology, Sweden
Contributed by: Paolo Falcone, falcone@chalmers.se

We invite applications for one post-doctoral position in Networked Control for Intelligent Transportation Systems. At the Mechatronics Group of the Electrical Engineering Department, we are engaged in both fundamental and applied research related to intelligent transportation systems. Ongoing research projects in this field focus, among others, on the design and the experimental validation of control algorithms for connected autonomous vehicles.

The successful candidate will join a team of post-docs and Ph. D. students, engaged in neighboring research, and is expected to contribute to the design of control algorithms for systems, subject to state and input constraints, communicating through lossy channels with limited capacity. If possible and relevant, the achieved results will be demonstrated through experiments on full-scale vehicles and in collaboration with our industrial partners.

The research project is in collaboration with Ericsson and Zenuity and is strongly connected with ongoing research projects within the WASP (Walleberg Autonomous Systems Program). The working time of post-doctoral staff is mainly devoted to research. Undergraduate teaching duties, not exceeding 20% of the working time, may include supervision of MSc students. The appointment is a full-time employment (not a scholarship) for a period of not more than two years (1+1).

A PhD (or close to completion) in control theory, optimization and constrained optimal control or neighboring relevant field is required. Experience with automotive control applications will be preferred. Ability to initiate new research collaborations is essential. Good communication skills in oral and written English are required.

Please apply through the following link: https://bit.ly/2VFbj5O

6.26. Postdoc: Chalmers University of Technology, Sweden
Contributed by: Paolo Falcone, falcone@chalmers.se

We invite applications for one post-doctoral position in Machine learning of humans' behavior in traffic. At the Mechatronics Group of the Electrical Engineering Department, we are engaged in both fundamental and applied research related to intelligent transportation systems. Ongoing research projects in this field focus, among others, on the design and the experimental validation of control algorithms for connected autonomous vehicles.

The successful candidate will join a team of post-docs and Ph. D. students, engaged in neighboring research, and is expected to contribute to the design of learning and prediction algorithms for humans' behavior in traffic. If possible and relevant, the achieved results will be demonstrated through experiments on full-scale vehicles and in collaboration with our industrial partners.

The research project is in collaboration with Ericsson and Zenuity and is strongly connected with ongoing research projects within the WASP (Walleberg Autonomous Systems Program). The working time of post-doctoral staff is mainly devoted to research. Undergraduate teaching duties, not exceeding 20% of the working time, may include supervision of MSc students. The appointment is a full-time employment (not a scholarship) for a period of not more than two years (1+1).

A PhD (or close to completion) in system identification, computer science, control theory or neighboring relevant field with focus on machine learning and data analysis is required. Experience automotive control applications will be preferred. Ability to initiate new research collaborations is essential. Good communication skills in oral and written English are required.

Please apply through the following link: https://bit.ly/2IQnQxg

6.27. Postdoc: University of Groningen, The Netherlands
Contributed by: Claudio De Persis, c.de.persis@rug.nl

A postdoctoral position is available with the SMS-Cyber-Physical Systems research group (currently consisting of 1 full professor, 2 assistant professors, 1 postdoc, 8 doctoral students) at the Faculty of Science and Engineering, University of Groningen, the Netherlands. The group is affiliated with the J.C. Willems Center in Systems and Control.

The research of the group currently focuses on resilient control, security of cyber-physical systems, data-driven estimation and control, feedback control via optimization, with applications to power systems, flow networks and data centers. The postdoc will be involved in the research activities of the group. The position also gives the successful candidate the possibility to further develop his/her educational skills and to be involved in teaching and student supervision.

Duration: initially one year, starting as soon as possible, with the possibility of extending the contract for one or two more years. Applications are accepted on a rolling basis and the position will remain open until a successful candidate is found.

Your Profile:
• A Ph.D. degree in Control Theory, Mechanical, Computer, Electrical & Electronics Engineering, Applied Mathematics, Computer Science;
• An excellent background in Systems & Control Theory. Preference will be given to candidates with strong expertise in one or more of the following areas, as demonstrated by results and papers in top-tier publications: identification, nonlinear control, networked control systems, cyber-physical systems, dynamical networks, hybrid control systems, distributed control and optimization, machine learning, synchronization in complex networks, robust and optimal control;
• Strong academic credentials, written and spoken English proficiency.

About the organization:
Since its foundation in 1614, the University of Groningen has enjoyed an international reputation as a dynamic and innovative center of higher education offering high-quality teaching and research. Study and career paths in a wide variety of disciplines encourage currently more than 30,000 students and researchers to develop their individual talents. Belonging to the best research universities in Europe, the top 100 universities in the world and joining forces with prestigious partner universities and networks, the University of Groningen is truly an international place of knowledge.

Information:
Interested candidates please send your application together with your detailed CV, motivational letter (1/2-1 A4 page) and list of references to: c.de.persis@rug.nl, p.tesi@rug.nl, n.monshizadeh@rug.nl
Please specify the following text in the subject: SMS-CPS - PostDoc application

6.28. Researcher: University of Limerick, Ireland
Contributed by: Martin Hayes, martin.j.hayes@ul.ie

Researcher in Deep Learning (Visual Cognition)
http://ece.ul.ie/
http://www.cris.ul.ie

Salary: €37,223–€48,205

Applications are welcomed for the position of Deep Learning (Visual Cognition) Researcher within the Centre for Robotics and Intelligent systems (CRIS) at the University of Limerick, Ireland. The successful candidate will develop decision engines that will automate the analysis of data in the form of image and streaming video in a novel and innovative fashion. The objective is to develop Deep Learning inspired Visual Cognition technology in an R&D Spoke Collaboration that is funded by Science Foundation Ireland within the Confirm Smart Manufacturing Research Institute.

Visual cognition engines will be developed as part of this research that will facilitate the completion of quality assurance hardware installation closeout reports through a rigorous analysis of installation photographs collected by field service technicians. Subsequently, real-time streaming video will be assessed for object identification and tracking within an enclosed 3D space.

Further information for applicants and application material is available online from:
http://www.ul.ie/hrvacancies/

Please feel free to contact the Principal Investigator, by email at martin.j.hayes@ul.ie if you have any informal queries about the position.

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6.29. Researcher: University of Limerick, Ireland
Contributed by: Martin Hayes, martin.j.hayes@ul.ie

Researcher in Chatbot
Natural Language Processing (NLP) Technology
http://ece.ul.ie/
http://www.cris.ul.ie
Salary: €37,223–€48,205

Applications are welcomed for the position of Natural Language Processing (NLP) Researcher within the Centre for Robotics and Intelligent systems (CRIS) at the University of Limerick, Ireland. The successful candidate will form part of the CRIS Chatbot Enhancement Team and will be required to develop systems level interfaces that are capable of working with existing business process software, using state of the art Chatbot and NLP technologies.

The NLP Researcher will be expected to explore the use of interface extensions such as IBM Watson, Google Dialogflow, and Amazon Lex to develop technologies that will assist in the implementation of precision control within a variety of Digital Twin and other Smart Manufacturing applications. Further information for applicants and application material is available online from: http://www.ul.ie/hrvacancies/

Please feel free to contact the Principal Investigator, by email at martin.j.hayes@ul.ie if you have any informal queries about the position.

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6.30. Researcher: University of New South Wales, Australia

Contributed by: Daoyi Dong, daoyidong@gmail.com

An exciting Research Associate in Quantum System Identification is available at the University of New South Wales, Australia. This role will be located within the School of Engineering and Information Technology (SEIT). The engineering disciplines have close research collaborations promoting multidisciplinary research opportunities. Over recent years SEIT has produced more than 400 high impact research publications each year and continues to perform exceptionally in terms of research outputs and grant funding obtained through competitive funding opportunities as offered by the Australian Research Council, Industry partners and Defence, in addition to generous internal support provided by UNSW Canberra.

About the Role:
- Level A: $93,578 to 100,090 pa (+17% super and leave loading)
- Fixed term – 24 months
- Full Time

The Research Associate Position is a key role within the research team working on the Australian Research Council (ARC) Discovery Project (DP) "Efficient and high-precision system identification in quantum cybernetics". The Research Associate will conduct research into the development of novel efficient algorithms and approaches for high-precision quantum system identification. The formal application information will be available soon at the HR website of UNSW Canberra.

A/Prof Daoyi Dong
E: d.dong@unsw.edu.au
T: +61 2 62686285

6.31. Control Engineer: WECORP, UK

Contributed by: Max Werner, administration@wecorp.com

The WECORP team is looking for a Control Engineer to join its dynamic tech start-up!
We are developing exciting new Unmanned Aerial Systems and associated technologies in the aerospace and security industries. We are a fast-growing entrepreneurial start-up with an outstanding company culture; well situated in a rapidly expanding industry. Our vision is to make security affordable to everyone and to share the freedom of living in safety with our globalised community. Working for WECORP means being part of a clever, hard working, international team that is results-driven.

What You'll Do:

As part of the engineering team you will design and oversee the production of many types of complex systems and equipment. This position requires a forward thinking and independent engineer who can take responsibility and ownership of his / her work. We are looking for someone who can adapt to any changing requirements. There is a lot of scope for personal growth and development within the role.
- Be an advocate of Test Driven Development, Automation, Continuous Integration and Continuous Deliv-

ery and use experiences to support the teams in these areas
- Develop and maintain scalable and robust code
- Work as part of cross functional, passionate agile (SCRUM/Kanban) project teams ensuring high quality delivery is at the heart of the development process from requirements definition through to delivery
- Contributing toward predictable delivery of quality releases
- Research, recommend and implement tools as needed with the goal of continually increasing our development productivity
- Proactively bringing issues and problems to the attention of the team; generating, proposing and implementing innovative solutions to solve them
- Maintain exceptionally high standards of design and code quality at all times
- To be enthusiastic, fearless and boundary-less with the ability to coach and mentor

Requirements:

- Understanding of ROS, Gazebo, Python, C++
- Knowledge of control engineering applied to Robotics, Sensor fusion and Optimisation
- Strong mathematics skills (Linear algebra, calculus and numerical schemes, model generation)
- Designing controllers in time dependent systems
- Designing estimators in time dependent systems
- Understand how to account for delays in controllers/estimators
- Fusing data from different sensors to build a reliable estimator (e.g. using an Extended Kalman Filter, Covariance Matrix)
- Knowledge of many control strategies (i.e. PID control, MPC, LQR, etc..)
- Understanding of Hardware limitations when deploying software on a platform

Desirable:

- Desirable experience in aerial robotics, autonomous driving, real robots, embedded systems/programming distributed control system (DCS)
- Understanding of PX4

We're excited to hear from you so get in touch! administration@wecorp.com

6.32. Research Scientist: Max Planck Institute Stuttgart, Germany
Contributed by: Sebastian Trimpe, trimpe@is.mpg.de

Mechatronics Scientist / Engineer (m/f/x) for the Central Scientific Facility of Cyber Valley
The Stuttgart site of the Max Planck Institute for Intelligent Systems (MPI-IS) is seeking a mechatronics expert to join our vibrant and rapidly expanding research community.

With over 400 employees distributed between campuses in Stuttgart and Tübingen, the Max Planck Institute for Intelligent Systems (MPI-IS) is conducting cutting-edge research in the fields of micro- and nano-robotics, haptic interfaces, human-robot interaction, bio-hybrid systems, medical robotics, computer vision, control, machine learning, and much more. In addition, our institute is a founding member of Cyber Val-

ley, a research network comprising key players in the fields of artificial intelligence and robotics, including major industry partners.

To provide professional, high-quality scientific and engineering expertise to our diverse and expanding research community, the institute has established a set of central scientific facilities in the areas of robotics, materials, computer vision, medical systems, high-performance computing, and software development. Working alongside some of the most talented researchers in the field, the scientists and engineers of these central facilities have the opportunity to make significant contributions to an incredibly wide variety of projects. This new position seeks to rapidly expand our team's capabilities and expertise in the areas of mechatronics, experimental design, instrumentation, compliant mechanisms, novel sensors, and/or embedded systems.

Requirements:
- Masters or doctoral degree in mechanical engineering, electrical engineering, mechatronics, computer science, or related fields
- Significant hands-on experience with mechatronic, embedded, and/or robotic systems (see below for more details)
- Very strong written and oral English communication skills
- Ability to work independently on a variety of projects

Desired Experience: Ideal candidates will have experience with some of the following:
- Proven track record of designing and developing mechatronic, embedded, and/or robotic systems
- Experimental system design & realization – work with scientists to define project requirements; select appropriate components; integrate various systems; calibrate, test, and improve final deliverables
- Mechatronic/embedded system design & programming – develop embedded systems; integrate various subcomponents including microcontrollers, sensors, actuators, and communications; implement and test real-time control systems
- Mechanical design & realization – CAD; component selection; precision design; material selection (especially composites and soft materials); manufacturing processes; design for digital fabrication (3D printing, laser cutting, CNC machining); novel electromechanical systems (e.g. soft/active elastomers)
- Electrical circuit design & fabrication – component selection; fine-pitch SMD; multi-layer design; flexible assemblies; rapid prototyping
- Measurement & instrumentation – modern sensor systems; calibration; data collection & analysis in various domains (physical, biological, etc.)

Application materials: Interested applicants should submit the following:
- English cover letter
- CV
- academic transcript(s)
- contact information for two references

Our offer:
Salaries will be based on experience according to TVöD guidelines. An initial contract will be offered for two years, and conversion to a permanent position is possible. This is a full-time position. The Max Planck Society seeks to increase the number of women in areas where they are underrepresented and therefore

explicitly encourages women to apply. We are committed to employing more handicapped individuals and especially encourage them to apply. Inquiries should be sent to Jonathan Fiene (fiene@is.mpg.de).

More information about the Max Planck Institute for Intelligent Systems and Cyber Valley can be found at http://www.is.mpg.de/ and at http://cyber-valley.de/. The position is available at the earliest convenience and will be open until 15 May 2019.

To apply please follow this link:
https://lotus2.gwdg.de/mpg/msmt/perso/is_w016.nsf/application
or send a hardcopy application to:
Max Planck Institute for Intelligent Systems
Joint Administration
Heisenbergstr. 1
70569 Stuttgart
Germany

6.33. Faculty: Otto-von-Guericke University Magdeburg, Germany
Contributed by: Rolf Findeisen, rolf.findeisen@ovgu.de

The Faculty of Mechanical Engineering at the Otto-von-Guericke University Magdeburg (OVGU) invites applicants for a Full Professorship (W3) in Mechatronics.

We are seeking an internationally recognized scientist for research and teaching with a focus on model-based concepts and application-related development methods in promising mechanical engineering-oriented cross-sectional topics; outstanding expertise in two or more of the following areas is required:
- Integrated modelling and simulation of mechatronic systems
- General actuator systems (i. a. conceptual and structural design, modelling and system control)
- Robotic systems
- Actuator-based assistance systems in medical engineering
- Mechatronic systems in mobile applications
- Development of cyber-physical systems in the context of Industry 4.0

The candidate is expected to have experience in the acquiring of third-party funding from national and international research foundations and/or in the direct cooperation with industry. Participation in interdisciplinary collaboration, in teaching and research with the Faculty of Mechanical Engineering, the Faculty of Electrical Engineering and Information Technology and other technical faculties of the OVGU as well as participation in the self-administration are required.

Academic teaching in Bachelor and Master courses and participation of teaching in our partner universities within the field of mechatronics in German and English language is compulsory. Formal prerequisites for the appointment are the habilitation or equivalent qualifications according to § 35 (2, 3) HSG-LSA. Applications from disabled persons will be given priority in the case of equal suitability, ability and professional expertise. The Otto von Guericke University aims to increase the proportion of femal researchers

within the university and specifically encourages women to apply. Applications comprising a curriculum vitae, documentation of scientific record, a structured record of publications, a list of teaching experiences, a teaching and research concept, relevant certificates, record of teaching evaluations, record of third-party funding should be send no later than May 15th, 2019 to:

Otto-von-Guericke-Universität Magdeburg
Dean of Mechanical Engineering
Prof. Dr. Michael Scheffler
Postfach 4120
39016 Magdeburg (Germany)
fmb.dekanat@ovgu.de

Further details can be found at: https://bit.ly/2VVJF11

6.34. Faculty: KU Leuven, Belgium
Contributed by: Jan Swevers, jan.swevers@kuleuven.be

Faculty Position at the KU Leuven, Belgium
The KU Leuven Faculty of Engineering Technology and Department of Mechanical Engineering have a full-time academic vacancy for a professor in the area of machine design, automation, and process control.

The Faculty of Engineering Technology has six campuses across Flanders. This academic vacancy is intended for the campus in Geel. We are looking for internationally oriented candidates with an excellent interdisciplinary research record, with educational competencies within the field of mechanical design and project-based learning, and strongly focused on applied research in collaboration with industry.

The research group of the Department of Mechanical Engineering on the campus in Geel focuses on two areas of application: the food industry, agriculture and horticulture on the one hand, and thermal energy systems on the other. In both domains, the campus can rely on a long tradition of practice-based research and services (both regional and European). As a result, high-quality research infrastructure is already available, as well as an extensive international network, connections with companies and non-profit organizations and a supportive working environment. The research to be developed will further strengthen the position of the campus in these areas of application and will achieve additional valorisation in these and related sectors.
http://iiw.kuleuven.be/english/geel

More information on this faculty position and how to submit your application, please following this link:
https://www.kuleuven.be/personeel/jobsite/jobs/55037624?hl=en&lang=en

6.35. Faculty: Curtin University and Cisco, Australia
Contributed by: Cheyenne McMullan, cheyenne.mcmullan@curtin.edu.au

Cisco Chair for Intent Based Networking
Job No: CURTIN658

Location: Perth

Continuing Professor (ALE) Teaching & Research position

A competitive salary will be offered plus 17% superannuation

Relocation provided for you and your immediate family

Curtin University is ranked in the top 1% of universities worldwide (ARWU 2018 and QS World University Rankings 2019), and is placed 20th in the world for universities less than 50 years old (QS Top 50 Under 50 2019). Curtin is WA's most preferred university, with highly engaged industry-facing partners. Curtin University is a major global player, with well-integrated campuses in Singapore, Malaysia, Mauritius and Dubai.

Curtin University and Cisco have a standing strategic alliance which aligns the two organisations for the purpose of developing, executing and promoting mutually beneficial research and collaborative projects. As part of these collaboration projects, a recently signed Research Collaboration Agreement, commits the two organisations to establish a Centre aimed at contributing to, and becoming a recognised leader in, the intent based networking field. The partnership will establish a Cisco Curtin Centre for Intent Based Networking (CIBN) with dedicated academic staff and a Cisco DNA lab environment. This Centre will be embedded in the School of Electrical Engineering, Computing and Mathematical Sciences at Curtin University, with strong links to the Curtin Institute for Computation. The alliance will leverage synergies between Curtin's excellent research, teaching and learning capabilities, and Cisco's market-leading technology and network capabilities.

Your new role:

As the Cisco Chair for Intent Based Networking, your focus will be on improving network intelligence, and applying these new capabilities into specific industries; higher education, Smart Cities/Smart Campuses and industrial environments. Your role will lead and contribute to the development of intelligent networks, networking automation (self-diagnosis, self-adapting and self-healing networks), improving network resilience, minimising the risk of change and improved cyber security practises. This rare opportunity will allow the successful candidate to play a leading role in managing a team of Post-Doctoral Fellows, PhD and Masters Students. You will be involved in the recruitment of these positions. This position will be research focused with some teaching requirements.

To view the Candidate Information Booklet, please visit

https://applynow.net.au/jobs/ni/CURTIN658

Applications close: 5:00 PM, Monday 10 June 2019

6.36. Faculty: Delft University of Technology, The Netherlands
Contributed by: Bart De Schutter, b.deschutter@tudelft.nl

Assistant professor Nonlinear and Adaptive Systems and Control at the Delft Center for Systems and Control

The Delft Center for Systems and Control (DCSC - www.dcsc.tudelft.nl) of Delft University of Technology,

The Netherlands has a vacancy for a tenure track assistant professor in the broad field of Nonlinear and Adaptive Systems and Control.

The research area of the position will be oriented towards fundamental topics in one or more of the following fields:
* adaptive control of nonlinear systems and/or hybrid systems
* analysis and control of networks with nonlinear or hybrid dynamics
* integrated model-based and learning-based control
* big data methods for systems and control
* nonlinear time-delay systems
* mixed human-machine decision making

Prospective research activities involve the development of systematic and computationally efficient modeling, analysis, control, and/or verification methods within the topics listed above. In addition, within this position applications of the developed fundamental methods should be targeted towards application fields that could either connect to current application fields at DCSC, such as road and freeway networks, transportation systems, smart power grids, smart energy systems, water distribution networks, robotics, renewable energy, smart buildings, social and biological networks, or that could or involve a completely new application field within DCSC.

Position

The position offered is a tenure-track position for a period of 6 years, leading to a permanent position assuming excellent performance. During the tenure track, the candidate will have the opportunity to develop into an internationally acknowledged and recognized academic. To this aim, we offer a structured career and personal development program. Delft University of Technology offers an attractive benefits package, including a flexible work week, and the option of assembling a customized compensation and benefits package.

Profile of the candidate

We are looking for a candidate with a PhD degree in systems and control, computer science, applied mathematics, mechanical engineering, electrical engineering, operations research, or informatics, and with an extensive expertise in the topic of the position as well as the broad field of systems and control. The candidate should preferably have at least 1 year of postdoc experience and they should already have gained an international reputation in their field of research and have a good track record in conducting innovative fundamental research. The candidates should also have the necessary didactic abilities for teaching systems and control courses at the BSc, MSc, and postgraduate level. International applicants must be willing to acquire knowledge of the Dutch language. In accordance with the equal opportunity policy of Delft University of Technology female candidates are in particular invited to apply.

Information and application

For more detailed information on the position, please contact Bart De Schutter at b.deschutter@tudelft.nl Applicants should submit their letter of application along with a curriculum vitae or resume, a personal

research and teaching statement, as well as a list of publications, electronic copies of three key publications, and the names and email addresses of three referees, via email to Application-3mE@tudelft.nl attn. Ms Irina Bruckner of the HR department. When applying, please make sure to mention the vacancy number: 3mE19-30. The application deadline for the position is July 1, 2019. However, the position will stay open until a suitable candidate has been found.

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