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

The next Eletter will be mailed out in the beginning of June 2015.

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1. IEEE CSS Headlines

1.1. IEEE CSS Video Clip Contest 2015
Contributed by: Frank Allgöwer, allgower@ist.uni-stuttgart.de

Because of the success of the first CSS Video Clip Contest in 2014, the Control systems Society decided to sponsor a second CSS Video Clip Contest for the year 2015 with submission deadline July 1, 2015. All details are announced at the CSS Video Clip Contest Website at http://www.ieeecss.org/video-contest

1.2. IEEE Control Systems Society Publications Content Digest
Contributed by: Elizabeth Kovacs, ekovacs2@nd.edu

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

The CSS Publications Content Digest, available at http://ieeecss.org/publications-content-digest provides lists of current tables of contents of the periodicals sponsored by the Control Systems Society. Each issue offers readers a rapid means to survey and access the latest peer-reviewed papers of the IEEE Control Systems Society.

We also include links to the Society’s sponsored Conferences to give readers a preview of upcoming meetings.

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

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IEEE Transactions on Automatic Control
Volume 60 (2015), Issue 5 (May)

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- Scanning-the-Issue p. 1173

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- Symmetric Linear Model Predictive Control. C. Danielson, F. Borrelli p. 1244
- Event-Based Control and Scheduling Codesign: Stochastic and Robust Approaches. S. Al-Areqi, D. Görge, S. Liu p. 1291
- Explicit Solutions to Separable Problems in Optimal Cooperative Control. J-H. Kim, S. Lall p. 1304
- Multi-Period Mean-Variance Portfolio Optimization with High-order Coupled Asset Dynamics. J. He, Q-G. Wang, P. Cheng, J. Chen, Y. Sun p. 1320

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Volume 23 (2015), Issue 3 (May)

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- Adaptive Actuator Failure Identification for Microsatellites Under Closed-Loop Control. Y. Ma, B. Jiang, and G. Tao, page 910
- A New Semiactive Variable Stiffness Suspension System Using Combined Skyhook and Nonlinear Energy Sink-Based Controllers. O. M. Ambi and C. Crane, page 937
- Fresh Air Fraction Control in Engines Using Dynamic Boundary Stabilization of LPV Hyperbolic Systems. F. Castillo, E. Witrant, C. Prieur, V. Talon, and L. Dugard, page 963
- Aggregation and Control of Populations of Thermostatically Controlled Loads by Formal Abstractions. S. Esmaeil Zadeh Soudjani and A. Abate, page 975
- Self-Constructing Adaptive Robust Fuzzy Neural Tracking Control of Surface Vehicles With Uncertainties and Unknown Disturbances. N. Wang and M. J. Er, page 991
- State of Charge Imbalance Estimation for Battery Strings Under Reduced Voltage Sensing. X. Lin, A. G. Stefanopoulou, Y. Li, and R. D. Anderson, page 1052

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- Medium Density Control for Coal Washing Dense Medium Cyclone Circuits. L. Zhang, X. Xia, and J. Zhang, page 1117
- Repetitive Learning Control Design for LED Light Tracking. S. Scalzi, S. Bifaretti, and C. M. Verrelli, page 1139
- Neural Network-Based Model Predictive Control: Fault Tolerance and Stability. K. Patan, page 1147
- A Stability Guaranteed Robust Fault Tolerant Control Design for Vehicle Suspension Systems Subject to Actuator Faults and Disturbances. M. Moradi and A. Fekih, page 1164
- Two Time-Scaled Battery Model Identification With Application to Battery State Estimation. Y. Hu and Y.-Y. Wang, page 1180
- Stability Investigation of an Idle Speed Control Loop for a Hybrid Electric Vehicle. C. Kandler, T. Koenings, S. X. Ding, N. Weinhold, and M. Schultalbers, page 1189
- Data-Driven Neuroendocrine Ultrashort Feedback-Based Cooperative Control System. Y. Ding, N. Xu, L. Ren, and K. Hao, page 1205
- The SVD System for First-Order Linear Systems. R. C. Winck and W. J. Book, page 1213
1.5. IEEE Multi-Conference on Systems and Control
Contributed by: Rebecca Deal, rebeccad@icmsaust.com.au

Registration for IEEE MSC2015 now open

Conference Format:
The MSC2015 Conference will run for three days between 21 - 23 September at the Novotel Manly Pacific
and will include oral, poster, keynote and plenary sessions as well as a video competition. The program will
include a small exhibition, welcome reception and Gala Dinner.

Why should you attend MSC2015?
The MSC2015 will enable participants to interact with leading Automatic Control researchers from around
the world and to find out about state-of-the-art research results. The participants will also see presentations
from internationally renowned plenary and keynote speakers. Papers accepted by MSC2015 will be published
in the conference proceedings and in IEEE Xplore.

How to Register:
To register online for the Conference, please click copy and paste this address into your browser
https://secure.icmsaust.com.au/ei/getdemo.ei?id=719&s=_AXW0JV5AZ or visit the Conference website www.msc2015.org

Please direct all enquiries to:
MSC2015 Secretariat
ICMS Australasia Pty Ltd
GPO Box 3270
Sydney, NSW 2001
Australia
Email: registration@msc2015.org
Phone: +61 (0) 2 9254 5000

1.6. IEEE Control Systems Society Awards
Contributed by: Rick Middleton, richard.middleton@newcastle.edu.au

IEEE Control Systems Society Awards: Call for nominations

Nominations are open until May 15 for the following IEEE Control Systems Society awards (see the
http://ieeecss.org/awards for further information):

* Antonio Ruberti Outstanding Young Researcher Prize
  (nomination form at: http://ieeecss.org/sites/ieeecss.org/files/documents/CSS_Ruberti_Award_Nomination.doc)
* George S. Axelby Outstanding Paper Award
  (nomination form at: http://ieeecss.org/sites/ieeecss.org/files/documents/CSS_Axelby_Award_Nomination.doc)
* TCST Outstanding Paper Award
  (nomination form at: http://ieeecss.org/sites/ieeecss.org/files/documents/CSS_TCST_Paper_Award_Nomination.doc)
* CSM Oustanding Paper Award
  (nomination form at: http://ieeecss.org/sites/ieeecss.org/files/documents/CSS_CSM_Paper_Award_Nomination.doc)
* Control Systems Technology Award
  (nomination form at: http://ieeecss.org/sites/ieeecss.org/files/documents/CSS_CST_Award_Nomination.doc)
* Transition to Practice Award
  (nomination form at: http://ieeecss.org/sites/ieeecss.org/files/documents/CSS_T2P_Award_Nomination.doc)
Nominations and reference letters for these awards must be submitted using the new CSS Awards Nomination system at awards.paperplaza.net. Instruction on how to use the new system are available at: http://ieeecss.org/sites/ieeecss.org/files/documents/NominationSystemInstructions.pdf

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

The IEEE CSS Outreach Task Force is pleased to announce that the next window for submission of proposals to the IEEE CSS Outreach Fund will be held from May 4 to 25, 2015. Information regarding the program can be found in: http://www.ieeecss.org/general/control-systems-society-outreach-fund
Inquiries, including a request for application forms, should be made directly to Daniel E. Rivera, Outreach Task Force Chair, at daniel.rivera@asu.edu.

2. Books

2.1. Passivity-Based Control and Estimation in Networked Robotics
Contributed by: Takeshi Hatanaka, hatanaka@ctrl.titech.ac.jp

New book: Passivity-Based Control and Estimation in Networked Robotics
Takeshi Hatanaka, Nikhil Chopra, Masayuki Fujita and Mark W. Spong
Communications and Control Engineering series, Springer-Verlag, May 2015

Highlighting the control of networked robotic systems, this book synthesizes a unified passivity-based approach to an emerging cross-disciplinary subject. The main body of the book consists of three parts. The first examines how passivity can be utilized for bilateral teleoperation and demonstrates the inherent robustness of the passivity-based controller against communication delays. The second part emphasizes passivity's usefulness for visual feedback control and estimation. The third part presents the unified passivity-based control-design methodology for multi-agent systems. This scheme is shown to be either immediately applicable or easily extendable to the solution of various motion coordination problems including 3-D attitude/pose synchronization, flocking control and cooperative motion estimation. In addition to the theoretical results and techniques, the authors provide experimental case studies on testbeds of robotic systems including networked haptic devices, visual robotic systems, robotic network systems and visual sensor network systems.

Table of Contents:
Chapter 1. Introduction
Part I Passivity-Based Teleoperation
Chapter 2. Foundation: Passivity, Stability and Passivity-Based Motion Control
Chapter 3. Scattering Variables-Based Control of Bilateral Teleoperators
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Chapter 8. Output Synchronization for Network of Passive Systems
Chapter 9. Attitude Synchronization for Rigid Body Networks
Chapter 10. Pose Synchronization for Rigid Body Networks
Chapter 11. Cooperative Estimation for Visual Sensor Networks

Appendices
A. Additional Results Related to Lyapunov Theory
B. Basis of Rigid Body Motion
C. Properties of Rotation Matrices
D. Basic Graph Theory
E. Proofs

2.2. Stability of Dynamical Systems - On the Role of Monotonic and Non-Monotonic Lyapunov Functions

Contributed by: Ling Hou, lhou@stcloudstate.edu

Anthony N. Michel, Ling Hou and Derong Liu
Stability of Dynamical Systems - On the Role of Monotonic and Non-Monotonic Lyapunov Functions
653 pages, ISSN 2324-9749 (print), ISSN 2324-9757 (electronic)

The stability results which comprise the Direct Method of Lyapunov involve the existence of scalar-valued
functions of the system state and time (called Lyapunov functions) which when evaluated along the motions of
a dynamical system decrease monotonically with increasing time. Functions of this type are called monotonic
Lyapunov functions in this book. The qualitative analysis of “contemporary dynamical systems” (including
hybrid dynamical systems, switching systems, impulsive dynamical systems, discrete event systems, etc.)
has given rise to Lyapunov-like stability results where the requirement that the Lyapunov functions decrease
monotonically along the system motions has been relaxed. Functions of this type are called non-monotonic
Lyapunov functions in this book.

This book provides a single source for the analysis of system models represented by continuous-time and
discrete-time, finite-dimensional and infinite-dimensional, and continuous and discontinuous dynamical sys-
tems. For these system models, it presents results which comprise the classical Lyapunov and Lagrange
stability theory involving monotonic Lyapunov functions, as well as corresponding contemporary stability
results involving non-monotonic Lyapunov functions. It is shown that the results involving monotonic Lyap-
unov functions reduce in general to corresponding results involving non-monotonic Lyapunov functions. Specific examples from several diverse areas are given to demonstrate the applicability of the developed
to many important classes of systems, including digital control systems (with and without quantiza-
tion nonlinearities), nonlinear regulator systems (Lure and Popov results), pulse-width-modulated feedback
control systems, Hopfield and Grossberg neural networks (with and without time delays), digital filters (with
generalized overflow nonlinearities), Hamiltonian systems subjected to persistent and intermittent dissipa-
tion, a multi-core nuclear reactor model, and discrete event systems (with an application to a manufacturing
system and to computer load balancing).

This book addresses the following four general topics: (a) Representation and modeling of dynamical systems
of the types described above (Chapter 2); (b) Presentation of the Lyapunov and Lagrange stability theory
for dynamical systems defined on general metric spaces involving monotonic and non-monotonic Lyapunov
functions (Chapters 3 - 5); (c) Specialization of this stability theory to finite-dimensional dynamical systems
(Chapters 6 - 8); and (d) Specialization of this stability theory to infinite-dimensional dynamical systems defined on Banach and Hilbert spaces (Chapter 9).

Replete with examples and requiring only a basic knowledge of linear algebra, analysis, and differential equations, this book can be used as a textbook for graduate courses in stability theory of dynamical systems. It may also serve as a self-study reference for graduate students, researchers, and practitioners in applied mathematics, engineering, computer science, economics, and the physical and life sciences.

3. Journals

3.1. Contents: Control Engineering Practice

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

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Control Engineering Practice
Volume 38, May 2015

- U. Ubaid, S. Daley, S.A. Pope, Design of remotely located and multi-loop vibration controllers using a sequential loop closing approach, pages 1-10
- Assad Alam, Jonas Mårtensson, Karl H. Johansson, Experimental evaluation of decentralized cooperative cruise control for heavy-duty vehicle platooning, pages 11-25
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- Matthew J. Daigle, Indranil Roychoudhury, Anibal Bregon, Qualitative event-based diagnosis applied to a spacecraft electrical power distribution system, pages 75-91

3.2. Contents: Unmanned Systems

Contributed by: Ben M Chen, bmchen@nus.edu.sg

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Unmanned Systems
Vol. 3, No. 2, April 2015

- Health Aware Planning Under Uncertainty for Collaborating Heterogeneous Teams of Mobile Agents, 89-107, N. K. Ure, G. Chowdhury, J. P. How and J. Vian
3.3. Contents: Asian Journal of Control
Contributed by: Fu Li-Chen, lichen@ntu.edu.tw

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Asian Journal of Control
Vol.17, No.2 March, 2015
Special Issue on “Tensor Product (TP) Model Transformation-based Control System Design”

- Tensor Product Model Transformation Based Control and Synchronization of a Class of Fractional-order Chaotic Systems. Suwat Kuntanapreeda
- Cascade Control System-Based Cost Effective Combination of Tensor Product Model Transformation and Fuzzy Control. Radu-Emil Precup, Emil M. Petriu, Mircea-Bogdan Radac, Stefan Preitl, Lucian-Ovidiu Fedorovici and Claudia-AdinaDragos
- Revisiting the TP Model Transformation: Interpolation and Rule Reduction. Reinaldo Palhares, VĂctor Campos and Leonardo Törres
- Quasi-min-max Model Predictive Control for Image-Based Visual Servoing with Tensor Product Model Transformation. Wenfang Xie, Tingting Wang, G.D. Liu and Yimin Zhao
- Gain-Scheduled $H_\infty$ Control for Tensor Product Type Polytopic Plants. Sunan Chumalee and James Whidborne
- Output Feedback Control of a Dual-Excenter Vibration Actuator via Qlpv Model And TP Model Transformation. József Kuti, Péter Galambos and Ákos Miklós
- Control of 3D Tower Crane Based on Tensor Product Transformation with Neural Friction Compensation. Jadranko Matusko, Sandor Iles, Fetah Kolonic and Vinko Lesic
- Integral Operators in Relation to the HOSVD-Based Canonical Form. András Rövid, László Szeidl, Peter Varlaki
- TP Model Transformation via Sequentially Truncated Higher-order Singular Value Decomposition. Lin-Zhang Lu and Junjun Pan
- The Stochastic Robust Model Predictive Control of Shimmy Vibration in Aircraft Landing Gears. Wenfang Xie and Amir Hajiloo
TP-tau Model Transformation: A Systematic Modelling Framework To Handle Internal Time Delays in Control Systems. Péter Galambos and Peter Baranyi

TP Model Manipulation for Control Design Optimization and General Stability Verification. Péter Baranyi

Robust Parameter Dependent Receding Horizon $H_{\infty}$ Control of Flexible Air-Breathing Hypersonic Vehicles with Input Constraints. Wei Qin

LPV Switching Attitude Tracking Control for a Near Space Hypersonic Vehicle Via Multiple Lyapunov Functions. Yiqing Huang, Changyin Sun, and Chengshan Qian

Regular Issue

Adaptive Control Design for A Class of Uncertain High-Order Nonlinear Systems with Time-Delay. Zong-Yao Sun and Yungang Liu

Stability Criterion of 2-D Positive Systems with Unbounded Delays Described by Roesser Model. Xingwen Liu

$H_{\infty}$ Fault Detection for Two-Dimensional T-S Fuzzy Systems In FM Second Model. Lanning Wang and Weiqun Wang


Non-Rule Based Fuzzy Approach for Adaptive Control Design of Nonlinear Systems. Liang Luo, Yinhe Wang, Branko Novakovic, and Josip Kasac

Event-Triggered Consensus Control of Second-Order Multi-Agent Systems. Xia Chen and Fei Hao

Optimization of Coordinate Transformation Matrix for $H_{\infty}$ Static-Output-Feedback Control of Linear Discrete-Time Systems. Zhi-Yong Feng, Li Xu, Jin-Hua She and Xuexun Guo

A Lyapunov Based Multi-level Controller for Semi-active Suspension System with an MRF Damper. Feng Tyan and Tu Shunhsu


Active Disturbance Rejection Control Applied to a Delta Parallel Robot In Trajectory Tracking Tasks. Alberto Luviano-Juarez, Mario Ramírez-Neria, Hebertt Sira-Ramírez and Alejandro Rodríguez-Ángeles

Particle Swarm Optimization for Vehicle Positioning Based on Robust Cubature Kalman Filter. Jiang Liu, Baigen Cai and Yunpeng Wang

Synchronization for Time-Delayed Coupling Complex Dynamical Networks with Different Dimensional Nodes via Decentralized Dynamical Compensation Controllers. Lili Zhang, Yinhe Wang, Qinruo Wang and Siying Zhang

Optimal Control of Midazolam Infusion for Post Operative Patients in Intensive Care Units. Nader Meskin, Regina Padmanabhan and Wassim M. Haddad

Robust Dynamic Output Feedback Guaranteed Cost Control for Discrete-Time Systems with Time-Varying Delays. Eva Gyurkoves and Tibor Takacs

Brief Paper

Decentralized Output Feedback Protocol for Consensus Control of A Class of Nonlinear Dynamics Networks. Zhenxing Li, Haibo Ji and jie sheng

A Novel Multi-Step Model Predictive Control Scheme for Multi-Input Systems. Langwen Zhang and Jingcheng Wang
Nano-technology is an important research area in the 21st century. There are many relevant applications in various industries, such as for scientific measurement and for high tech. business areas. Atomic Force Microscopy (AFM) opens a new window to the nano-world. It features a high resolution for imaging and manipulating samples on a nanoscale in vacuum, gases, or liquid operational environments, and has now become a widely used tool in the sectors of, for example, biological sciences, industrial inspection, and medical testing, etc. As a result, AFM is becoming more and more important as one of the key approaches in next generation nano-technology.

This special issue invites original articles that address both theoretical and application-oriented papers, including innovative mechanism design, control technological improvements, new scanning methods, and any related technologies in AFM. Topics of potential interest include, but are not limited to: AFM mechanism design; AFM control methods; New scanning methods in AFM; AFM actuators or sensors; Modeling and simulation of AFM systems; Applications of AFM systems.

Guest Editors:
Prof. Ian Petersen
School of Engineering and Information Technology
UNSW Canberra, Australian Defence Force Academy, Australia
Email: i.r.petersen@gmail.com

Prof. Reza Moheimani
School of Electrical Engineering and Computer Science,
The University of Newcastle, Australia
Email: Reza.Moheimani@newcastle.edu.au

Important Dates:
September 30, 2015 Deadline for submissions
January 31, 2016 Completion of First Review
May 31, 2016 Completion of Final Review
June 30, 2016 Receipt of Final Manuscript
January 1, 2017 Publication (Tentatively Vol.19, No. 1)

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.
3.5. CFP: AIAA Journal of Guidance, Control, and Dynamics
Contributed by: Panagiotis Tsiotras, tsiotras@gatech.edu

Call for Papers for AIAA Journal of Guidance, Control, and Dynamics
Special Issue on “Computational Guidance and Control”

A clear trend in the field of aerospace guidance and control has emerged in recent years in what we call “Computational Guidance and Control” (CG&C). In contrast to traditional guidance and control, CG&C has the following identifying trademarks:

1. Guidance and control laws and controllers of fixed structure are replaced by algorithms.
2. The generation of guidance and control commands relies extensively on onboard computation. The extensive onboard computation requirement is in fact the defining difference between CG&C and other branches of computational engineering and sciences.
3. The process of determining guidance and control commands may be model-based or data-based, and does not require significant pre-mission planning, gain tuning, or extensive offline design of nominal references.

Guidance and control technologies with these traits are critical for system autonomy and support of autonomous operations. One can point to fully numerical, iteration-based advanced (powered and unpowered) guidance algorithms for space transportation systems and hugely successful model predictive control methods as well known examples. CG&C allows more than ever before complex guidance and control tasks incorporating many state and control constraints to be performed, offering a great potential of significant increased capability with a simultaneous reduction in operational costs associated with guidance and control systems. However, CG&C is far from simply taking a guidance or control problem and solving it numerically onboard via brute force. Rather, the unique challenges of onboard applications place a premium on computational efficiency, reliability, accuracy, and robustness of the solution process. In many cases optimized solutions are also desired or even necessary. Consequently, the success of CG&C likely demands more up-front investment in formulating, modeling, and analyzing the problem. It often also necessitates the control designer to consider hardware constraints up front, during the controller design process. Novel exploitation of analysis results and features of a problem and innovative tailoring design of the algorithm are often times among the salient characteristics. Accordingly, the practitioner will frequently employ methods and take advantage of advances in system and control theory, computational mathematics, artificial intelligence, machine learning, embedded computing, and other disciplines of sciences and engineering.

This special issue on CG&C intends to bring recognition to this significant trend in aerospace guidance and control and afford it a proper descriptive term. Even with the great strides made in recent years in CG&C, much remains a work in progress. This special issue of the AIAA Journal of Guidance, Control,
and Dynamics (JGCD) will provide a focused forum to disseminate the latest research work in CG&C, and further stimulate interest in this area of great potential.

Original research papers that meet the afore-listed CG&C descriptions (with special consideration given to onboard applications) are sought in, but not exclusive to, the following topics:
Control (model predictive control, computational optimal control, control allocation, etc.); Guidance (all flight phases, powered or unpowered, space or atmospheric flight); Autonomous mission and trajectory planning and optimization; Modeling of system dynamics and problem formulations promoting computational benefits; Air traffic management applications (with focus on onboard applications); Embedded computation implementations for real-time guidance and control; CG&C verification and validation.

Please submit papers by 31 October, 2015, at https://mc.manuscriptcentral.com/aiaa-jgcd

Authors are reminded to make sure to select Special Issue “Computational Guidance and Control” during submission. Both Full-Length Papers and Engineering Notes are welcome. Engineering Notes are intended for disclosures of significant data or development of limited scope.

The Editors will decide whether a submitted manuscript is in scope for this special issue. If a manuscript is deemed not in scope for the special issue, the author will be notified and the manuscript will be considered by the JGCD as a regular submission.

For questions, please contact Prof. Ping Lu, Editor-in-Chief of JGCD (plu@iastate.edu), and Guest Editors Prof. Panagiotis Tsiotras (tsiotras@gatech.edu), and Prof. Mehran Mesbahi (mesbahi@uw.edu).

3.6. CFP: Control Engineering of China
Contributed by: Jun Fu, junfu@mit.edu

Call for Papers
Special Issue on “Control Systems Engineering”
http://www.kzgc.com.cn

Control systems contribute to every aspect of modern society. In our life control systems exist in almost everywhere such as toasters, VCRs and smart phones. In science and technology, control systems already have widespread applications, for example, steering ships, guiding missiles and driving driverless cars in the near future. In all the control systems, systems are the key platform where control should be put into. It is at the system level that control shows its values. Extracting and formulating control problems in the system is equally important if not more important than control algorithm design based on the formulated control problem. In the age of IoT (Internet of Things), a control system in industry is usually both “cyber” and “physical”. Control is only a small component within the cyber-physical systems and should be driven by the underlying systems. This special issue is designed to focus on “Control Systems Engineering” with a balanced emphasis on “control”, “systems”, and “engineering”. It is our hope that this special issue is a beginning to start to bring “systems” back into “control” and implement “control algorithms” into “engineering systems”.

Scope of this Special Issue
The focus will be on systems and the derived control problems and solutions. Topics of interest include, but are not limited to the following:
Process control systems; Integrated automation systems; Monitoring systems; Motion control systems; Computer control systems; Intelligent control systems; Energy systems.
The prospective contributions are expected to address the following basic “Control Systems Engineering” questions (as many as possible):
What is the real world need for such “controlled system”? What is the control system architecture? How
to address the controllability issues of such systems? What are the control objectives? What are the controller design challenges? What are the modeling efforts to meet the controller design challenges? What are controller design options? Why a specific controller is adopted? How many tuning knobs are left for site engineers and the tuning guideline? What should be aware of and what issues could be encountered during implementation? What should be aware of and what issues could be encountered during operation in terms of system performance? What issues could be caused during life-cycle? What should be avoided when knowledge/experience-based database is available? What should be considered in terms of system robustness when trying to optimize certain indices we care? How to make such control systems reliable in terms of external/internal disturbances? How to maximize the profits and at the same time minimize cost?

Guest Editors
Prof. Xia, Xiaohua, University of Pretoria, Republic of South Africa
Prof. Chen, YangQuan, University of California, Merced, USA

Managing Editors
Prof. Fu, Jun, Northeastern University, Shenyang, China
Prof. Lu, Shaowen, Northeastern University, Shenyang, China

Secretary
Dr. Wei, Cui, Northeastern University, Shenyang, China

Important Dates
Aug. 31, 2015, Submission Deadline
Nov. 10, 2015, Notification of Acceptance
Nov. 30, 2015, Final Manuscript Submission
Jan. 20, 2016, Expected Publication Date

Submission of Manuscript
Papers should be prepared in English or Chinese within 6-10 pages, and should be submitted on the journal website http://www.kzgc.com.cn and conform to the guidelines listed there. Manuscripts should be clearly stated in the cover letter as being submitted to the Special Issue on “Control Systems Engineering”. After submission, please forward the receipt of acknowledgement email to both xxia@up.ac.za (X. Xia) and ychen53@ucmerced.edu (Y. Chen).

4. Conferences

4.1. Smart Grid for Smart Cities Conference
Contributed by: Javad Lavaei, lavaei@ee.columbia.edu

SGSC 2015 (Smart Grid for Smart Cities)
The SGSC conference focuses on utilizing new ideas and technologies in the field of smart grid to improve the sustainability of our urban environment, quality of life and efficiency of urban infrastructure, operation, services and competitiveness, while meeting the needs of present and future generations with respect to economic, social and environmental aspects in smart cities.

This year, SGSC 2015 will be collocated with Smart City 360 Summit 2015 in Toronto, Canada, during October 13-16, and dedicated to the role of energy innovations in urban environment, and research and development on sustainable smart city ecosystems. Latest outcome of these enabling technologies will offer new opportunities for policy-makers, research institutes and businesses to learn, share, and collect experience
and best smart grid practices to plan and operate sustainable urban communities. Scientific results, design concepts, new solutions, new smart grid applications, and case studies will be presented.

Topics of interest include but are not limited to:
City wide Smart Grid Testbeds and Field-Trials; Smart Grid and Urban Transportation; Smart Grid and Urban Water and Waste Water Infrastructure; Smart Grid and Urban Communication Infrastructure; Smart Grid and Urban and Community Planning; Smart Grid and Urban Emergency and Disaster Recovery; Smart Grid and Security and Privacy Challenges; Renewable Power Generation in Urban Environments; Smart Grid Co-Simulation for Smart City Development.

Paper submission:
All submissions must describe original research. Manuscripts are limited to 6 pages and must adhere to the IEEE conference publication format (e.g., 10pt font, single spacing, double column) in US Letter size with all fonts embedded. Detailed instructions for manuscript preparation are available on conference website. All accepted papers will be published in a single Springer publication on Smart Cities.

Important Dates:
- Paper Submission Deadline: May 31, 2015
- Decision Notification: July 15, 2015
- Camera Ready Due: August 15, 2015

General Chair:
Deepa Kundur, University of Toronto, Canada

TPC Chairs:
Hamed Mohsenian-Rad (Lead), University of California at Riverside, USA; Yonghui Li, University of Sydney, Australia; Hao Liang, University of Alberta, Canada; Islam Safak Bayram, Qatar Environment and Energy Research Institute, Qatar; Javad Lavaei, Columbia University, USA; Chris Develder, Ghent University, Belgium; Jiming Chen, Zhejiang University, China; Chen-Ching Liu, Washington State University, USA.

4.2. International Conference on System Theory, Control and Computing
Contributed by: Sergiu Caraman, Sergiu.Caraman@ugal.ro

19th International Conference on System Theory, Control and Computing - ICSTCC 2015
October 14-16, 2015, Cheile Gradistei - Fundata Resort, Romania
Website: http://www.aie.ugal.ro/icstcc2015

ICSTCC 2015 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 2015 is technically co-sponsored by IEEE Control Systems Society.
The Proceedings of ICSTCC 2015 will be submitted for inclusion in IEEE Xplore Digital Library. The Proceedings will also be submitted for indexing in Thomson Reuters Conference Proceedings Citation Index (formerly ISI Proceedings).

ICSTCC 2015 location is Cheile Grădiștei - Fundata Resort. The resort offers beautiful panoramas for the Piatra Craiului mountains and Bucegi mountains, the freshness and the privacy make the complex to be a place full of beauty and peace.
Confirmed keynote speakers:
Ioan Dumitrache (Romania): “Bio-inspired Techniques for Autonomous Control Systems”
Visakan Kadirkamanathan (UK): “Spatio-Temporal Model Estimation and Identification - Applications in Engineering, Life and Social Sciences”
Markos Papageorgiou (Greece): “Freeway Traffic Control”
Olivier Sename (France): “The LPV approach: the key to controlling vehicle dynamics?”
Alain Vande Wouver (Belgium): “Modeling and control of SMB chromatographic separation plants”

Important dates:
- May 29, 2015: Initial paper submission - Extended deadline (Final deadline)
- July 1, 2015: Notification of acceptance
- August 1, 2015: Final submission 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#STCC15
For further information please contact the organizing committee at: icstcc2015@ugal.ro.

4.3. International Conference on Control, Automation and Systems
Contributed by: Jae Weon Choi, conference@icros.org

2015 15th International Conference on Control, Automation and Systems (ICCAS 2015)
October 13-16, 2015
Bexco, Busan, Korea
http://2015.iccas.org

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.

It is our pleasure to announce that a number of high-profile plenary speakers have confirmed their participation and will give their lectures at the conference:

- Karl Johansson, KTH Royal Institute of Technology, Sweden
- Pheng Shi, University of Adelaide, Australia
- Jay Farrell, University of California, Riverside, USA
- Yoshihioko Nakamura, University of Tokyo, Japan
- Sangbae Kim, Massachusetts Institute of Technology, USA
- David Boas, Harvard Medical School, USA
- Taek Lyul Song, Hanyang University, Korea

Important Dates
May 8, 2015: Submission of full papers (Extended!)
June 19, 2015: Notification of paper acceptance
July 17, 2015: Submission of final camera-ready papers
Organizing Chair: Myo Taeg Lim (Korea Univ., Korea)
Program Chair: Jae Weon Choi (Pusan Natl. Univ., Korea)

Busan, the venue, is famed as Northeast Asia’s perfect mix of natural beauty and modern infrastructure. With 3.6 million residents, Busan is Korea’s second largest city, and the world’s 5th busiest port, making it
4.4. IEEE Symposium on Adaptive Dynamic Programming and Reinforcement Learning

Contributed by: Lucian Busoniu, lucian@busoniu.net

2015 IEEE Symposium on Adaptive Dynamic Programming and Reinforcement Learning
http://adprl15.net
Part of IEEE Symposium Series on Computational Intelligence 2015
Cape Town, South Africa, 7-10 December 2015

Adaptive dynamic programming (ADP) and reinforcement learning (RL) are two related paradigms for solving decision making problems where a performance index must be optimized over time. ADP and RL methods are enjoying a growing popularity and success in applications, fueled by their ability to deal with complex problems, including features such as uncertainty, stochastic effects, and nonlinearity. ADP tackles these challenges by developing optimal control methods that adapt to uncertain systems over time. RL takes the perspective of an agent that optimizes its behavior by interacting with an initially unknown environment and learning from the feedback received. The ability to improve performance over time in uncertain or unknown environments has led to successful applications of ADP and RL in areas such as robotics, game playing, automotive engines, networks, logistics, etc.

The goal of the IEEE Symposium on ADPRL is to provide an outlet and a forum for interaction between researchers and practitioners in ADP and RL, in which the two fields are brought together and their connections are exploited. We equally welcome contributions from control theory, computer science, operations research, computational intelligence, neuroscience, as well as other novel perspectives on ADPRL. Original papers are sought on methods, analysis, applications, and overviews of ADPRL. We are interested in applications from engineering, artificial intelligence, economics, medicine, and other relevant fields.

Specific topics of interest include, but are not limited to:
- Convergence and performance analysis, RL and ADP-based control, Function approximation and value function representation, Complexity issues in RL and ADP, Policy gradient and actor-critic methods, Direct policy search, Planning and receding-horizon methods, Monte-Carlo tree search and other Monte-Carlo methods, Adaptive feature discovery, Parsimonious function representation, Statistical learning and PAC bounds for RL, Learning rules and architectures, Bandit techniques for exploration, Bayesian RL and exploration, Finite-sample analysis, Partially observable Markov decision processes, Neuroscience and biologically inspired control, ADP and RL for multiplayer games and multiagent systems, Distributed intelligent systems, Multi-level multi-objective optimization for ADPRL, Transfer learning, Applications of ADP and RL.

Paper Submission Procedure:
Papers should be prepared in the IEEE format and should have at most 8 pages. Accepted papers will be published in the SSCI proceedings and on IEEEXplore, http://ieeexplore.ieee.org/, conditioned on registering and presenting the paper at the conference. Submissions must contain original, high quality, not submitted or elsewhere published work.

Authors must submit their paper through the IEEE SSCI 2015 webpage http://ieeessci.org.za/

The call for papers as well as more detailed information can be retrieved from ADPRL 2015 webpage http://adprl15.net and from the main SSCI 2015 webpage http://ieeessci.org.za/

Please make sure you select:
“Adaptive Dynamic Programming and Reinforcement Learning” (ADPRL 2015) during the submission process

Organisers:
Madalina Drugan (Vrije Universiteit Brussel, Belgium) mdrugan@vub.ac.be
5. Workshops and Graduate Schools

5.1. Workshop on Next Generation Smart Grids: Power Electronics Based Power Systems

Contributed by: Qing-Chang Zhong, zhongqc@iit.edu

ACC Workshop on Next Generation Smart Grids: Power Electronics Based Power Systems
Hilton Palmer House, Chicago, IL
1:30pm - 5:30pm, Tuesday, June 30 2015,
Organizer: Qing-Chang Zhong
Max McGraw Endowed Chair Professor in Energy and Power Engineering, Illinois Institute of Technology, Chicago, USA

Power systems are going through a paradigm change from centralized generation to distributed generation and further onto smart grids. In order to make power systems more secure, more efficient, more resilient to threats and friendlier to the environment, a huge number of heterogeneous players, including renewable energy sources, electric vehicles, and storage systems etc. on the supply side and different types of smart loads on the demand side, are being connected to power systems. Because of the heterogeneous nature and the huge number of players involved, it is a great challenge for control and systems theorists to find a control architecture so that all heterogeneous players could work together to maintain system stability and achieve desired performance.

In this workshop, the fundamental challenge behind the scene during the paradigm change is identified: that is future power systems will be power electronics based, instead of electrical machines based, with a huge number of heterogeneous players. This makes it less of a power problem but more of a systems problem. Moreover, an autonomous scalable distributed control architecture is presented from the systems perspective. All the heterogeneous players, including new add-ons of generation, such as wind farms, solar farms, EVs, energy storage systems, and the majority of loads, can be controlled to behave like virtual synchronous machines so that all behave homogeneously, in terms of the underlying mathematical models. This unifies the interface of all these players with the grid and facilitates the reduction of large-scale power systems into small-scale models and the analysis of power systems. All the distributed players (agents) communicate with each other through the dynamics of power systems, instead of an extra communication network, to realize the same goal with independent individual actions. Because the low-level control does no longer require the support of an extra communication network, this paradigm is distinct from the current paradigm of smart grids and hence sets the architecture for the next-generation smart grids. It is able to considerably enhance the operability, stability, scalability, reliability and security of next-generation smart grids.

Two technical routes to implement the architecture will be presented. One is based on the synchronverter technology that takes into account the internal dynamics of synchronous machines and the other is based on the robust droop control strategy that mimics the external function of synchronous machines. Both technical routes embed the synchronisation function into the controller of the power electronic converters and hence the dedicated synchronization unit, e.g. PLL, that is deemed to be a must-have component for grid-tied power electronic converters can be removed.

Illinois Institute of Technology (IIT) has become a world leader in the smart grid technological revolution by building the first ever fully-functional 12 MW IIT Microgrid and now developing the 10 MW Brownsville Community Microgrid. This workshop will also give an overview about these developments.

Registration: http://acc2015.a2c2.org/registration.html

5.2. Workshop on Innovative Sensing in Robotics, with Focus on Neuromorphic Sensors

Contributed by: Andrea Censi, censi@mit.edu
ICRA 2015 Workshop on Innovative Sensing in Robotics, with Focus on Neuromorphic Sensors
May 30, 2015, morning
http://innovative-sensing.mit.edu

This workshop covers innovative sensing devices, with particular focus on neuromorphic vision sensors, as well as the inference, learning, and control methods needed to take advantage of that hardware.

The invited talks provide a tutorial on:
neuromorphic vision sensors; spike-based and AER-based algorithms; neuromorphic computation substrates (including memristors); neurobiology of insects’ visual circuits

The speakers are:
* Jörg Conradt (TUM)
* Christian Brandli (IniLabs)
* Andrew Straw (IMP, Vienna)
* Mirko Prezioso (UCSB)
* Deepak Khosla (HRL Laboratories)

Contributed talks: we are looking forward to receiving any in-topic submissions including late-blooming results.
Please submit a 1-page abstract, a full paper, or directly a set of slides to the organizers.

Deadline: May 7
Notification: May 14

Organizers:
* Andrea Censi (MIT) censi@mit.edu
* Davide Scaramuzza (University of Zurich) sdavide@ifi.uzh.ch

ICRA 2015 Workshop on Sensorimotor Learning
Contributed by: Andrea Censi, censi@mit.edu

5.3. Workshop on Sensorimotor Learning
ICRA 2015 Workshop on Sensorimotor Learning
Seattle WA, USA, May 26, 2015
http://sensorimotor-learning.mit.edu/

The workshop is dedicated to recent advances in sensorimotor learning and control for robotics. The development of robots that are able to learn models of themselves and their environments has long been a goal in the robotics, machine learning, control, and AI communities. However, most current approaches to robot sensing and control are based on strong prior assumptions, which make them brittle to unmodeled dynamics and unexpected changes in the robot body or the environment. Advances in machine learning, including “deep learning”, nonparametric modeling and inference, and reinforcement learning have recently experienced success in deriving models and policies directly from data.

For example, in computer vision, deep learning methods, which learn “everything” from data, including low-level features and intermediate representations, have surpassed traditional approaches in accuracy on problems such as object detection and classification.

However, incorporating modern machine learning techniques into real-world sensorimotor systems is still challenging. Most real-world sensorimotor control problems are situated in continuous or high-dimensional environments and require real-time interaction, which can be problematic for classical learning techniques. In order to overcome these difficulties, the modeling, learning, and planning components of a fully adaptive decision making system may need significant modifications.

This workshop’s goal is to foster discussion on these issues.
We would like the workshop to be as inclusive as possible and encourage paper submissions and participation from a wide range of research related to sensorimotor learning, including control, machine learning and computational biology.

High-level questions to be addressed include, but are not limited to:
Is it possible to learn the “torque-to-pixels” high-dimensional sensorimotor dynamics of robots or animals directly from the raw data? If not, what prior knowledge is necessary? What are the challenges for high-dimensional cross-modal sensorimotor learning in robotics? Can cross-model models be learned independently of a task? How can we transfer biological insights to robotic systems (and vice versa)? Do engineering insights in machine learning and robotics have a biological explanation? How can one balance the representation accuracy and the speed of inference? How much data is needed? How can online machine learning be used in high-frequency control of real-world systems? How can successful supervised or unsupervised learning techniques be used in sensorimotor control problems? How can prior knowledge, including expert knowledge, user demonstrations, or distributional assumptions be incorporated into the learning/planning framework?

Invited talks:
Ben Kuipers, University of Michigan, USA
Russ Salakhutdinov, University of Toronto, Canada
Sergey Levine, UC Berkeley
Marianna Madry, Royal Institute of Technology (KTH), Sweden

Contributed talks:
See instructions at http://sensorimotor-learning.mit.edu/callforpapers/

Organizers:
* Byron Boots (GATech) - bboots@cc.gatech.edu
* Andrea Censi (MIT) - censi@mit.edu

Invited talks:
Ben Kuipers, University of Michigan, USA
Russ Salakhutdinov, University of Toronto, Canada
Sergey Levine, UC Berkeley
Marianna Madry, Royal Institute of Technology (KTH), Sweden

Contributed talks:
See instructions at http://sensorimotor-learning.mit.edu/callforpapers/

Organizers:
* Byron Boots (GATech) - bboots@cc.gatech.edu
* Andrea Censi (MIT) - censi@mit.edu

5.4. Summer School on Positive invariance as a set-theoretic tool for fault diagnosis and fault tolerant control
Contributed by: Didier Theilliol, didier.theilliol@univ-lorraine.fr

Summer School on “Positive invariance as a set-theoretic tool for fault diagnosis and fault tolerant control”
Location: Grenoble (France) - GIPSA-Lab
Date: 7 to 11 September 2015
Organizers: J.J. Martinez (GIPSA-Lab - Grenoble), S. Olaru (CentraleSupÃ©lec - Gif) and D. Theilliol (CRAN, U. Lorraine),
Website: http://www.gipsa-lab.fr/summerschool/Invariant-sets-for-FTC/

Context and scope:
The development of set-theoretic methods for the characterization of invariant sets has allowed application of the associated theoretical concepts in various domains, such as fault isolation, robust control and predictive control. The aim of this summer school is to present in an accessible manner novel trends in fault diagnosis and fault tolerant control. As a central concept, the positive invariance of sets characterizing the nominal and the faulty behavior will be shown to present a particular interest in the last decade FDI and FTC developments. Topics approached by this summer school cover theory of invariant sets, stability of switched systems, and methods for stabilizing dynamical systems under fault occurrence. The use of these notions for fault diagnosis, fault tolerant control design and the associated numerical tools will be presented in a gradual and pedagogical manner during this 5-day summer school.

The school is intended for early stage researchers (Master, PhD, post-doc), engineers and scientists from academia and industry. Basic knowledge in automatic control and mathematical system theory will be useful.
Speakers: F. Blanchini (Italy); J. De Dona (Australia); J.J. Martinez (Fr); S. Olaru (Fr); V. Puig (Spain); V. Reppa(Fr); O. Sename(Fr); F. Stoican (Romania); M. Seron (Australia); D. Theilliol (Fr)

Registration:
The registration fee, which includes accommodation for 5 nights, lunches, social dinner, access to the lectures, coffee breaks, and school material is

- for academic participants 475 Euros
- for students (Master/Phd) 225 Euros
- for CNRS participants: free via the internal registration scheme
- (for non-academic participants please contact the organizers)

Early registrations are encouraged due to the fact that the number of participants is limited to 35.

For further information, please contact John-Jairo Martinez-Molina
john-jairo.martinez-molina@gipsa-lab.grenoble-inp.fr

6. Positions

6.1. PhD: University of Pittsburgh, USA
Contributed by: Nitin Sharma, nis62@pitt.edu

A PhD position is available in the Neuromuscular Control and Robotics laboratory at the University of Pittsburgh. The research will be to design controllers for a hybrid exoskeleton that use active electric motor-drives and functional electrical stimulation for gait restoration. The candidate should have background in either/ both robust adaptive nonlinear control or nonlinear model predictive control. The candidate should have strong programming skills in MATLAB, C++.

Preferred Qualifications:
- Masters of Science in Control theory or robotics
- Mathematical skills for control design and stability analysis
- Experience in modeling and simulating human gait will be an added advantage

Website: http://engineering.pitt.edu/Labs/SHARMA/
Interested candidates can contact: Dr. Nitin Sharma via nis62@pitt.edu.
Candidates should send their CV and/or a relevant journal paper showing background in the aforementioned areas.

6.2. PhD: Ghent University Global Campus, South Korea
Contributed by: Shodhan Rao, Shodhan.Rao@ghent.ac.kr

PhD position in systems biology: Ghent University Global Campus, Incheon, South Korea

There is a vacancy for a PhD position in Applied Mathematics in Ghent University Global Campus (GUGC), Incheon, South Korea (www.ghent.ac.kr). Ghent University Global Campus is the first campus of Ghent University outside Belgium. This brand new campus is situated in Incheon, South-Korea. Ghent University Global Campus integrates educational and research facilities in a single building. Ghent University has the ambition to organize a first-rate, truly European education in Asia and to develop excellent research in the fields of Molecular biotechnology, environmental and food technology. Its programs are accredited in Flanders and in Korea.

While the prospective candidate will work in GUGC, Korea, the eventual PhD degree of the candidate will be from Ghent University, Belgium. The research focus of the student is expected to be in the area of mathematical/systems biology particularly in the area of discretization of reaction-diffusion biochemical networks. The candidate will have teaching duties as well. Since Ghent University is building its campus from scratch in Korea, the candidate will need to assist his/her supervisor in teaching undergraduate mathematics courses. The salary of the PhD candidate will
be at the level of the standard salary of a PhD candidate of Ghent University main campus in Belgium. While the candidate will mainly work under the supervision of Prof. Shodhan Rao at GUGC, he/she will be co-supervised also by Prof. Bernard de Baets from the department of mathematical modelling, statistics and bioinformatics (Biomath) at Ghent University. The candidate will therefore have the opportunity to spend at least one month every summer in Ghent University during the course of his/her PhD.

The prospective candidate is expected to have a very strong background in mathematics. Knowledge of biology or chemistry at undergraduate level is preferable although not mandatory. The prospective candidate is expected to be highly motivated to conduct research in the area of mathematical biology and should have an excellent academic track record. People from varying backgrounds including those with a masters degree in Mathematics, Systems and Control, Chemistry, Chemical Engineering or Biotechnology, and with a strong undergraduate mathematical training are encouraged to apply. The expected starting date of the PhD candidate is in August/September 2015. Interested candidates can email their CV to shodhan.rao@ghent.ac.kr before 31st May 2015.

6.3. PhD: Royal Institute of Technology, Sweden
Contributed by: Jana Tumova, tumova@kth.se

PhD Student Position in Formal Methods-Based Planning at Royal Institute of Technology (KTH)
The Automatic Control Department at KTH invites applications for a Ph.D. position in formal methods-based planning. The successful candidate will join a research group that is focusing on new design methodologies for automated planning and control synthesis under complex system specifications. Applications of the research include, but are not limited to autonomous robot action and motion planning, or multi-agent systems control and coordination.

KTH offers an attractive working environment, generous remuneration, as well as other employment benefits. As a PhD student at KTH you have many opportunities to participate at conferences, projects and other relevant events which will extend your professional network and benefit your future career.

The successful applicant is expected to hold or to be about to receive an M.Sc. degree in one of the following or related disciplines: Computer Science, Computer Engineering, Applied Mathematics, or similar, preferably with a focus in Formal Methods for Verification or Synthesis, and/or Artificial Intelligence.

The successful applicant should have an outstanding academic track record, and well developed analytical and problem solving skills. We are looking for a strongly motivated person, who is able to work independently. Good command of English orally and in writing is required to publish and present results at international conferences and in international journals. The evaluation will be based on how well the applicant fulfills the above qualifications.

For further information, please see:
Contact: Associate Prof. Dimos Dimarogonas, dimos@kth.se, http://people.kth.se/ dimos/
Dr. Jana Tumova, , tumova@kth.se, http://people.kth.se/ tumova/

6.4. PhD: Università di Napoli Parthenope, Italy
Contributed by: Marco Ariola, ariola@uniparthenope.it

The PhD School of Information Engineering at the Università di Napoli Parthenope, Napoli, Italy, offers various PhD positions in control engineering and mathematical control theory.

Besides scholarship, help for housing is provided. Students will also get the opportunity of spending research periods outside Italy during the program with an extra funding.

The Course has a duration of three years starting from November 2015.

The selection is based on the evaluation of the CV, publications and reference letters. The best candidates will be invited to an oral discussion.
Perspective candidates are encouraged to contact the Coordinator of the PhD board, Prof. Marco Ariola sending an e-mail to ariola@uniparthenope.it

6.5. PhD: INRIA Grenoble, France
Contributed by: Federica Garin, federica.garin@inria.fr

Ph.D. INRIA Grenoble, France
Cyber-Physical Systems: a control-theoretic approach to privacy and security.
Supervisors:
Alain Kibangou and Federica Garin.

Context:
NeCS (http://necs.inrialpes.fr) is a joint INRIA/CNRS research team focusing on Networked Control Systems. The team is bi-located at INRIA Grenoble Rhône-Alpes (http://www.inria.fr/en/centre/grenoble) and at GIPSA-lab at Grenoble’s campus (http://www.gipsa-lab.inpg.fr).

Topic: Cyber-Physical Systems (CPSs) are systems in which physical processes are tightly intertwined with networked computing, e.g., sensor networks, industrial automation, transportation networks, power generation and distribution networks. CPSs are subject to crucial privacy and security issues, and control theory must complement computer science, since it allows to take into account the dynamics of the underlying physical system. In particular, this thesis aims tackling such issues with the study of observability of large-scale sparsely-interconnected systems, including the use of techniques from compressive sensing.

For a more detailed description, see http://necs.inrialpes.fr/media/documents/openings/PhDs/2015-CyberPhysicalSystems-PhD.pdf

Application conditions: Applicants should have a master (or equivalent) degree. A strong background in automatic control and systems theory is required; notions of graph theory and/or compressive sensing can be a plus.
Contact: federica.garin@inria.fr Applications should include CV; list of exams with grades; recommendation letter(s)

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

PhD positions: “Distributed optimization in cyber-physical networks”

Four PhD positions will be available starting Fall 2015 within the ERC Starting Grant project OPT4SMART. Research will be conducted at the Università del Salento (Lecce, Italy), under the supervision of Prof. Giuseppe Notarstefano.

About the position:
I am looking for motivated, talented graduate students from all over the world, who wish to:
- undertake PhD research at the cutting edge of optimization and control in cyber-physical networks
- contribute to the startup of an excellent, international new research group
- study in a beautiful Italian city with a great quality of life.

The appointment will be for 3 years with the possibility to extend it up to 2 more years (at PhD or Postdoc level). Within the PhD program, the PhD student will be required to spend periods abroad to improve her/his education and to foster ongoing collaborations with world-class, international research groups.

About ERC Starting Grants (http://erc.europa.eu):
ERC Starting Grants are designed to support excellent Principal Investigators at the career stage at which they are starting their own independent research team or programme in Europe. The scheme targets promising researchers who have the proven potential of becoming independent research leaders. It will support the creation of excellent new research teams.
About OPT4SMART (Distributed optimization methods in smart cyber-physical networks)

Billions of smart communicating devices with their sensing, computing and control capabilities promise to make our cities, transportation systems, factories and living environments more intelligent, energy-efficient, safe and secure. This extremely complex system is giving rise to a novel peer-to-peer distributed computational model in which a service is built-up cooperatively by peers, rather than by a unique provider that knows and owns all data. The interdisciplinary “Optimization Community” is facing this revolution sharing a common need: to find new theories, methodologies and tools to optimize over this complex network system. With this in mind, OPT4SMART has a twofold objective. First, to provide a comprehensive theoretical framework to solve distributed optimization problems over peer-to-peer networks. Second, to develop effective numerical tools, based on this framework, to solve estimation, learning, decision and control problems in cyber-physical networks. This twofold objective will be pursued by means of interdisciplinary methodologies arising from a synergic combination of optimization, controls, and graph theories.

About Lecce: University and city: The Università del Salento is ranked among the first 300 top universities worldwide (Times Higher Ed. 2014-15), the 5th Italian one. It is located at Lecce, a Baroque city in the South-East of Italy. Lecce is part of the Puglia region, known for its landscapes, traditions and culture. For a 36-hours tour of Lecce you can visit [www.nytimes.com/2013/08/11/travel/36-hours-in-lecce-italy.html?r=0](http://www.nytimes.com/2013/08/11/travel/36-hours-in-lecce-italy.html?r=0)

Who should apply: The desired candidate has

- a master degree in Engineering (preferably Control, Electrical, Computer, Mechanical or Aerospace Engineering), (Applied) Mathematics or related fields
- excellent analytical skills
- a strong mathematical background preferably including optimization and/or systems and control theory
- strong interest in optimization and in at least one of the following areas: Control theory, Estimation, Machine Learning
- proficiency in oral and written English

Expression of interest: The official call will open in the next months. If interested in the position you should send an email to giuseppe.notarstefano@unisalento.it with subject “OPT4SMART PhD-student ‘Your last name’ ” including:

- a one page cover letter describing your research interests and why you are the right person for this position
- a detailed CV
- the list of Master and Bachelor courses with corresponding grades
- summary (or a copy) of your Master thesis
- name and email of at least two referees

### 6.7. PhD: KU Leuven, Belgium

Contributed by: Wim Michiels, Wim.Michiels@cs.kuleuven.be

PhD position “Methods for robust control and optimization of large-scale systems, with applications to engineering and computational electronics”

Dynamical systems from engineering, physics and the life sciences are almost exclusively infinite-dimensional, due to a spatial or temporal distribution of the state variables. This project concerns linear infinite dimensional systems, which are in the frequency domain described by eigenvalue problems exhibiting non-linearity in the eigenvalue parameter. The Scientific Computing group of KU Leuven has gained key expertise on solving nonlinear eigenvalue problems, in particular eigenvalue problems inferred from dynamical control systems with time-delays. The aim of the PhD research is to advance the state-of-the-art in methods for solving associated eigenvalue optimization problems. These optimization problems stem from the robustness analysis of uncertain systems and from the synthesis of controller or design parameters.

The methods and algorithms are validated on real-life applications from computational electronics, civil engineering and mechanical engineering, through ongoing collaborations with application oriented research groups.
Keywords: dynamical systems, control and optimization, infinite-dimensional systems, partial and delay differential equations, numerical linear algebra

Profile:
An ideal candidate has a master degree in engineering (control, mechanical, electrical) or computational and applied mathematics, a strong background in control and dynamical systems, numerical optimization, programming (MATLAB), experience with algorithm development, and enthusiasm for the project. Proficiency in English is a requirement.

Besides a competitive salary and mobility allowance we offer a stimulating research environment, with a lot of attention paid to personal career development, within the Scientific Computing group of KU Leuven (http://twr.cs.kuleuven.be), the KU Leuven Optimization in Engineering Center OPTEC (http://set.kuleuven.be/optec/), and the national network DYSCO (http://sites.uclouvain.be/dysco/)

How to apply: Send an electronic application (CV, motivation, references) to Prof. Wim Michiels (Wim.Michiels@cs.kuleuven.be) with subject “vac-robust”.

6.8. PhD/Post-Doc: Clemson University, USA
Contributed by: Yongqiang Wang, yongqiw@clemson.edu

PhD/Post-Doc: Clemson University, USA
Applications are invited for doctoral and/or post-doctoral positions in the general area of dynamics and control of network systems. Competitive financial supports will be provided. Students with a strong background in systems and control and a clear interest in the general area of network systems are encouraged to apply. Specific areas of research include: analysis of dynamical engineered or biochemical networks - hybrid systems - oscillator networks or synchronization.

Clemson University is ranked 20st among national public universities by U.S. News & World Report (tie with Purdue University-West Lafayette and University of Maryland-College Park). It is described by students and faculty as an inclusive, student-centered community characterized by high academic standards, a culture of collaboration, school spirit, and a competitive drive to excel.

Clemson is located on Lake Hartwell in the foothills of the Blue Ridge Mountains, an area of outstanding natural beauty and temperate climate. It is 30 miles from Greenville, SC, a vibrant and growing city which provides many opportunities for entertainment, culture, and fine dining. Strong mathematical and analytic skills are desired.

Candidates with a demonstrated track record in one or more of the previous area(s) will be preferred. Interested students should send a short resume, along with representative relevant publications, if applicable, to yongqiw@clemson.edu

6.9. PhD/Post-Doc: Technische Universitaet Chemnitz, Germany
Contributed by: Stefan Streif, stefan.streif@tu-ilmenau.de

PhD or PostDoc position at the Technische Universitaet Chemnitz, Germany within the newly established Chair for Control Theory and System Dynamics.

Research topics:
Development of robust and adaptive methods for control and diagnosis of uncertain nonlinear systems using optimization-based approaches.

Essential responsibilities:
* working actively and independently in new research areas
* publishing research results in high-quality journals and on international conferences
* participation in teaching
* supervision of undergraduate students
Qualifications and requirements:
* solid and strong knowledge and mathematical background in advanced systems and control theory, uncertainty
  analysis, stochastic processes and optimization
* above-average qualification or degree (PhD or M.S.) in electrical & computer or mechanical engineering, math-
 ematics, or related disciplines
* strong analytic and good programming skills
* good communication skills in oral and written English.

Employment:
This full-time position is initially for one year with the option to renew the contract for at least two more years. The
position is open from June 2015 until filled.

Application:
Please contact Prof. Dr.Ing. Stefan Streif (Stefan.Streif@TU-Ilmenau.de) as soon as possible. Application documents
(as a single PDF) should include a cover letter, CV, relevant certificates and contact details of three references.
Application deadline: 30 June 2015

6.10. PhD/Post-Doc: Norwegian University of Science and Technology, Norway
Contributed by: Johannes Jäschke, jaschke@ntnu.no

Postdoc/PhD Position in Fast Hierarchical Economic MPC

The Department of Chemical Engineering at NTNU offers an exciting full-time research position (Postdoc or PhD)
in the area of fast hierarchical model predictive control.

About the research:
This project addresses important theoretical aspects of hierarchical economic model predictive control. The planned
research ranges over two areas:

1. Fast numerical optimization algorithms
   This subproject aims at studying and improving a fast sensitivity-based path-following algorithm that was
developed in collaboration with Professor Biegler at Carnegie Mellon University.
2. Optimal design of a hierarchical economic model predictive control system
   This subproject studies methods for optimally designing the layers in a hierarchical control system for dynamic
   optimization.

For more information about the research contact Associate Professor Johannes Jäschke +47-735-93691, email: jaschke@ntnu.no.
We offer:
Informal and friendly work place with dedicated colleagues; Possibility for extended research visit at Carnegie Mellon
University, USA; Family-friendly work conditions; Excellent opportunities for outdoor activities; Competitive salary

Requirements for candidates applying for a postdoc position:
A PhD in an optimization-related field will have to be received before 30. August 2015. One or preferably both of
the following are required: Documented experience in the study of SQP and Newton methods for solving parametric
NLP and/or Documented experience with theoretical aspects of model predictive control.

Experience in mathematical modelling, optimization and control of process systems is of advantage. Applicants for
a postdoc position are requested to enclose a 2-page research proposal draft.

Requirements for candidates applying for a PhD fellowship:
A Master’s degree in an optimization-related engineering field is required. We are looking for candidates with a strong
background in nonlinear programming techniques (SQP, Interior point methods) and nonlinear model predictive
control.
The appointment has a duration of 3 years and is financed by the Norwegian Research Council. Application deadline 17.5.2015.

Please read the full job announcement, and apply here: http://www.jobbnorge.no/ledige-stillinger/stilling/113110/1-postdoc-phd-position-in-fast-hierarchical-economic-mpc

6.11. PhD/Post-Doc: Lehigh University, USA
Contributed by: Nader Motee, motee@lehigh.edu

Ph.D. Research Assistantship and Postdoctoral Positions in Distributed Control and Dynamical Networks

Interested students and recently graduated PhD students are encouraged to apply for our open positions in Distributed Control and Dynamical Systems (DCDS) Laboratory in the Department of Mechanical Engineering and Mechanics at Lehigh University. There are several open positions for Summer 2015, Fall 2015, and Spring 2016 in the form of Research Assistants and Postdoctoral Scholars. For more information about our group and current research activities, please visit our website at http://www.dcds-lab.com

For Postdoctoral Positions: Strong background in probability theory, stochastic dynamical systems, and graph theory are desirable. Candidate with Applied/Pure Mathematical background are strongly encouraged to apply.

For PhD Positions: Students with strong backgrounds in Control Systems/Optimization/Applied Math or other related areas, are strongly encouraged to apply.

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

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

6.12. PhD/Post-Doc: Leuphana University of Lueneburg, Germany
Contributed by: Paolo Mercorelli, mercorelli@uni.leuphana.de

The Institute of Product and Process Innovation (PPI) http://www.leuphana.de/institute/ppi/personen.html of Leuphana University of Lueneburg is available to host through the Minerva Fellowship Program PhD Positions and Post Docs in the field of Control Systems, System Theory, Signal Processing. The Minerva Fellowship Program enables German and Israeli scientists and researchers to spend longer-term research residencies at institutions in the host country from six to thirty-six months (for graduates) or from six to twenty-four months (for post docs). To date, more than 1,500 German and Israeli scientists and researchers have been awarded a Minerva Fellowship. Some fifty scientists receive fellowships each year. Young scientists and researchers (post docs) are given priority in the selection process. Scientists with tenure are not eligible to apply.

For more information about the program: http://www.minerva.mpg.de/fellowships/fellowships.html

The PPI is a small department and offers a highly engaged and motivated personal and futuristic projects in the field of Smart Greed Control, Atomic Force Microscopy Control, Automotive Control, Biomedical Control and Robotics. For the preselection of the candidates to be hosted in PPI please send your resume and your research proposal which should not exceed five pages (References are not included in these five pages.) per e-mail not later than the 10th June to Paolo Mercorelli (mercorelli@uni.leuphana.de).
6.13. Post-Doc: Texas A&M University, Qatar
Contributed by: Behrouz Ebrahimi, bebrahimi@uh.edu

We are seeking Postdoctoral Associates to fill research positions in
- Modeling and Controls
- Modeling, Control and Optimization in Subsea Engineering
- Biomedical Engineering
at Texas A&M University at Qatar (TAMU-Q), Doha, Qatar.

* Modeling and Controls
If your field of expertise and interest is on the areas of modeling and control, you are encouraged to apply. The applications include development of new techniques in internal combustion engine modeling and control.

* Modeling, Control and Optimization in Subsea Engineering
If your field of expertise and interest is in the areas of modeling, control and optimization, you are encouraged to apply. The applications include development of new techniques in Subsea Engineering.

* Biomedical Engineering
If your field of expertise and interest is in the areas of modeling, controls, and biomedical engineering, you are encouraged to apply. The applications include development of new techniques in exoskeleton based stroke rehabilitation.

Excellent oral and written communication skills and the ability to prepare internal and external documents and presentations are required for all three positions.

TAMU-Q offers excellent benefits and a number of special items. The package includes furnished accommodations in Doha at no cost, a local transportation allowance, and dependent education allowance. At the moment, there is no income tax in Qatar.

TAMU-Q (see: www.qatar.tamu.edu) is located in Education City, a 2,500 acre campus, only 15 km from Doha. Major companies are establishing facilities in Education City and nearby. Education City is the location of a number of premier institutions which are engaged in activities of advanced scientific and engineering research and applications.

Review of applications will begin immediately, and continue until the positions are filled. Candidates who would like to apply need to submit their curriculum vita to:
Dr. Reza Tafreshi
Mechanical Engineering Program Texas A&M University at Qatar Education City
P.O. Box 23874, Doha, Qatar phone: 974-4423-0237
email: reza.tafreshi@qatar.tamu.edu

6.14. Post-Doc: George Washington University, USA
Contributed by: Taeyoung Lee, tylee@gwu.edu

Post-Doc: Autonomous Aerial Exploration
George Washington University, Washington DC, USA

Flight Dynamics and Control Lab at the Department of Mechanical and Aerospace Engineering, George Washington University (http://fdcl.seas.gwu.edu) invites applications for one post-doctoral scientist position.

The main objective of the research is to develop motion planning and control of multiple aerial vehicles exploring an unknown area autonomously and cooperatively. The desired paths of the vehicles should be developed in an optimal fashion to maximize the information gain from the sensor measurements on those paths, while explicitly considering the sensor limitations such as the maximum sensing range and viewing angle. These will be illustrated by both numerical simulations and indoor flight tests with multirotor unmanned aerial vehicles.

Required qualification
- Ph. D in control system engineering, computer science or relevant fields
- Backgrounds in control, estimation, motion planning, mapping, and SLAM
- Experiences in flight experiments of multirotor UAV
- Expertise in C/C++, ROS, and multithread programming

The appointment will be for a period of 1 year, starting no later than Fall 2015, and it will be extended for another year based on the evaluations.

The application should consist of:
- A motivation letter stating why the applicant is qualified to the research
- A complete CV with a full publication list
- List of three references

These documents should be combined into a single pdf file and sent to Prof. Taeyoung Lee (tylee@gwu.edu) with a subject “Post-doc application of Dr. <Name>”

6.15. Post-Doc: Nanyang Technological University, Singapore
Contributed by: Erdal Kayacan, erdal@ntu.edu.sg

Post-doc position in Robotic Vision in the ST Engineering-NTU Corporate Laboratory (Nanyang Technological University, Singapore)

The ST Engineering-NTU Corporate Laboratory (http://bit.ly/NTUstengg) has two open post-doc positions in the field of robotic surveillance focusing on computer vision techniques for a joint project between NTU and ST Engineering. We seek to expand and improve the perceptual capabilities of autonomous aerial vehicles.

This project aims to solve the precise landing problem of a VTOL UAV by using a cost-effective hybrid method consisting of local positioning systems (vision based sensors) and global positioning systems. In this project, the advantages of local and global positioning systems will be combined to realize one specific goal: precise landing.

Requirements:
Prospective candidates should hold a Ph.D. degree in electrical engineering, aerospace engineering, mechanical engineering, automatic control, mechatronics, applied mathematics, or other related disciplines. Moreover, he/she should have a strong publication record in the fields related to robotic vision and image processing.

Additional desired skills:
- 1+ yr experience applying computer vision, mathematics, C/C++ programming, and abstract thinking
- Experience with computer vision: object recognition, segmentation, and tracking
- Programming experience in real world systems

The contract is for one year (extendable to two years), and the salaries are competitive and are determined according to the successful applicant’s accomplishments, experience and qualifications. Singapore has low income tax and a postdoc is likely to pay a variable income tax of a maximum of 15% (see http://www.iras.gov.sg/irasHome/page04.aspx?id=1190).

The application should consist of:
- One A4 page motivation letter (explaining the reason that you are interested in joining this project and NTU),
- A CV with a full publication list,
- The contact details of three referees.

These documents must be compiled as a single pdf file, and named as “<Name>,<Surname>.pdf”. Then, the single file should be sent to “erdal@ntu.edu.sg” with a subject line of “Post-doc application”

Deadline: The deadline for the applications is 10th of May 2015.
Starting Date: 1st of July 2015 (some flexibility is possible)

We regret that only shortlisted candidates will be notified.

For further information, feel free to contact:
Erdal Kayacan PhD— Assistant Professor School of Mechanical and Aerospace Eng. Nanyang Technological University
Email: erdal@ntu.edu.sg homepage: http://www.erdalkayacan.com

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6.16. Research Associate: University of Paderborn, Germany

Contributed by: Daniel Quevedo, daniel.quevedo@upb.de

The Automatic Control Group (Prof. Daniel Quevedo) in the Department of Electrical Engineering at the University of Paderborn is seeking a Research Associate (Wissenschaftliche/r Mitarbeiter/in)

This is a full-time position, initially limited to two years, with the possibility of further extensions. The position is available immediately and may be filled either by a doctoral student or a Postdoc.

The candidate will be actively involved in research projects on networked estimation and control and also support some teaching activities.

Applicants must have received a Master’s degree or a doctoral degree in electrical engineering or a related field (such as mathematics or mechanical engineering). Postdoctoral applicants must have a proven capacity for high quality research and an excellent international publication record. Fluency in English is required, knowledge of German is an advantage.

We offer a stimulating work environment in an international team and an attractive remuneration package according to pay scale TV-L EG 13 of the German public service, commensurate with experience and qualifications, see: http://www.lbv.nrw.de/beztab/entgelttabellen_2014/entgelttab.php

Applications from women are particularly welcome and, in case of equal qualifications and experience, will receive preferential treatment according to state law (LGG). Qualified disabled people (in the sense of the German social law SGB IX) are also encouraged to apply.

Please send your application (including a cover letter, your CV, list of publications, and contact details of at least two referees) with reference 2223 to Ines Kaiser, ines.kaiser@upb.de by 31.05.2015.

For further information, see http://www.uni-paderborn.de/fileadmin/zv/4-4/stellenangebote/KZif2223.pdf

6.17. Faculty: Harbin Institute of Technology, China

Contributed by: Ms. Zhao, scc.hitsz@gmail.com

Faculty Positions in Systems and Control

Organization/Institution: Harbin Institute of Technology, Shenzhen Graduate School, Shenzhen, China

Department: School of Mechanical Engineering and Automation

The Division of Control and Mechatronics Engineering at Harbin Institute of Technology, Shenzhen Graduate School (HITSGS) invites applications for several faculty positions at all ranks. We are seeking candidates with excellent credentials in the areas of systems and control, wind energy, power systems and smart grids. Applicants must have a Ph.D. or equivalent in electrical, mechanical and power systems engineering and need to show strong research record and potential. Successful candidates will be received a joint appointment in the Center of Systems and Control. The Division currently has 11 full-time faculty members, and is expected to grow to 20 faculties in the next few years.

HITSZ offers a competitive salary and the salary levels at HITSG for these positions are substantially higher than those provided by most universities in China, with full professor in the range of RMB 170K to 230K per year, associate professor in the range of RMB130K to 160K per year, and assistant professor in the range of RMB 90K to 110K per year. Bonus is a plus for all levels, subject to faculty’s performance.

Interested candidates can send detailed CV, list of publications, statement of research (no more than 3 pages), teaching interests (no more than 2 pages), and a cover letter including contact information of three references to:

Ms. Zhao
School of Mechanical Engineering and Automation
HIT Campus Shenzhen University Town
Xili, Shenzhen
Guangdong
P. R. China 518055

or email the documents to scc.hitsz@gmail.com
6.18. Faculty: Norwegian University of Science and Technology, Norway
Contributed by: Morten Breivik, morten.breivik@ntnu.no

The Norwegian University of Science and Technology (NTNU) in Trondheim, Norway is establishing the Onsager Fellowship programme, which is designed to attract the most talented young scholars with an established reputation for high-quality research and a commitment to teaching at university level, see http://www.ntnu.edu/onsagerfellowship.

As part of the Onsager fellowship programme, NTNU’s Faculty of Information Technology, Mathematics and Electrical Engineering invites applications for a tenure-track associate professorship in Robotic Vision, affiliated with the Department of Engineering Cybernetics (Institutt for teknisk kybernetikk, ITK, https://www.itk.ntnu.no/english). ITK has 10 full professors, 6 associate professors and 1 assistant professor. In addition, there are 11 adjunct professors, about 10 postdoctoral fellows and 60 PhD candidates. Approximately 90 MSc candidates graduate annually. The department is involved in numerous research projects and centers, including a new Centre of Excellence for Autonomous Marine Operations and Systems (AMOS, http://www.ntnu.edu/amos) at NTNU.

Machine vision has been a popular research field for decades, reaching maturity for tasks such as identification and handling of static rigid objects. To handle more ambiguous and versatile tasks, machine vision must be integrated deeper into the architecture for real-time sensor fusion and robotic control, enabling information processing to use mathematical models of the robotic system, and enabling the control system to extract relevant information from imaging sensors in real time. We call this field for robotic vision.

The advertised tenure-track position is at the level of associate professor, and applicants are expected to have documented world-leading research capability or potential in robotic vision. It is expected that the successful applicant will qualify for a full professorship after the tenure-track period of 6-7 years.

The candidate must have a background in both vision and control systems. The ideal candidate would have a PhD involving both areas, and a strong track record of publishing in leading journals. We are especially looking for candidates with experience in optical flow, simultaneous localization and mapping (SLAM), 3D vision, visual servoing, GPU/FPGA programming and embedded systems. The candidate should have a broad mathematical background, including a strong foundation in estimation theory, in order to be able to connect the dots between imaging, dynamic environments and control systems.

It is expected that the successful applicant will contribute to the large research portfolio at ITK, including applications such as autonomous unmanned vehicles, robotics, ships and marine systems, process control, smart grids, offshore renewable energy, automated drilling, fisheries and aquaculture, medical technology, safety-critical systems, embedded and real-time systems, systems engineering and instrumentation. ITK has extensive infrastructure to support research on robotic vision, and several laboratories have autonomous vehicles or robotics technology which can be equipped with imaging sensors.

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


About NTNU, Trondheim and Norway:
- About NTNU: http://www.ntnu.edu/
- NTNU Facts and Figures: http://www.ntnu.edu/facts
- NTNU International Researcher Support: http://www.ntnu.edu/nirs
- About Trondheim: http://www.ntnu.edu/livingintrh/about-trondheim
- Official Trondheim webpage: http://www.trondheim.no/engelsk
- About Norway: http://www.ntnu.edu/livingintrh/about-norway
- Working in Norway: https://www.nav.no/workinnorway/en/Home
NTNU is Norway’s second largest university, with an annual budget of about US $800 million. Its 51 departments are spread out over seven major faculties, and graduate about 3,300 students every year, two-thirds of which are master’s or PhD candidates. The university has more than 100 laboratory facilities distributed among the different faculties and departments. These are central elements in NTNU’s education and research work.

NTNU’s research is cutting edge, and many of the technological and cultural innovations that allow Norway to extract oil and gas from the North Sea, grow healthy salmon in fish farms, or interpret the country’s 9,000 years of human history have been developed here. In fact, the university itself, founded in 1910, has contributed a solid century of academic achievements and discoveries that have shaped Norwegian society.

Newcomers to Norway will find the Norwegian work culture to be relaxed, but efficient. The typical work week is 37.5 hours long, with a generous summer holiday time and official holidays sprinkled throughout the year. The work culture reflects the culture at large, which is respectful of individual rights and supports a generous welfare system.

6.19. Faculty: Dalhousie University, Canada

Contributed by: Ya-Jun Pan, yajun.pan@dal.ca

Assistant Professor
Mechanical Engineering
Dalhousie University

The Department of Mechanical Engineering at Dalhousie University invites applications for a probationary tenure-track appointment at the Assistant Professor level. The Department has 15 full time professors, graduates more than 100 undergraduate students per year, and has more than 50 Masters and PhD students.

Candidates must have a Bachelor of Mechanical Engineering degree and an earned Doctorate in engineering, research credentials consistent with the development of a strong, externally-funded research program, and excellent teaching ability. Industrial, design, or relevant post-doctoral experience is desirable. Candidates must be registered professional engineers in Canada, or eligible and committed to registration in Nova Scotia.

The candidate will be expected to conduct control systems research with applications to marine systems or marine robotics. Marine-related research is an area of increasing importance within the Mechanical Engineering Department and is part of Dalhousie’s Strategic Research Areas. Teaching duties may include undergraduate courses in control systems, vibrations, and machine dynamics as well as graduate courses related to the successful candidate’s research activities.

Applications must include a cover letter, curriculum vitae, and statements of teaching and research interests. Applications should be received by June 30, 2015 and sent to:

Dr. Andrew Warkentin
Chair of the Search Committee
Department of Mechanical Engineering
Dalhousie University
P.O. Box 15000
1360 Barrington St.
Halifax, Nova Scotia B3H 4R2
CANADA
andrew.warkentin@Dal.Ca

Three confidential letters of reference should be sent directly by referees to the above address. Electronic submissions must be in the form of a single, attached file in PDF format.

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority. Dalhousie University is an Employment Equity/Affirmative Action employer. The University encourages applications
from qualified Aboriginal people, persons with a disability, racially visible persons and women.

6.20. Faculty: University of Liège, Belgium
Contribution by: Guy Leduc, guy.leduc@ulg.ac.be

Open Faculty Position in Systems and Control at the University of Liège

The University of Liège (ULg) invites applications for a full-time tenure-track faculty position in “Systems and Control” in the Department of Electrical Engineering and Computer Science (Montefiore Institute), to be filled by October 1st, 2015.

The University of Liège: Founded in 1817, the Université de Liège offers a complete range of university courses at undergraduate and post-graduate levels. It is divided into eleven faculties: Philosophy and Letters; Law, Political Science and Criminology; Sciences; Medicine; Applied Sciences; Veterinary Medicine; Psychology and Education; HEC Management School, Human and Social Sciences, Gembloux Agro-Bio Tech, and Architecture.

The Department of Electrical Engineering and Computer Science (Institut Montefiore)

Within the Faculty of Applied Sciences, the Montefiore Institute offers several programmes to undergraduate and graduate students. Since the end of the 19th century, it has developed a leading edge tradition in teaching and research in electrical/electronics engineering, applied mathematics and computer science and engineering, and it targets its efforts to contribute in application fields of societal importance, such as biomedical engineering, materials, energy systems, information systems, robotics, and transportation. The department has a long standing tradition of international recruitment at the Faculty level, and organize all its Master’s programmes in ‘full English’.

Description of the position:
The new faculty member will develop research in systems and control, preferably with a focus on one or several of the following areas: biomedical engineering, robotics, electrical power systems.

He/she will also take part in the teaching activities of the department, both at the bachelor’s and master’s levels, in the domain of systems modelling and control theory.

Qualifications:

1. A Dr or PhD degree.
2. A high-level research experience in systems and control theory, and its applications, for example in biomedical engineering, robotics, and/or electrical power systems.
3. A strong commitment to research and interest for teaching.

The applicant will further be expected to acquire a basic knowledge of the French language during the first two years of his employment. Target starting date: 1st of October 2015

Application procedure:

For fullest consideration, applications should be sent to Professor Albert Corhay, Rector, University of Liège, Place du 20 Août, 7 (Bât. A1), 4000 Liège, with reference “Charge à temps plein en systèmes et contrôle”, before May 31st, 2015. However, the position will remain open until filled.

The application should include a cover letter, a research plan for the next three years (max. 3500 char.), a description of the applicant’s teaching approach (max. 3500 char.), a resume with a complete list of publications, a copy and a description of the five most significant publications, and the name and address of three international experts, not at the University of Liège, for reference.

A copy of the application should also be sent to Professor Guy Leduc (Department Chair), at the Institut Montefiore, University of Liège, Sart Tilman B 28, B-4000 Liège, Belgium. Please contact him (guy.leduc@ulg.ac.be) for further information.

The selected candidate will be appointed for a 3-year tenure-track, with a possible extension to 5 years, and a first possibility of tenuring after 3 years.
Faculty Opening

The Department of Electrical and Electronics Engineering at Anadolu University invites applications for faculty positions at all levels in the areas of

. VLSI Circuit and Systems, Systems-on-Chip, Computer-Aided Design and Synthesis,
. Microwave Circuits and Antennas,
. Wireless Communications, Wireless Networks, Telecommunication Networks,
. MEMS.

Applicants must have completed (or be completing) a PhD in electrical and/or electronics engineering, must have demonstrated the ability to pursue a program of research, and must have a strong commitment to graduate and undergraduate teaching. A successful candidate will be expected to teach courses at the graduate and undergraduate levels, and to build a team of graduate students in PhD research. Preferred starting date is Autumn 2015, but is negotiable. The review of applications will begin immediately, and applications will be accepted until the vacancies are filled. Further information about the department can be found at http://www.eem.anadolu.edu.tr. Applicants should electronically submit a cover letter, a current CV, a three-year research plan, a statement of teaching interests, and the names of three references to Professor Hüseyin Akçay, Head of Department of Electrical and Electronics Engineering, Anadolu University. For inquiry, please call 222-3350580-Ex 6459 or email huakcay@anadolu.edu.tr.

Anadolu University is a public institution located in Eskişehir. The medium of instruction is English. The university attracts significant amount of government funding through its Distance Learning Program, which enables the department to offer a competitive salary and benefit package comparable to leading private Turkish universities, and present professional development opportunities in various forms for young faculty.