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Welcome to the 330 issue of the Eletter, available electronically here.
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1. **IEEE CSS Headlines**

1.1. **IEEE Control Systems Society Publications Content Digest**

Contributed by: Elizabeth Kovacs, ekovacs2@nd.edu

CSS Publications Content Digest The IEEE Control Systems Society Publications Content Digest is a novel and convenient guide that helps readers keep track of the latest published articles. The CSS Publications Content Digest, available at [http://ieeecss.org/publications-content-digest](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.

1.2. **IEEE Transactions on Automatic Control**

Contributed by: Elizabeth Kovacs, ekovacs2@nd.edu

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Volume 61 (2016), Issue 3 (March)

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

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1.4. IEEE Control Systems Society Technically Cosponsored Conferences

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

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

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

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

The IEEE CSS Outreach Task Force is providing initial notice that the window for submission of proposals to the IEEE-CSS Outreach Fund for its 2016 spring solicitation will be held from May 2 to 27, 2016. Information regarding the program can be found in:
http://www.ieeecss.org/general/control-systems-society-outreach-fund

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

2. Summer Course

2.1. Summer Course: The role of systems engineering in medical assist devices
Contributed by: Dana Copot, copotdana@yahoo.com

Invitation to the summer course on “The role of systems engineering in medical assist devices”

This year’s edition of our traditional Summer Course is honoring the topic of Medical Devices and Systems. In today’s healthcare, strong emphasis is put on personalized medicine. This is only possible at the confluence of several disciplines, e.g. engineering, information technology, clinical practice, etc. The emerging technologies require medical devices which contain a manifold of multidisciplinary interfaced applications and algorithms meant to ease the task of today’s care giver. The central role is obviously handed to the patient, and patient well-being and safety are of utmost importance when overall quality is measured. Mixture of digital and analogue information is delivered through cyber-physical systems for medical device technologies. A satellite but equally important feature in this inter-connected healthcare system is the pharmaceutical industry which has to cope with increasing demand for novel and efficient drugs and faster times to market. This course is an up-to-date for any post-graduate level in engineering, (bio)medicine and computational and interfacing systems.

The role of this course is to provide the necessary context where control and system engineering play an important role in the development of medical assist devices and improving healthcare problems in general. This is achieved by introducing to the participants concepts from modeling drug response, patient dynamics, integration of this response into prediction models used in regulatory loops, interfacing with patient database and monitoring devices, modular programming architecture for patient monitoring systems. Additionally, the participants will also have the opportunity to learn how to bring their innovations to the market, which is an essential knowledge and tech transfer step in order to introduce their work to the clinical practice. The participants will gain unique but complementary skills and the competence view the bigger context of their specific research topic.

This year’s edition of Summer Course will be closed with the celebration of 30 years expertise of our department in the application of control theory to various fields.
3. Books

3.1. Nonlinear Systems Tracking

Contributed by: Lyubomir T. Gruyitch, lyubomir_gruyitch@yahoo.com

Nonlinear Systems Tracking
Lyubomir T. Gruyitch
January 2, 2016 by CRC Press
Reference - 478 Pages - 16 B/W Illustrations
ISBN 9781498753258 - CAT# K27341
https://www.crcpress.com/Nonlinear-Systems-Tracking/Gruyitch/9781498753258

Features
- Covers a very large class of time-varying nonlinear systems that incorporate the any-order input-output systems and those determined by the classical state-space description
- Presents new theories and concepts that begin by defining new system and control properties and end with the criteria or with the conditions on the system
- Solves the problem of achieving the tracking control task whatever the physical (biological, chemical, economical, electrical, electromechanical, mechanical, or social) nature of the plant
- Addresses the dynamical and control problems caused by the complexity of the system
- Uses the new simple vector and matrix notation analogous to the scalar notation

Summary
Tracking is the goal of control of any object, plant, process, or vehicle. From vehicles and missiles to power plants, tracking is essential to guarantee high-quality behavior. Nonlinear Systems Tracking establishes the tracking theory, trackability theory, and tracking control synthesis for time-varying nonlinear plants and their control systems as parts of control theory. Treating general dynamical and control systems, including subclasses of input-output and state-space nonlinear systems, the book:
- Describes the crucial tracking control concepts that comprise effective tracking control algorithms
- Defines the main tracking and trackability properties involved, identifying properties both perfect and imperfect
- Details the corresponding conditions needed for the controlled plant to exhibit each property
- Discusses various algorithms for tracking control synthesis, attacking the tracking control synthesis problems themselves
- Depicts the effective synthesis of the tracking control, under the action of which, the plant behavior satisfies all the imposed tracking requirements resulting from its purpose
With clarity and precision, Nonlinear Systems Tracking provides original coverage, presenting discovery and proofs of new tracking criteria and control algorithms. Thus, the book creates new directions for research in control theory, enabling fruitful new control engineering applications.

4. Journals

4.1. Contents: Automatica

Contributed by: Elisa Capello, automatica@polito.it
- “Non-predictor controller for feedforward and non-feedforward nonlinear systems with an unknown time-varying delay in the input”, Min-Sung Koo, Ho-Lim Choi, pages 27-35.
- “Structural modeling and convergence analysis of consensus-based time synchronization algorithms over networks: Non-topological conditions”, Yu-Ping Tian, Siheng Zong, Qingqing Cao, pages 64-75.
- “Range-only based circumnavigation of a group of moving targets by a non-holonomic mobile robot”, Alexey S. Matveev, Anna A. Semakova, Andrey V. Savkin, pages 76-89.
- “Distributed multi-agent optimization subject to nonidentical constraints and communication delays”, Peng Lin, Wei Ren, Yongduan Song, pages 120-131.
- “Asymptotic behaviour of contraction non-autonomous semi-flows in a Banach space: Application to first-order hyperbolic PDEs”, Ilyasse Aksikas, pages 140-146.
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- “Adaptive continuous higher order sliding mode control”, Christopher Edwards, Yuri B. Shtessel, pages 183-190.


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

Control Theory and Technology
(The original title: Journal of Control Theory and Applications)
Vol. 14, No. 1, February 2016
ISSN: 2095-6983 CODEN: CTTOAM
http://jcta.alljournals.ac.cn/cta_en/ch/index.aspx
http://www.springer.com/engineering/control/journal/11768

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4.3. Contents: International Journal of Control, Automation, and Systems
Contributed by: Young Hoon Joo, journal@ijcas.com

International Journal of Control, Automation, and Systems (IJCAS)
Vol. 14, No. 1, February 2016
ISSN: 1598-6446
http://www.springer.com/engineering/robotics/journal/12555

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Contributed by: Fikret Aliyev, chief_ed@acmij.az

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Vol.15, No.1, February 2016
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4.5. Contents: Asian Journal of Control
Contributed by: Fu Li-Chen, lichen@ntu.edu.tw

Asian Journal of Control
Vol.18, No.1 January, 2016

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

CFP: IEEE/CAA Journal of Automatica Sinica
Special Issue on IoT-based Smart and Complex Systems

The Internet of Things (IoT), also called Industrial Internet, has been defined as a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and communication technologies. It has been considered as another technological revolution. More and more smart and complex systems are based on IoT, such as Smart Cities, Smart Grid, Smart Factories, Smart Homes, Smart Buildings and Smart Cars. They are able
to intelligently respond to their environment and offer value-added services to their clients. Their discrete-event nature and hybrid modeling, control, scheduling, simulation and security management pose a deluge of theoretically significant and practically meaningful issues to researchers in many fields. They often require interdisciplinary efforts and mathematical modeling and optimization approaches to move this field forward.

The aim of this special issue is to seek the original cutting-edge research results on advances in IoT-based Smart and Complex Systems, with particular emphasis on system modeling/analysis/control methods, system design and evaluation, and security management.

The topics of interest include, but are not limited to:
- Formal modeling and analysis methods for IoT-based Smart and Complex Systems;
- Fundamental control and security issues related to IoT-based Smart and Complex Systems;
- IoT applications arising from sensor networks, social networks, cyber-physical systems, modern production systems, hardware/software systems, process-aware information systems, service-oriented systems, and intelligent transportation systems, and other smart systems.

Important Dates:
15 April 2016 Deadline for manuscript submission
1 July 2016 Notification of authors
1 August 2016 Deadline for submission of revised manuscripts
1 October 2016 Final decision of acceptance
1 January 2017 Publication date

4.7. CFP: Distributed Control and Optimization with Resource-Constrained Networked Systems
Contributed by: Jianping He, jphe@uvic.ca

Distributed Control and Optimization with Resource-Constrained Networked Systems

CALL FOR PAPERS
In recent years, we have been witnessing booming development of a new generation of networked systems in a vast number of applications, e.g., in cyber-physical systems such as power grids, transportation networks, environmental monitoring, emergency response, etc. Numerous functionalities of networked systems can be posed as control and optimization problems. Control and optimization over networked systems are often distributed in nature. However, most real-world networked systems have constrained resources in communication, networking and computing, such as energy budget, bandwidth, network throughput, media access, computational capability and so on, degrading the system performance and further confining the utility of the whole system. The utilization of distributed control and optimization is still severely limited to communications, networking and computation capabilities, bringing new problems into the picture. It is, consequently, of great interest to investigate distributed control and optimization over resource-constrained networked systems.

The proposed special issue is expected to capture theoretical advances as well as practical challenges and requirements in distributed control, estimation and optimization with resource-constrained networked systems. Some urgent research directions include but not limited to the following:
- Resource-constrained sensor scheduling in wireless sensor networks
- Distributed resource allocation under communication/energy constraints
- Event-based state estimation, event-triggering control and consensus algorithms
- Distributed routing and sensing algorithms subject to communication/energy constraints
- Multi-agent formation control with limited communication capacity
- Consensus-based distributed control and optimization
- Distributed convex optimization
- Distributed sequential decision process subject to unreliable communications
- Security and privacy in distributed control and optimization
- Data fusion in resource-constrained network systems
- Energy-efficiency distributed optimization algorithm development
- Distributed energy dispatch and optimization in power grid
- Distributed fault detection and fault-tolerant control
- Applications and case study of distributed control and optimization

Timetable:
The proposed timetable is as follows:
- Paper submission deadline: 05/25/2016
- First round author notification: 09/25/2016
- Revised manuscripts deadline: 12/25/2016
- Expected publication: 02/15/2017

4.8. CFP: International Journal of Robust and Nonlinear Control
Contributed by: Jianping He, jphe@uvic.ca

Extended Submission Deadline: March 31, 2016

International Journal of Robust and Nonlinear Control
Call for Submissions: Special Issue on Consensus-based Applications in Networked Systems

In recent years, networked systems have received a lot of attentions from various scientific researchers in various research fields, e.g., network and communication engineering, network computing, network economics, etc. Networked systems are often distributed in nature, and thus are viewed as distributed systems. Distributed systems have the advantages of strong robustness, flexibility scalability, and high efficiency.

Consensus, a popular distributed strategy, defines a set of local rules regulating the updating iteration of nodes in the systems, under which an agreement regarding a certain quantity of interest that depends on the initial states of all agents can be reached. Recent studies showed that consensus can be achieved in dynamic networked systems in finite time, which enables numerous applications in conventional research areas such as flocking and formation control, load balancing in networks, as well as other newly emerging distributed systems, e.g., distributed scheduling and optimization in wireless networks, economic dispatch in smart grid, opinion dynamics in social networks, privacy-preserving data aggregation, and so on. These new applications give rise to new challenges and opportunities to algorithm design, theoretical analysis and system implementation of consensus technologies. Meanwhile, most existing works have rarely considered consensus in practical application scenarios, especially for the newly emerging distributed networked systems such as wireless sensor networks (WSNs), cyber physical systems and smart grids. Therefore, there exist rich research opportunities in both theoretical and practical aspects.

This special issue is expected to link the practical challenges and requirements with the theoretical advances in systematic study of consensus applications in networked systems that include the consensus applications development, application-oriented algorithm design and theoretical analysis, system implementation and optimization, etc. The topics relevant to this special issue include but are not limited to:
- Consensus-based time synchronization in sensor networks
- Consensus algorithms in mobile sensor/robot networks
- Nonlinear consensus algorithms for networked systems
- Consensus algorithms for multi-agent systems
- Consensus and cooperation in networked systems
- Consensus-based data aggregation in smart grid systems
- Consensus-based economic dispatch in smart grid systems
- Synchronization in power systems
- Consensus seeking in social networks
- Consensus-based distributed scheduling and optimization
- Security and privacy consensus algorithm and theory
- Security and privacy issues in consensus-based applications
- Robustness analysis of consensus algorithms in applications

Submission Details:
Authors are requested to submit their manuscript online no later than February 28, 2016 at the journal submission website at: https://mc.manuscriptcentral.com/rnc-wiley. When submitting, please select manuscript type ‘Consensus-Based Applications in Networked Systems’ and answer ‘Yes’ to the question “Is this submission for a Special Issue?”
Please also refer to the journal’s Author Guidelines for manuscript submission at: http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1099-1239/homepage/ForAuthors.html.

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

CALL FOR PAPERS
Special Issue on “Theoretical and Practical Challenges in Learning Control”
http://www.ajc.org.tw

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

This special issue invites original articles that address both theoretical and application-oriented challenges in the area of learning control, including novel applications, performance improvement along iteration domain and time domain, new analysis tools, and any related technologies in learning control. Topics of potential interest include, but are not limited to:
1. Robust design methods
2. Performance improvement
3. New stability/convergence analysis tools
4. Novel applications

Important Dates:
March 31, 2016 Deadline for submissions
July 31, 2016 Completion of First Review
November 30, 2016 Completion of Final Review
December 31, 2016 Receipt of Final Manuscript
July 1, 2017 Publication (Tentatively Vol.19, No. 4)

About AJC

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

How to submit:

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

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National Taiwan University Fax: +886-2-2365-4267
Taipei 10617, Taiwan E-mail: lichen@ntu.edu.tw

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

4.10. CFP: Asian Journal of Control

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

CALL FOR PAPERS

Special issue on “Advances in Control and Optimization over Wireless Sensor and Actuator Networks”
http://www.ajc.org.tw

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

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

This special issue seeks original contributions which address recent emerging issues of control and optimization over WSANs. We solicit on (but not limited to) the following topics:
1. Sensor-actuator and actuator-actuator coordination in WSANs
2. Estimation and control over wireless networks
3. Distributed and collaborative control over WSANs
4. Control and communication co-design in WSANs
5. Cross-layer optimization and resource allocation for WSANs
6. Wireless sensor/robot networks and mobile WSANs
7. Energy efficiency, security and privacy issues of WSANs
8. Emerging applications, simulation tools, experiments, test-beds and prototyping systems

5. Conferences

5.1. American Control Conference

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

2016 American Control Conference will take place in the heart of Boston, on July 6-8, 2016:
http://acc2016.a2c2.org
with workshops planned for July 5.

Different from previous years, this year’s Conference features a number of new and exciting programs. One of them is the ** APPLICATIONS FRIDAY ** which will take place on Friday July 8, 2016
http://acc2016.a2c2.org/apps_friday.html

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

5.2. International Conference on Foundations of Systems Biology in Engineering

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

IFAC FOSBE 2016
October 9-12, 2016, Magdeburg

On behalf of the organizing committee, we are pleased to invite you to submit papers and proposals for invited sessions to the 6th International Conference on Foundations of Systems Biology in Engineering (FOSBE 2016) which will take place in the historical city of Magdeburg, Germany, October 9-12, 2016.
Computational and engineering methods are at the core of systems biology, synthetic biology and systems medicine. The integration of quantitative data from a variety of sources together with model inference and analysis techniques as well as control theory have proven valuable to decipher biological systems ranging from intracellular mechanisms to human disease.
FOSBE aims at stimulating discussion and fostering collaborations among scientists, from method to theory oriented engineers to experimental and theoretical biologists, interested in or working on systems thinking applied to life sciences. Major conference topics are:
- Modelling of complex biological systems
- Multi-scale and multi-omics data integration and modelling
- Network interference and modeling (signaling, regulation, metabolic)
- Analysis and modeling of stochastic and heterogeneous systems
- Dynamics and control of biological systems
- Design and control of synthetic biological systems and circuits
- Systems biology for (red, green, blue and white) biotechnology
- Systems medicine
- Synthetic biology
- Next generation methods and tools for systems and synthetic biology

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

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

Deadlines
invited session proposals 11 MAR 2016
regular & invited papers, workshop proposals 20 MAR 2016
abstracts contributions 15 JUN 2016
Acceptance notification 30 JUN 2016
Final contributions 15 JUL 2016
Conference Website: http://www.fosbe2016.ovgu.de.

5.3. Conference on Control and Fault-Tolerant Systems
Contributed by: Christophe Aubrun, christophe.aubrun@univ-lorraine.fr

SysTol’16: 3rd Conference on Control and Fault-Tolerant Systems
September 7-9, 2016 - Barcelona, Catalonia, Spain (http://systol16.cs2ac.upc.edu)

The two previous editions of the International Conference on Control and Fault-Tolerant Systems (Systol’10 and Systol’13) were a success and demonstrated the demand for establishing a permanent scientific forum in the general area of system monitoring, fault diagnosis and fault-tolerant control. The third conference on Control and Fault-Tolerant Systems (Systol’16), through its technical program, will provide a unique opportunity for the academic and industrial community to formulate new challenges, share solutions and discuss future research directions.

Faults/failures in technical systems may have many undesired consequences as damage to technical parts of plants, endangering of human life or pollution of the environment. Equipment failures may also have profound negative impact on production costs and product quality. The development of fault diagnosis methods allowing early detection of faults/failures is crucial in order to protect complex manufacturing machineries, to increase human life safety and to support decision making on emergency actions and repairs. Moreover, in highly automated industrial systems where maintenance or repair cannot be carried-out immediately, it is crucial to employ fault-tolerant control systems capable of ensuring acceptable performance even in the
presence of faults. The conference will bring together academics, engineers and practitioners active in the fields of fault diagnosis, fault tolerant control and their application in process monitoring and maintenance.

Important Dates:
Invited session proposals, Workshop/Tutorial proposals due: March 7, 2016
Contributed papers, Invited session papers due: March 14, 2016
Notification of acceptance/rejection: June 1, 2016
Final submission and on-line registration, due: July 4, 2016

Paper Submission:
All papers accepted and presented at SYSTOL’16 will be published in the conference proceedings, and included in the IEEE Xplore on line digital library and EI Compendex database. All papers must be submitted and uploaded electronically. Go to https://contols.papercept.net. Click on the link “submit a contribution to SysTol’16” and follow the steps.

5.4. International Conference on Methods and Models in Automation and Robotics
Contributed by: Pawel Dworak, pawel.dworak@zut.edu.pl

CFP: 21st International Conference on Methods and Models in Automation and Robotics
29 August - 1 September 2016
Amber Baltic Hotel, Miedzyzdroje, Poland

It is our great pleasure to invite You to participate in the 21st International Conference on Methods and Models in Automation and Robotics, MMAR 2016 to be held in Miedzyzdroje, Poland, from August 29th to September 1st, 2016. The Conference will be a good opportunity for highlighting the new results and directions of Automatic Control theory, technology and applications. As such, it mainly will concentrate on the following key points:
- emphasis on invited lectures including plenaries,
- industry participation promotion,
- attract young people to study and work in the field.

The participants of the 21st International MMAR Conference will have the opportunity to take part in the wide spectrum of categories for technical presentations, including plenary lectures, regular papers of both lecture and poster session types, and panel discussion. We look forward to seeing our old and new friends in Poland. You are kindly invited to participate in the 21st International MMAR Conference in Miedzyzdroje, Poland.

The proceedings of the conference will be submitted for review and approval for inclusion in the IEEE Xplore Digital Library and will be submitted for inclusion in the Conference Proceedings Citation Index - Science (ISI Web of Science).

For more information see http://www.mmar.edu.pl

5.5. World Congress: Mathematical Problems in Engineering, Aerospace and Sciences
Contributed by: Seenith Sivasundaram, seenithi@gmail.com

World Congress: Mathematical Problems in Engineering, Aerospace and Sciences
WHEN: 05-08 July 2016
WHERE: La Rochelle, France, University of La Rochelle
ICNPAA’s AIM

Mathematical Problems in Engineering, Aerospace and Science have stimulated cooperation among scientists from a variety of disciplines. Developments in computer technology have additionally allowed for solutions of mathematical problems. This international forum will extend scholarly cooperation and collaboration, encouraging the dissemination of ideas and information. The conference will have a pool of active researchers, with a proper balance between academia and industry, as well as between senior and junior researchers, including graduate students and post-doctoral fellows. It is anticipated that such a balance will provide both senior and junior researchers an opportunity to interact and to have a wider picture of recent advances in their respective fields. The conference, especially, enables the setting up of new interdisciplinary research directions among its participants by establishing links with world renowned researchers, making possible joint international projects that will no doubt bring about fresh and innovative ideas and technologies in engineering, aerospace and sciences

Co-Sponsored by: AIAA: American Institute of Aeronautics and Astronautics
IFIP: International Federation of Information Processing
La Rochelle, France, University of La Rochelle

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

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

5.6. International Conference on Swarm Intelligence

Contributed by: Carlo Pinciroli, ilpinicy+ants@gmail.com

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

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

Scope of the Conference:
Swarm intelligence is the discipline that deals with the study of self-organizing processes both in nature and in artificial systems. Researchers in ethology and animal behavior have proposed a number of models to explain interesting aspects of social insect behavior such as self-organization and shape-formation. Recently, algorithms and methods inspired by these models have been proposed to solve difficult problems in many domains.

An example of a particularly successful research direction in swarm intelligence is ant colony optimization, the main focus of which is on discrete optimization problems. Ant colony optimization has been applied success-
fully to a large number of difficult discrete optimization problems including the traveling salesman problem, the quadratic assignment problem, scheduling, vehicle routing, etc., as well as to routing in telecommunication networks. Another interesting approach is that of particle swarm optimization, that mainly focuses on continuous optimization problems. Here too, a number of successful applications can be found in the recent literature. Swarm robotics is another relevant field. Here, the focus is on applying swarm intelligence techniques to the control of large groups of cooperating autonomous robots.

ANTS 2016 will give researchers in swarm intelligence the opportunity to meet, to present their latest research, and to discuss current developments and applications.

The three-day conference will be held in Brussels, Belgium, on September 7-9, 2016.

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

Publication Details:
Conference proceedings will be published by Springer in the LNCS. series.

The journal Swarm Intelligence will publish a special issue dedicated to ANTS 2016 that will contain extended versions of the best research works presented at the conference. Further details will soon be published on the web site.

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

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

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

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

Important Dates:
Submission deadline March 2, 2016
Notification of acceptance May 4, 2016
Camera ready copy May 18, 2016
Conference September 7-9, 2016
5.7. International Conference on Intelligent Unmanned Systems  
Contributed by: Youmin Zhang, Youmin.Zhang@concordia.ca

Call-for-Papers: The 12th International Conference on Intelligent Unmanned Systems  

On behalf of the ICIUS 2016 Organizing Committee, this is to invite you to submit your contributions to the  
to be held at the famous historical city: Xi’an, China, during Aug. 23-25, 2016.

The 2016 International Conference on Intelligent Unmanned Systems (ICIUS 2016) will be held in Xi’an,  
Shaanxi Province, China, from August 23rd to 25th, 2016. The conference offers a unique and interesting  
platform for scientists, engineers and practitioners throughout the world to present and share their most  
recent research and innovative ideas in the areas of unmanned systems, robotics, automation, and intelligent  
systems.

The aim of the ICIUS2016 is to stimulate among researchers active in the areas pertinent to intelligent  
unmanned systems. The topics of interests include, but are not limited to:
- Unmanned Systems: Micro air vehicle, Underwater Vehicle, Micro-satellite, Unmanned aerial vehicle,  
  Multi-agent systems, Autonomous ground vehicle, Blimp, Swarm intelligence.
- Robotics and Biomimetics: Artificial muscle actuators, Smart sensors, Design and applications of MEMS/NEMS  
  system, Intelligent robot system, Evolutionary algorithm, Control of biological systems, Biological learning  
  control systems, Neural networks, Bioinformatics.
- Control and Computation: Distributed and embedded systems, Embedded intelligent control, Complex  
  systems, Pervasive computing, Soft computing, Discrete event systems, Hybrid systems, Networked control  
  systems, Delay systems, Identification and estimation, Nonlinear systems, Precision motion control, Control  
  applications, Control engineering education, Computer Architecture & VLSI, Signal, Image and Multimedia  
  Processing
- Intelligent System: Ubiquitous computing, Algorithms, Distributed intelligence, Distributed/decentralized  
  intelligent control, Fuzzy systems, AI and expert systems, Virtual Reality, Wearable computers, Information  
  Systems and Retrieval, Software engineering, Knowledge Data Engineering, Data communications and  
  compression.

All accepted papers would be further reviewed for post conference journal publications in International Journal  
of Intelligent Unmanned Systems (IJIUS), Journal of Unmanned System Technology (JUST), Journal of  
Instrumentation, Automation and Systems (JIAS), and International Journal of Mechatronics and Robotics  
(IJMR). A special issue with selected papers will also be published at journal Unmanned Systems (US),  
Journal of Intelligent & Robotic Systems (JINT), and International Journal of Intelligent Computing and  
Cybernetics (IJICC). Any contributed or invited paper can be nominated for the ICIUS 2016 Best Conference  
Paper Award and the ICIUS 2016 Best Student Paper Award. The final evaluation by the awards  
committee will take into account the presentations at ICIUS 2016.

Contributed Papers:
Prospective authors are invited to submit the full version of their manuscripts in MS Word or LaTeX format.  
A maximum of 6 pages in the standard ICIUS format is allowed for each paper. Detailed instructions for  
paper submission are available on the conference website.

Invited Sessions:
The conference will feature invited sessions on new topics and innovative applications. These sessions will  
consist of 5-6 articles and undergo a regular review process. Prospective organizers should include a brief  
statement of purpose for the session as well as the abstracts of the papers.
Location:
Xi’an was once called “Chang’an” in the Han Dynasty. The connotation of this name is “permanent peace”. Xi’an marked the starting point of the world famous Silk Road. It obtained its present name in the year 1369. Xi’an ranks first on the list of the country’s seven largest ancient capitals. Xi’an is the home of the world famous landscape “Terracotta Warriors”. From 11th century B.C. onwards, Xi’an or its vicinity has been established as the capital city by 15 kingdoms or feudal dynasties successively, including the Western Zhou, the Qin, the Han, the Sui and the Tang. It serves as an ancient capital city beyond comparison with regard to the number of dynasties and span of time. And it was regarded as one of the “Four Ancient Civilizations of the World”, the other three being Rome, Athens, and Istanbul. Xi’an is situated in the middle of the Yellow River reaches and at the center of the Central Shaanxi Plain. Within Xi’an one can find a large number of historic attractions, such as the remains of Banpo Village, a Neolithic matriarchal clan community, the Mausoleum of the First Qin Emperor. Walking around this old city is like going through thousands of years back in history.

Important Dates:
Deadline for Submission: April 1, 2016
Acceptance Notification: May 1, 2016
Deadline for Final Papers: June 1, 2016
Deadline for Early Bird Registration: July 31, 2016

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

NecSys 2016
6th IFAC Workshop on Distributed Estimation and Control in Networked Systems
September 8th-9th, 2016, Tokyo, Japan
http://www.necsys2016.ctrl.titech.ac.jp
Deadline for paper submission: April 15th, 2016

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

Context and Scope:
Networked Systems and complex dynamical systems are composed of a large number of simple systems interacting through a communication medium. These systems arise as natural models in many areas of engineering and sciences, such as sensor networks, autonomous, unmanned vehicles, power networks, biological networks, and animal cooperative aggregation.

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

Back to the contents
5.9. International Conference on Control, Automation and Systems  
Contributed by: ICCAS2016, conference@icros.org

2016 16th International Conference on Control, Automation and Systems (ICCAS 2016)  
October 16(SUN)-19(WED), 2016  
HICO, Gyeongju, Korea  
http://2016.iccas.org

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

Important Dates  
May 6, 2016: Submission of organized session proposals  
May 13, 2016: Submission of full papers  
July 15, 2016: Notification of paper acceptance  
August 12, 2016: Submission of final camera-ready papers  

Plenary Speakers  
Andrew Schwartz (Univ. of Pittsburgh, USA)  
Maria Prandini (Politecnico di Milano, Italy)  
Sangchul Won (POSTECH, Korea)  
Satoshi Tadokoro (Tohoku Univ., Japan)  
James Ashton-Miller (Univ. of Michigan, USA)  
Huijun Gao (Harbin Institute of Technology, China)  
Song K. Choi (Univ. of Hawaii, USA)

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

2nd Call-for-Papers  
The 4th International Conference on Instrumentation, Control and Automation 2016 (ICA’16)  
Dates & Location: August 29-31, 2016; Bandung, Indonesia  
Technical co-sponsor: IEEE Indonesia Section  
Website: http://ica2016-itb.org/index.php/call-for-paper/

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

Conference topics include (but not limited to):  
(ii) CONTROL: PID Control, Linear/Nonlinear Analysis & Control, Multivariable Control, Model Predictive


Important Dates:
Submission site open: January 11, 2016
Initial paper submission due: April 15, 2016
Decision notification: May 31, 2016
Final paper submission due: July 15, 2016
Workshop proposal submission due: 15/5/2016
Conference dates: August 29-31, 2016

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

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

IFAC CAMS 2016,
10th IFAC Conference on Control Applications in Marine Systems
Trondheim, Norway, September 13-16, 2016
Paper submission is open from papercept
http://ifac.papercept.net/conferences/scripts/start.pl#CAMS16

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

CAMS 2016 will provide an excellent opportunity for the presentation and discussion of research results and development in the areas of control applications for surface & underwater vessels, floating & sub-sea structures, and other marine systems. The conference opens possibilities for industry, universities and research facilities to explore the future trends in application of control theory to marine systems, and to establish new and innovative activities for applying advanced solutions to marine systems.

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

Furthermore, CAMS 2016 will organize a Workshop on Marine Robotics on September 13, 2016. The Workshop is hosted by Gianluca Antonelli, Thor Inge Fossen, and Asgeir Sorensen. For more detail, visit CAMS 2016 website.

Areas and Topics (including but not limited to)
- Guidance, navigation and control (GNC) of marine vessels and unmanned marine vehicles
- Modeling, identification, simulation, and control of marine systems
- Ship roll stabilization techniques
- Modeling and control of high speed-craft
- Fault-tolerant control and fault handling for marine vehicles
- Intelligence and autonomy in marine systems and operations
- Cooperative navigation and control in marine systems
- Marine robotics and biomimicry
- Maritime safety and security for ports and ships
- Risk and life cycle assessment in marine systems
- Actuators, thrusters, propulsion systems, and sensors in marine systems
- Hybrid power plants in marine systems
- Surveillance and supervision systems in marine applications
- Control applications in aquaculture
- Control applications in marine renewable energy
- Condition-based monitoring in marine systems
- Applications of autonomous and remotely operated (surface and underwater) marine vessels
- Applications of marine vessels and robotics to environmental monitoring, mapping and surveillance, search and rescuing operations, marine habitat mapping, marine biology and geology, and hydrographic exploration

Important dates:
- Paper submission deadline: March 21, 2016
- Paper Acceptance/Rejection: May 17, 2016

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

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

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

6. Positions

6.1. PhD: University of Lorraine, France
    Contributed by: Marion Gilson, marion.gilson@univ-lorraine.fr

PhD: CNES (National Centre for Space Studies), University of Lorraine, France
SYSTEM IDENTIFICATION FOR ATTITUDE CONTROL OF SATELLITES

Description
The validation of the attitude control algorithms uses high fidelity simulators with the most accurate possible models of satellite dynamics and orbital environment. Some parameters of these models are nevertheless difficult to identify on ground (disturbing torques amplitude, satellite inertia, flexible modes characteristics), or are submitted to large uncertainties. To get more accurate numerical values, flight telemetry can be used, but the identification process is complex due to physical characteristics of the measurements (low sampling rate, noise, bias etc) and due to operational constraints: the necessary attitude profiles allowing the observability of the parameters cannot always be performed (out of flight envelop profiles, or mission interruption required). In some other more critical cases, accurate identification of the parameters is a prerequisite for the attitude control feasibility: for example, on very low altitude orbits a small knowledge error on the position of the center of mass can lead to a non-optimal guidance profile, with respect to aerodynamic disturbances and to the loss of the satellite due to actuator saturations. Finally, on elliptic orbit with very low perigee, the disturbing torques change rapidly and it would be interesting to compute a time-variant control law adapting to amplitude and frequency changes of the disturbances in satellite frame. To this aim, one needs to identify time-varying models.

From a theoretical point of view, accurate parametric identification of “grey box” models, the search of optimal inputs (for excitation signals generation) and time-varying parameters model identifications are topics of great interest in academic research, also with more and more numerous industrial applications. A lot of methodological and numerical tools exist that can better meet the requirements.

The PhD objectives are to develop new closed-loop identification techniques for time-varying parameters, either for the validation of attitude control laws with more accurate models of the satellite dynamics and environment or for adaptive control laws design. The foreseen tasks are the following:

1. Closed-loop recursive identification of time-varying parameter grey box models by using telemetry: design of new algorithms and comparison to existing ones (Kalman filters for example). This problem raises several open questions, as the choice of nonlinear functions for domains where the physical behavior is more difficult to know. This choice is often the result of a trade-off between model flexibility and parsimony. Model flexibility allows the model to include complex nonlinear phenomena, whereas parsimony aims at using the minimum number of parameters to model these nonlinear phenomena. Once this choice is done, the relevant parametric estimation method must be developed and the (in-) validation of the obtained model performed. Besides, some critical aspects of grey box identification will be studied: identifiability and sensitivity analysis of physical parameters, robustness of the proposed algorithms to initial conditions or measurement noise, or computation of uncertainty regions for the estimated parameters.

2. Input signal selection: as the model can be accurately identified only if the input/output data contain enough information, the selection of suitable excitation inputs for identification of closed-loop and time-varying system is an important issue.

Implementation and validation of the new approach with real flight telemetry, and comparison with existing tools

Desired profile
Master in automatic control

Structure description
Host Laboratory: Centre de Recherche en Automatique de Nancy (CRAN)
Laboratory Responsible: Marion GILSON - marion.gilson@univ-lorraine.fr
CNES Responsible: Christelle PITTET - christelle.pittet@cnes.fr
Requests for further information should be sent to marion.gilson@univ-lorraine.fr and christelle.pittet@cnes.fr and include:
1. Covering/Motivation letter
2. Curriculum Vitae
3. Contact details of two academic referees.
Website: https://cnes.fr/en/les-ressources-humaines-du-cnes/identification-techniques-attitude-control-satellites

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

Multiple PhD positions in Control and Optimization in Dynamical Networks

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

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

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

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

How to apply:
Please send the following documents to tyler.summers@utdallas.edu
(1) One page cover letter describing your research interests, background, and professional goals
(2) CV or resume
(3) Transcripts
Candidates will also need to apply through UT Dallas Graduate Admissions; for details, please see http://www.utdallas.edu/admissions/graduate/degrees/detail.php?d=1741 or http://www.utdallas.edu/admissions/graduate/degrees/detail.php?d=251
6.3. PhD Research Fellow: University of Agder, Norway
Contribution by: Michael Ruderman, michael.ruderman@uia.no

PhD Research Fellow in Technology with specialization in Mechatronics

Project title: Design and Verification Methods for Hybrid Control Systems

The University of Agder invites applications for a full-time, fixed-term position as Research Fellow in Mechatronics for a period of three years, at the Department of Engineering Sciences, Faculty of Engineering and Science. The position is located in Grimstad, Norway. The starting date is negotiable.

The Faculty of Engineering and Science has a core group of more than 16 academic staff members in the field of mechatronics. The group is responsible for the BSc, MSc, and PhD programmes in mechatronics at the University of Agder and has an extensive network of Norwegian and international partner universities and university colleges.

Background for the position:

Modern control systems often combine hybrid automata for integrating discrete behavior with continuous-time dynamics. The switched and impulsive systems allow for discrete transitions corresponding to the changes between the different state subspaces (set of modes) or impulsive jumps within particular mode of a hybrid system. Various application examples are in power systems with on-off switches, geared mechanical engines, digital hydraulics, programmable logic controllers employed for automation, and others. There is a growing need and correspondingly research on topics related to the formal design and verification methods for hybrid control systems.

Objectives:

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

It is expected that the candidate will perform both the theoretical and experimental work using the available mechatronic resources of the above-mentioned facilities.

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

The following requirements must be met:
- Strong academic skills, experience and interest in the following areas: control design, hybrid systems and finite automaton, formal verification methods.
- Hands on experience with PLC and dSpace and programming skills in Matlab/Simulink, C/C++.
- Strong background in systems and control theory.

The following admission requirements apply to the PhD program:
- The average grade for courses included in the bachelor’s degree (or equivalent) must be B (or equivalent) or higher;
- The average grade for courses included in the master’s degree (or equivalent) must be B (or equivalent) or higher;
- The master’s thesis (or equivalent) must have a grade B (or equivalent) or higher when the candidate is admitted to the PhD program;
- The successful applicant must have written and spoken English proficiency;
- The position places great demands on the applicant’s capacity for independent goal-oriented work, ability to concentrate as well as good communication and team-work skills in cooperation with research colleagues both inside and outside the university.

Applicants from some countries must document their English proficiency through one of the following tests with the stated results or better:
- TOEFL - Test of English as a Foreign Language with a minimum score of 550 on the Paper-based Test (PBT), or 80 on the Internet based Test (iBT)
- IELTS - International English Language Testing System, with a result of at least 6.0.

Please check this list [http://www.nokut.no/Documents/NOKUT/Artikkelbibliotek/Utenlandsk_utdanning/GSUlista/2015/GSU_listen_norsk_131115.pdf](http://www.nokut.no/Documents/NOKUT/Artikkelbibliotek/Utenlandsk_utdanning/GSUlista/2015/GSU_listen_norsk_131115.pdf) to see if an English test is required.

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

Applications from applicants who already hold a PhD will normally not be considered.

Short-listed applicants will be invited for interviews.


Closing date: 31.03.2016

For further information please contact Associate Professor Michael Ruderman, e-mail michael.ruderman@uia.no

In accordance with §25(2) of the Freedom of Information Act, applicants may request that they are not identified in the open list of applicants. The University, however, reserves the right to publish the name of applicants. Applicants will be advised of the University’s intention to exercise this right.

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**6.4. PostDoc: ONERA The French Aerospace Lab**

Contributed by: Clement Roos, clement.roos@onera.fr

Postdoctoral position at ONERA The French Aerospace Lab

Modeling, identification and control of an unmanned aircraft on ground

The proposed postdoctoral position deals with modeling, identification and control of an unmanned aircraft on ground (before takeoff and after landing). The objective will be first to create an accurate dynamic model of the aircraft behavior, including the highly nonlinear tires-ground interactions, and then to identify the most relevant parameters on the basis of experimental data. This model will finally be used to design control and guidance laws, so as to ensure stability and performance during various maneuvers, despite perturbations such as crosswind, backlash and delays, and whatever the runway state.
The selected candidate will conduct his/her research activities within the Systems Control and Flight Dynamics Department (DCSD) of ONERA The French Aerospace Lab, Toulouse, France. He/She will be involved in a large-scale European project gathering several industrial and research partners.

ONERA-DCSD has a strong expertise in the fields of systems modeling, identification techniques and control theory. Its know-how is recognized by the main aeronautical companies in Europe.

Duration: 18 months.

Requirements:
A PhD in control engineering is required to be eligible. A good knowledge in systems modeling, identification techniques, control theory, flight dynamics and Matlab/Simulink software will be appreciated, as well as a very good English level.

Contacts:
Send a resume and contact information for one-two references to Carsten Döll [carsten.doll@onera.fr], Alexandre Janot [alexandre.janot@onera.fr] and Clement Roos [clement.roos@onera.fr].

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

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

About the position
We are looking for motivated, talented PhDs from all over the world, who wish to:
- undertake/continue research at the cutting edge of optimization and control in cyber-physical networks;
- contribute to the startup of an excellent, international new research group;
- work in one of the most beautiful Italian cities with a great quality of life.

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

About OPT4SMART (Distributed optimization methods for smart cyber-physical networks):
OPT4SMART is a 5 years research project funded under the EU Horizon 2020 excellence program “ERC Starting Grant”, http://erc.europa.eu, supporting investigator-driven frontier research on the basis of scientific excellence. OPT4SMART will investigate a novel distributed, large-scale optimization framework and its application to big-data estimation, learning, decision and control problems in cyber-physical networks.

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

Who should apply
The desired candidate holds a PhD degree in Controls, Optimization, Signal Processing or related fields, and has
- an excellent publication record (few high-impact papers in high-quality journals and conferences);
- a strong mathematical background including optimization and preferably control theory or signal processing;
- strong interest in optimization and at least one of: control theory, estimation, machine learning; - excellent proficiency in written and spoken English.

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

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

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

6.6. PostDoc: University Campus Bio-Medico of Rome, Italy

Contributed by: Gabriele Oliva, g.oliva@unicampus.it

Postdoc position: Distributed Control and Security Cyber-Physical Systems, University Campus Bio-Medico of Rome, Italy.

The Complex Systems & Security Laboratory, within the University Campus Bio-Medico of Rome, is looking for talented researchers with a strong research track record for a project in the field of Distributed Control and Security Cyber-Physical Systems.

The aim of the research is to develop next-generation methods to control and secure Cyber-Physical Systems adopting decentralized approaches. In particular, emphasis will be posed on the ability of the system to detect and withstand cyber attacks to the SCADA control system, aimed at disrupting or altering the physical condition of the system. The main envisaged applications will be in the field of Critical Infrastructures and smart water networks.

Strong applicants will have a background in at least two of the following areas of expertise: distributed systems, distributed control, fault detection, critical infrastructure modelling, SCADA& ICS systems, industrial networks, ethical hacking.

Additional required competencies include fluency in English and good programming skills (Matlab and C/C++/Java are preferred; LABVIEW, and iFIX SCADA suite are a plus).

Candidates should have a PhD (or equivalent) in Control, Computer Science or a closely related subject. Suitable applicants nearing completion of a PhD will be considered.

The successful candidate will have the opportunity to collaborate with the students and faculty in the Complex Systems & Security Laboratory on different aspects of our research agenda, including an active role in the ongoing nationally and internationally funded projects and in the submission of new project applications. Relevant research topics include, among others, critical infrastructure protection, distributed systems and indoor localization.

Interested candidates should send their CV, a research statement, and list of references to Professor Gabriele Oliva at g.oliva@unicampus.it

6.7. PostDoc: North Carolina A&T State University, USA

Contributed by: Ali Karimoddini, akarimod@ncat.edu

Applications are invited for a post-doctoral position in the general area of Machine Learning. Specific areas of research include: (1) approximate reasoning in particular Fuzzy Type-2 and handling of uncertainty; (2) data representation, data management and learning. This is a non-tenure-track, year-to-year appointment,
renewable annually for up to four years subjected to satisfactory performance, availability of resources, and
the needs of the Center. The research results of this project are expected to reach a high Technology Readiness
Level (TRL) to be applied to testing and evaluation of autonomous vehicles. We thus look for applicants
that have a demonstrated track record in the applications of Machine Learning techniques to systems and
control problems. Programming skills and practical experiences with embedded real-time systems is a plus.
U.S. citizenship is preferred and minority candidates are strongly encouraged to apply. If interested, please
apply electronically by sending detailed curriculum vitae copies of your top three publications, the summary
of your PhD thesis, names and addresses of three reference persons, and other information that might be
relevant to your application to:
Ali Karimoddini, PhD
Director, ACCESS Laboratory (http://accesslab.net)
Deputy Director, TECHLAV Center (http://techlav.ncat.edu)
North Carolina A&T State University
Email: akarimod@ncat.edu
Tel: 336-285-3313

6.8. Faculty: University of Maryland, USA
Contributed by: Derek Paley, dpaley@umd.edu

The Department of Aerospace Engineering at the University of Maryland, College Park (www.aero.umd.edu)
is seeking highly qualified candidates for a tenure-track faculty position in specific areas of aerospace engi-
neering. Candidates with demonstrated technical expertise, creativity, and leadership are sought in the areas
of guidance, navigation, and control, unmanned aerial systems (UAS), and autonomy. Candidates should
have demonstrated a proven record or have high potential for excellence in instruction in flight dynamics and
control, development and execution of externally funded research programs, and mentorship of students.
The Department of Aerospace Engineering is a dynamic and growing department with 24 faculty, six named
faculty professorships and annual research expenditures of more than $14M. The department has strong
research and instructional programs in several core areas, including aerodynamics and propulsion, smart and
composite structures, space systems, rotorcraft, autonomous unmanned vehicles, and hypersonics. Close
proximity to key elements of the state and federal research and development infrastructure provides substan-
tial opportunities for collaborative research in problems of national interest and importance. In addition,
the University of Maryland UAS Test Site offers researchers, students, government and industry access to
extensive resources and pools of expertise in every aspect of UAS research.
For best consideration, a cover letter, curriculum vitae, research statement, teaching philosophy, and the
names of at least four references should be submitted online by March 30, 2016 to the following website:
Information on the department is available at www.aero.umd.edu.

6.9. Researcher: General Motors Research & Development, USA
Contributed by: ChenFang Chang, chen-fang.chang@gm.com

Position: Researcher, General Motors Research & Development Warren, MI, USA
General Motors Global Research and Development, located in Warren, Michigan, invites outstanding candi-
dates to apply for the position of Researcher - Powertrain Controls, to join a dynamic group developing the
state of the art powertrain control technologies. Interested candidates please apply for the position (Req#: RES0000684) by submitting your resume on-line at http://careers.gm.co.

Description:
Envision, generate, and demonstrate powertrain control/diagnostic concepts that lead to a quantum leap in sustainable mobility through improved fuel economy, reduced harmful emissions, and superior vehicle performance.

Major Duties and Responsibilities:
- Develop next-generation control and diagnostic algorithms for engine/powertrain systems
- Lead research in developing capabilities for controls that enable deployment of advanced engines and aftertreatment systems to meet future fuel economy and emissions standards
- Develop math models and simulation of engine/powertrain systems to facilitate a computer-aided control system design environment that enables an acceleration of the vehicle development process
- Develop rapid prototyping engine controllers, including their software, for test cells and advanced technology demonstration vehicles
- Conduct experiments in dynamometer test cells and at proving ground facilities to collect required data and validate research concepts
- Write timely and high-quality research reports, external publications, and records of invention to document new ideas and research results in his/her areas of research
- Manage relationships with divisional staffs and development partners to facilitate technology transfer
- Lead technical discussions and reviews as an expert in powertrain control technology
- Generate innovative ideas, suggest new research areas, and establish technical plans
- Maintain up-to-date knowledge of industry and technical developments affecting areas of responsibility

Qualifications:
- Ph.D. in Mechanical, Electrical, Automotive, or Aerospace Engineering specialized in Controls
- Strong background in control theory, system modeling & simulation, and control system synthesis
- Knowledge of microprocessor-based control system software and hardware development
- Knowledge of control system simulation and rapid control prototyping tools (e.g., Matlab, SIMULINK, dSPACE, NI, etc.)
- Effective verbal and written communication skills
- Strong knowledge in internal combustion engine and emissions control systems desirable
- R&D experience in powertrain controls preferred

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