

CSCS-19
19th INTERNATIONAL CONFERENCE ON CONTROL SYSTEMS
AND COMPUTER SCIENCE

May 29-31, 2013
University POLITEHNICA of Bucharest

PROGRAMME

19th INTERNATIONAL CONFERENCE ON CONTROL SYSTEMS AND COMPUTER SCIENCE

CSCS-19 is the 19th biennial conference to be held at **University Politehnica of Bucharest**, Bucharest, Romania, from 29 to 31 May 2013. The accepted papers and scientific topics reflect the aims of the Conference. It consists of specialized sections dedicated to major topics in theory and applications of systems science and computer science. At this edition we have 3 invited talks, 6 international workshops and 10 sessions.

WORKSHOPS

- **The 6th International Workshop on Interdisciplinary Approaches in Fractal Analysis – IAFA**
<http://www.iafa2013.aii.pub.ro>
Workshop organizer:
Radu Dobrescu, University Politehnica of Bucharest, Romania
 - **IAFA-1: Fractal Analysis of Medical Images**
Chairs: *Nebojša T. Milošević* (University of Belgrade, Serbia), *Cătălin Vasilescu* (Fundeni Clinical Hospital Romania)
 - **IAFA-2: Signal and Data Processing**
Chairs: *I. Tabus* (Tampere University of Technology, Finland), *Radu Dobrescu* (University Politehnica of Bucharest, Romania)
 - **IAFA-3: Complex Models in Applied Sciences**
Chairs: *Mircea Olteanu* (University Politehnica of Bucharest, Romania), *Paul Flondor* (University Politehnica of Bucharest, Romania)
 - **IAFA-4: New Issues in Complexity Modeling**
Chairs: *Kyandoghene Kyamakya* (Universitaet Klagenfurt, Austria), *Radu Dogaru* (University Politehnica of Bucharest, Romania)
- **The 2nd International Workshop on Cyber Physical Systems – IWoCPS**
<http://iwocps.hpc.pub.ro>
Workshop organizer:
Ioan Dumitrache, University Politehnica of Bucharest, Romania
 - **IWoCPS-1**
Chairs: *Georgi M. Dimirovski* (SS Cyril & Methodius University, Rep. of Macedonia), *Aurelian Stănescu* (University Politehnica of Bucharest, Romania)
 - **IWoCPS-2**
Chairs: *Pierre Borne* (Ecole Centrale de Lille, Villeneuve d'Ascq, France), *Dumitru Popescu* (University Politehnica of Bucharest, Romania)
- **International Workshop on Agent Technology for Ambient Intelligence—AgTAmI**
<http://aimas.cs.pub.ro/AgTAmI2013>
Workshop organizers:
Adina Magda Florea, University Politehnica of Bucharest, Romania
Zary Segall, University of Maryland, UMBC, USA
Olivier Boissier, Ecole Nationale Supérieure des Mines de Saint-Etienne, France
 - **AgTAmI-1: Tools and Techniques**
Chairs: *John Jules Meyer* (Utrecht University & Alan Turing Institute Almere), *Costin Bădică* (University Politehnica of Bucharest, Romania)

- **AgTAmI-2: Smart Applications**
Chairs: *Zary Segall* (The Royal Institute of Technology, Stockholm, Sweden), *Adina Magda Florea* (University Politehnica of Bucharest, Romania)
- **International Workshop on Secure Internet of Things – SioT**
<https://systems.cs.pub.ro/siot2013>
Workshop organizers:
Răzvan Rughiniș, University Politehnica of Bucharest, Romania
Gabriel Ghiniță, University of Massachusetts Boston, USA
 - **SioT-1: Wireless Sensor Networks and Mobile Security**
Chairs: *Răzvan Deaconescu* (University Politehnica of Bucharest, Romania), *Mircea Bardac* (INTEL, Romania)
 - **SioT-2: Cryptography and Malware Detection**
Chairs: *Răzvan Rughiniș* (University Politehnica of Bucharest, Romania), *George Milescu* (University Politehnica of Bucharest, Romania)
- **International Workshop on Design and Spontaneity in Computer-Supported Collaborative Learning - DS-CSCL**
<https://systems.cs.pub.ro/ds-cscl2013>
Workshop organizers:
Ștefan Trăușan-Matu, University Politehnica of Bucharest, Romania
Răzvan Rughiniș, University Politehnica of Bucharest, Romania
- **International Workshop on Cyberinfrastructures for Natural Resources Management – CyRM**
<http://cyrm.hpc.pub.ro>
Workshop organizers:
Mariana Mocanu, University Politehnica of Bucharest, Romania
Marian Muste, University of Iowa, USA
 - **CyRM-1**
Chairs: *Lucia Văcariu* (Technical University of Cluj-Napoca Cluj-Napoca, Romania), *Marian Muste* (The University of Iowa, USA)
 - **CyRM-2**
Chairs: *Mariana Mocanu* (University Politehnica of Bucharest, Romania), *Octavian Creț* (Technical University of Cluj-Napoca Cluj-Napoca, Romania)

SESSIONS

- **Systems and Signals**
Chairs: *Constantin Marin* (University of Craiova, Romania), *Dan Ștefănoiu* (University Politehnica of Bucharest, Romania)
- **Design Methods**
Chairs: *Horia-Nicolai Teodorescu* (Technical University Gheorghe Asachi, Iasi, Romania), *Simona Iuliana Caramihai* (University Politehnica of Bucharest, Romania)
- **Software Design**
Chairs: *Florica Moldoveanu* (University Politehnica of Bucharest, Romania), *Florin Rădulescu* (University Politehnica of Bucharest, Romania)
- **Distributed Computing**
Chairs: *Nicolae Țăpuș* (University Politehnica of Bucharest, Romania), *Mugurel Ionuț Andreica* (University Politehnica of Bucharest, Romania)

- **Distributed Applications**

Chairs: *Emil Slușanschi* (University Politehnica of Bucharest, Romania), *Ciprian Dobre* (University Politehnica of Bucharest, Romania)

- **Multi-agent Systems**

Chairs: *Lorina Negreanu* (University Politehnica of Bucharest, Romania), *Andrei-Horia Mogoș* (University Politehnica of Bucharest, Romania)

- **Embedded Control Systems**

Chairs: *Decebal Popescu* (University Politehnica of Bucharest, Romania), *Dan Ștefan Tudose* (University Politehnica of Bucharest, Romania)

- **Semantic-Based Systems**

Chairs: *Ștefan Trăușan-Matu* (University Politehnica of Bucharest, Romania), *Traian Rebedea* (University Politehnica of Bucharest, Romania)

- **Advanced Applications and Services**

Chairs: *Valentin Cristea* (University Politehnica of Bucharest, Romania), *Florin Pop* (University Politehnica of Bucharest, Romania)

- **Environment Control Systems**

Chairs: *Costică Nitu* (University Politehnica of Bucharest, Romania), *Alexandru Dumitrașcu* (University Politehnica of Bucharest, Romania)

ORGANIZERS

CSCS-19 International Conference is organized by:

- Romanian Society of Control Engineering and Technical Informatics (SRAIT)
- Faculty of Automatic Control and Computers, University *POLITEHNICA* of Bucharest
- IEEE Computer Society – technically supported by IEEE

SPONSORS

Main Sponsors of CSCS19

ERRIC FP7 Project - Empowering Romanian Research on Intelligent Information Technologies

ARIA - Romanian Association for Artificial Intelligence

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CONFERENCE WEB SITE

<http://cscs19.acs.pub.ro>

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CSCS-19 TIMETABLE

Thursday, May 28, 2013

13.00 – 16.00	Registration
13.30 – 18.00	A&C Brokerage Event
19.00 – 21.00	Cocktail

Wednesday, May 29, 2013

09.00 – 17.30	Registration
09.00 – 09.30	Opening Ceremony (EC105)
09.30 – 10.30	Invited Paper (Plenary Session, EC105)
10.30 – 11.00	Coffee break
11.00 – 12.30	Conference sessions
12.30 – 14.00	Lunch
14.00 – 15.30	Conference sessions
15.30 – 16.00	Coffee break
16.00 – 17.30	Conference sessions

Thursday, May 30, 2013

09.00 – 17.30	Registration
09.30 – 10.30	Invited Paper (Plenary Session, EC105)
10.30 – 11.00	Coffee break
11.00 – 12.30	Conference sessions
12.30 – 14.00	Lunch
14.00 – 15.30	Conference sessions
15.30 – 16.00	Coffee break
16.00 – 17.30	Conference sessions
19.00 – 22.00	Conference Dinner

Friday, May 31, 2013

09.00 – 15.30	Registration
09.30 – 10.30	Invited Paper (Plenary Session, EC105)
10.30 – 11.00	Coffee break
11.00 – 12.30	Conference sessions
12.30 – 14.00	Lunch
14.00 – 15.30	Conference sessions
15.30 – 16.00	Coffee break
16.00 – 17.30	Round Table and Closing Ceremony (EC105)

Message from CSCS19 2013 Conference Chair

On behalf of the CSCS19 2013 Organizing Committee, we are honoured and delighted to welcome you to the 19th International Conference on Control Systems and Computer Science that takes place in Bucharest, Romania, from May 29 to May 31, 2013. The CSCS 19 Conference continues a tradition of more than 40 years as a biennial international event. The main scope of CSCS is to cluster the latest research topics relevant to both Computer Science and Control Systems, and to promote cutting edge research significant to mainstream topics of these two interconnected domains. The 2013 edition of CSCS international conference is mainly focused on Intelligent Information Technologies, as a common thread that leads advances in fundamental and applied research in Control Systems and Computer Science.

Over the years, CSCS has been the premier and the avant-garde international conference in control and computer science organized in Romania, gathering most prominent researches and scientific contributions from all over the world. The Faculty of Automatic Control and Computers (A&C) of University Politehnica of Bucharest and the Romanian Society of Control Engineering and Technical Informatics (SRAIT) organize the 19th edition of CSCS.

We are proud to announce that the 2013 edition of CSCS19 is organized with IEEE technical co-sponsorship.

CSCS19 also have the support of the FP7 Project “ERRIC: Empowering Romanian Research on Intelligent Information Technologies.” The main goal of the ERRIC project is to empower A&C existing excellence in research by unlocking its significant research potential and enhancing its national and regional leadership position in selected areas of Intelligent Information Technologies: agreement technologies, semantic and collaborative technologies for the web, advanced grid technologies, large scale distributed system services, and adaptive intelligent control. Throughout this project, fostering high quality research in these areas of A&C expertise leads to a comprehensive and sustainable integration of A&C into the wider European Research Area context. Other sponsors of the conference are IEEE Romania Section, IEEE Romanian Chapter of Computational Intelligence Society, and Romanian Association for Artificial Intelligence (ARIA).

This edition of CSCS received 212 paper submissions (for main track and workshops) from all over the world and several workshop proposals. Each submission was peer-reviewed by program committee members or invited external reviewers. Finally, 97 high quality papers were selected (about 46% acceptance ratio) to be published in the Proceedings and presented during the 10 main sections of the conference and the 6 workshops organized in conjunction with CSCS19.

The papers contained in these Proceedings cover a wide range of topics including Systems and Signals, Design Methods, Software Design, Distributed Computing, Distributed Applications, Multi-Agent System, Embedded Control System, Semantic-Based Systems, Advanced Applications and Services, and Environment Control System.

We are honoured to have three distinguished keynote talks by Prof. Dr. John-Jules Ch. Meyer (Utrecht University, Alan Turing Institute Almere), Prof. Dr. Zary Segall (Royal Institute of Technology in Stockholm, University of Maryland) and Prof. Dr. Georgi Marko Dimirovski (Dogus University of Istanbul, SS Cyril & Methodius University, Skopje), who present leading edge topics of research in computer science and control systems, steering new insights in emotional software agents, context awareness to semantic awareness, and complex dynamical networks.

The workshops co-located with the conference cover on-going quality research focused on hot topics of intelligent information technologies and intelligent control.

The International Workshop “Interdisciplinary Approaches in Fractal Analysis 2013” (IAFA-2013) is focused on technical advances in fractal analysis and chaos theory methods for a wide area of applications in signal, image and multimedia processing, data mining and data retrieval, and complex systems modelling.

The International Workshop on Cyber Physical Systems (IWoCPS-2013) covers the latest advances in Cyber Physical Systems. The aim is to stimulate research that will lead to the creation of responsive environments for networking and, at longer-term, the development of Cyber Physical Systems, with the vision that the cyber-physical systems of tomorrow will far exceed those of today in terms of adaptability, autonomy, efficiency, functionality, reliability, safety, and usability.

The Agent Technologies for Ambient Intelligence Workshop (AgTAmI-2013) focuses on subjects related to the use of agents and multi-agent systems in novel approaches and applications of AmI. One of the key aims is how to better exploit a technology that has now arrived to its maturity, in order to create intelligence embedded in the environment and to adapt the environment to user's interests and expectations.

The International Workshop on Secure Internet of Things (SIoT-2013) concentrates on how to provide a secure environment for connecting systems in an Internet-specific structure, in particular security of mesh and machine-to-machine networks, secure software stacks running on ubiquitous network nodes, and algorithms used to provide secure end-to-end communication between nodes.

The Design and Spontaneity in Computer-Supported Collaborative Learning Workshop (DS-CSCL-2013) aims to kindle dialogue and productive inquiries of socio-technical communities of learning. The workshop focuses on local, ad-hoc solutions to unexpected problems; long-term cumulative knowledge production; learning in small, face-to-face teams, or in large, distributed, online communities; learning that is materialized in durable artefacts, and learning that is observed in fleeting, situated behaviours.

The International Workshop on Cyber infrastructures for Natural Resources Management (CyRM-2013) targets to share results and stimulate research in the field of integrated and inclusive cyber infrastructures for management of natural resources. It covers integrated and comprehensive approaches in decision-making processes associated with the management of natural resources, which are necessary in acute problems, triggered by direct or indirect human interventions in the natural systems within which we live.

Organizing this international conference from many years is a collective effort. We want to thank workshops organizers and workshops committee members for carefully reviewing the papers. We are honored to thank all of the members of the organization committee and program committee, as well as all of the reviewers, for their hard work in finalizing the reviews on time, and the authors for submitting their papers.

We also express our gratitude and thank to all members of local organizing committee for their valuable contribution to this successful event. Special thanks are addressed to Ms. Ileana Burlacu (conference treasurer), Dr. Florin Pop (coordinator of local organizing committee and editor of this proceeding), Dr. Alexandru Dumitrascu, Dr. Andrei Mogos, Drd. Catalin Negru and to all members from National Organizing Committee.

We hope you will enjoy the conference together with us and have a great time in Bucharest and also in Romania.

INVITED PAPERS

Invited talk: *(N+1) G and transitioning from context awareness to semantic awareness*

Dr. Zary Segall

Chair Professor in Scalable Mobile Services and Director of the Mobile Services Lab. The Royal Institute of Technology. Stockholm, Sweden

The coming mobile convergence will, in just a few short years, require at least 1000 times more communication bandwidth and considerably more battery capacity. Current cellular networks are already struggling to provide sustainable and scalable data services, and the mobile data explosion is only barely underway. Rolling out more BSs, imposing data caps or limiting access to services are not the only answers: there is a clear need instead for a novel, scalable and, perhaps, even disruptive service provision model.

Subscribing to the point of view that user experience will be one of the main factors in the development of the wireless industry, and that new user experiences will drive wireless research and development, we will be exploring two concepts in mobile user experience, namely the dematerialization of the object and the simultaneous materialization of information. Such new capabilities in terminals will create new types of wireless systems-for example human and semantic aware wireless terminals. Conceptually, the operation of such terminals will require the decomposition of the WEB in WE (social networks) and W (representation of the individual). We will concentrate the discussion on Human and Semantic Awareness and the implications of the development of W. Human Awareness is defined as: Transforming the current user interaction into a model where the computer-based objects are human literate and able to proactively serve the user by taking clues from the human body physiology, movement, chemistry as well as human processes such as emotions and 'state of mind' and seamlessly integrate the resulting object/service into the human lifestyle. One of the examples of such a new type of interaction is Semantic Light (patented 2009, 2010).

Semantic Light and Info Media (SLIM) is designed to bring a layer of machine-awareness to lighting, so that the qualities, quantities and information potential of light may be intelligently modulated based on a number of real-time factors which may include an individual's physical eye capabilities and personal preferences, the conditions present at the specific location of use, the specific task lighting semantic or the socio-cultural context of ongoing activities. Recognizing that people are mobile and that the tasks and contexts important to them are similarly dynamic, mobiSLIM is a way to make lighting smarter for mobile people in three areas: The first area is human-aware lighting, which seeks to understand and proactively respond to the physiological and psychological lighting needs of individuals. This includes tailoring illumination to an individual's eye function, or generating personalized phototherapy based on a record of light exposure.

The second is context-aware task lighting. This takes the form of heuristic analysis for optimal contrast lighting, dynamic radiometric compression for shadow-less lighting, and other adjustments that emphasize specific qualities and quantities of light for enhancing visual perception for particular tasks.

The third application area is semantic task-aware lighting which adds meaning to lighting by integrating text, video, images and other sense-making media in the form of overlays, dematerialized monitors or callouts. Everything from diffuse low-density ambient information to highly focused, high-density media may be presented and modulated by task semantics, location and physical context.

This system is capable of simultaneously producing multiple pools of light with different task-related qualities: near UV for document authentication, computed optimal contrast for illustrations, and glare-free light for reading. Using object and document recognition, it is possible for these pools of light to automatically follow the activity context. Going further, if the system is

aware of the textual content of documents it can see, (from previous exposure-or on-the-fly OCR), it can project color-coded highlighting or additional info media in response to matched search terms, repeated text, thematic similarities, etc. The applications of this concept are practically limitless, and may include SLIM for office, factory, medical use (dentistry, Surgery Theater lighting, light-based treatment of illnesses, etc.), virtual tablets, virtual scanners, home lighting and new types of mobile artifacts and interactions.

One of the key questions to be answered is related to the implications of wide deployment of such new types of terminals and user experience into the structure of the telecommunication ecosystem. I will present an example of such technology in the form of ActiveCast.

The ActiveCast (patent pending) technology aims at providing substantial and measurable increases in the Quality of Experience-QoE-for users in new and existing infrastructure by proposing a smarter, faster and convergent network that is based on deriving and exploiting extensive knowledge of the users' preferences and needs.

Based on semantic knowledge about mobile user behavior, the ActiveCast technology uses models where wireless communication is made available on a time and space shifting basis. Based on this concept, a smart mobile network could plan to use broadband capacity as a function of the current network context, energy availability, type of data, spectrum availability and cost, or to shift the context, for example by rescheduling the time and location of broadband communication. This approach allows for the decoupling of the time at which information is delivered to the end-users' terminals from the one at which it is "consumed". The modeled and measured results provide a superior user experience, better use of the spectrum, energy savings, more efficient core network architecture and new business and revenue models.

In summary, we are currently just scratching the surface on what is possible in semantic awareness in mobile user experience and terminals. Providing a superior user experience is the key to success in mobile IT convergence. Human/semantic aware mobile terminals will require a rethinking of the structure of the telecommunication ecosystem and a reshuffling or reorientation of today's major industrial players.

Dr. Zary Segall is an Endowed Chair Professor at The Royal Institute of Technology (KTH) in Stockholm, Sweden, Scientific Director of the Dept. of Communication at KTH, Director of the Mobile Media and Services KTH Lab, Activity Lead in EIT/ICT Labs and Adjunct Professor in Computer Science and Electrical Engineering at University of Maryland - UMBC. Prior of joining the University of Maryland as a Distinguished Professor, Dr. Segall was Professor and Dept. Head at University of Oregon and Professor at Carnegie Mellon University. As part of his research activity, he had developed theoretical methods and practical systems for parallel processing, highly dependable systems, networking and wearable information systems. This work led to software licensing to IBM, AT&T, GE and NASA and to applications to parallel processing, NASA missions, Air Traffic Control and telecommunication services. His current research work is in Human Aware Wearable Computing, Future Media, Scalable Mobile Services and Semantic Light. Dr. Segall is a fellow of the IEEE Computer Society, and a Fulbright Distinguished IT Chair.

Invited talk: *Complex Dynamical Networks: Controlled Synchronization, Collective Adaptivity and Synchronizability*

Dr. Georgi Marko Dimirovski

Dogus University of Istanbul, Istanbul, Republic of Turkey SS Cyril & Methodius University, Skopje, Republic of Macedonia

In this lecture, the problems of local and possibly global adaptive controlled synchronization of uncertain nonlinear complex dynamical networks possessing coupling delays are investigated. For such networks, it is rather difficult to get exact estimation of coupling coefficients, and some signal or influence associated with time delays is propagating through complex networks. This is due to the finite speed of transmission as well as traffic congestion phenomenon. For such delayed networks with unknown but bounded nonlinear coupling functions, delay-independent adaptive controllers are designed via Lyapunov stability theory. These can ensure the state of a delayed dynamical network synchronize asymptotically either globally or locally or. Numerical examples and the respective simulation results are given to demonstrate the effectiveness of the proposed synchronizing controller designs. The property of synchronizability in complex dynamical networks, which is to be expected in such networks naturally, has been explored and found not to be straightforward as well as a certain conclusion drawn.

Keywords - Adaptive controlled synchronization; adaptivity; complex dynamical networks; Siljak's dynamic graphs; Lyapunov functional; nonlinear systems; synchronizability; time delay; uncertain systems.

Dr. Georgi Marko Dimirovski received his Dipl-Ing degree in 1966 from SS Cyril and Methodius University of Skopje, Macedonia, MSc degree in 1974 from University of Belgrade, Serbia, and PhD degree in 1977 from University of Bradford, England, the UK. Dr Dimirovski is a Foreign Member of Serbian Academy of Engineering Sciences in Belgrade. He is a Research Professor (life-time emeritus) of Automation and Systems Engineering at Faculty of Electrical-Electronics Engineering and Information Technologies of SS Cyril and Methodius University of Skopje, R. Macedonia, and a Guest Professor of Computer Science & Information Technologies at Faculty of Engineering of Dogus University of Istanbul as well as an Invited Professor of Computer & Control Sciences at the Graduate Institutes of Istanbul Technical University (Aerospace Engineering) and of Dokuz Eylul University of Izmir (Mechatronics Engineering), R. Turkey. In 1979, he held a postdoctoral position and subsequently was a Visiting Research Professor at the University of Bradford in 1984, 1986 and 1988, and also at the University of Wolverhampton in 1990 and 1991. In 1994 he was a Senior Research Fellow and Visiting Professor at Free University of Brussels, Belgium, and later in 2000 at Johannes Kepler University of Linz, Austria too. Dr Dimirovski, along with Dr Qing-Kui Li and Dr Jun Zhao, is the recipient of the 2009 Premium of IET Control Theory & Applications for the best 2008 IET-CTA article. In 2011 he received the IFAC Outstanding Service Award. His research interests include nonlinear systems and control, complex dynamical networks, switched systems, and applied computational intelligence to decision and control problems. He has supervised or advised more than 30 doctoral students and 2 postdoctoral fellows. Internationally, Dr Dimirovski has authored or co-authored more than 70 journal articles and 300 plus conference papers conferences worldwide, which have received more than 700 citations in Scopus. Currently, he serves the journals Asian J. of Control (J. Wiley, Taiwan), IEEE SMC-B Cybernetics (The IEEE, USA), Intl. J. of Automation & Computing (Beijing, P.R. China), and CEAC journal (SRAIT, Romania) as an associate editor and member of the editorial board.

Invited talk: *Affective Software Agents*

Prof. dr. John-Jules Meyer, Utrecht University & Alan Turing Institute Almere

This talk is about endowing software agents with affective attitudes (emotions). The general idea is that an agent's behavior depends on the emotion triggered. (So emotions comprise a way of adapting the behavior of agents.) This is important for applications in human-computer interaction (HCI) and (serious) gaming in order to obtain a better interaction with users. In games this pertains to more 'believable' behavior of the characters, so as to enhance the gamer's 'feel' for the game, which in the case of a serious game will generally also enhance the effectivity of the user's / trainee's learning. There is a potential applicability in many contexts (ambient / home intelligence, medical contexts, all kinds of simulation trainings, to mention a few).

However, engineering this kind of systems is hampered by the fact that there are several models for various aspects of emotions (appraisal, experience and coping / emotion regulation), which have been devised by different researchers with different aims in mind. As affective software agents generally need to deal with more than one aspect as mentioned above, they have to be designed using combinations of these (sometimes incompatible) models.

Prof.dr. John-Jules Ch. Meyer studied Mathematics with Computer Science and Digital Signal Processing at Leyden University. He obtained his Ph.D. from the Vrije Universiteit in Amsterdam on a subject in theoretical computer science. From 1988 to 1993 he was a full professor both at the VU in Amsterdam and the University of Nijmegen. Since 1993 he has been a full professor of computer science at Utrecht University. At the moment he is heading the Intelligent Systems Group. Currently he is also the CSO of the Alan Turing Institute Almere, which specializes in multi-disciplinary research for the health sciences. He has well over 400 peer-reviewed publications in international journals and conferences proceedings, and an h-index of 41 (Google scholar). He is a member of the editorial boards of several international journals including the *Journal of Intelligent Agents & Multi-Agent Systems*. His current research interests include artificial intelligence, and intelligent agents in particular, as to both theory and applications such as virtual characters in serious games. In 2005 he was appointed as a Fellow of the European Coordinating Committee for Artificial Intelligence (ECCAI). He is a honorary member of the national research school SIKS since 2007.

Wednesday, May 29, 2013

CSCS19-S1: Systems and Signals

Room EC105, Date: 29 May 2013, 11.00-12.30

Chairs: *Constantin Marin* (University of Craiova, Romania), *Dan Ștefănoiu* (University Politehnica of Bucharest, Romania)

Low-Complexity Model Predictive Control of a Permanent Magnet Synchronous Machine 3
Sabin-Constantin Carpiuc and Corneliu Lazăr

Finite Time Response Control of State Blocking Systems
Constantin Marin, Dan Selișteanu, and Dorin Șendrescu

Fault Detection and Diagnosis Using Parameter Estimation with Recursive Least Squares
Elena M. Cimpoeșu, Bogdan D. Ciubotaru, and Dan Ștefănoiu

Level Control Using a Feed-Forward Structure
Matei Vinatoru, Camelia Maican, and Corneliu Vinatoru

IWoCPS-S1

Room EC001, Date: 29 May 2013, 11.00-12.30

Chairs: *Georgi M. Dimirovski* (SS Cyril & Methodius University, Rep. of Macedonia), *Aurelian Stanescu* (University Politehnica of Bucharest, Romania)

From Mass Production to Intelligent Cyber-Enterprise
Ioan Dumitrache, Simona Iuliana Caramihai, and Aurelian Stanescu

Towards the Development of the Future Internet Based Enterprise in the Context of Cyber-Physical Systems
Ioan Ștefan Sacala, Mihnea Alexandru Moiescu, and Dragos Repta

Switching Hinf Control Synthesis Designs for Networked Control Systems
Dan Ma and Georgi M. Dimirovski

Simulation Scenarios for Deploying Underwater Safe-Net Sensor Networks Using Remote Operated Vehicles: Offshore Exploration Constructions Models and Sensor Deployment Methods
Mitruț Caraivan, Valentin Dache, and Valentin Sgârțiu

A Service-Oriented Alarms System for Intelligent Building Management
Alexandra Cernian, Radu Iancu, and Serban Barbu Petrescu

AgTAmI-S1: Tools and Techniques

Room EC002, Date: 29 May 2013, 11.00-12.30

Chairs: *John Jules Meyer* (Utrecht University & Alan Turing Institute Almere), *Costin Bădică* (University of Craiova, Romania)

Multi-agent Oriented Programming and Intelligent Environments
Olivier Boissier

A Framework for Consistent Experimentation in Aml
Andrei-Adnan Ismail, Cosmin Marian, and Adina Magda Florea

A Review on Vision Surveillance Techniques in Smart Home Environments
Marius Brezovan and Costin Badica

Graph Matching for Context Recognition
Adrian Dobrescu and Andrei Olaru

CSCS19-S2: Design Methods

Room EC105, Date: 29 May 2013, 14.00-15.30

Chairs: *Horia-Nicolai Teodorescu* (Technical University Gheorghe Asachi, Iasi, Romania), *Simona Iuliana Caramihai* (University Politehnica of Bucharest, Romania)

Level Fuzzy Control of Three-Tank System

Lucian Mastacan and Constantin-Cătălin Dosoftei

Determining the Parameters of a Sugeno Fuzzy Controller Using a Parallel Genetic Algorithm
S. Ciurea

Microcontroller Implementation of a Multivariable Fractional Order PI Controller

Cristina I. Muresan, Eva H. Dulf, Roxana Both, Andrei Palfi, and Mircea Caprioru

NNs Recognize Chaotic Attractors

Horia-Nicolai L. Teodorescu and Mircea Hulea

IWoCPS-S2

Room EC001, Date: 29 May 2013, 14.00-15.30

Chairs: *Pierre Borne* (Ecole Centrale de Lille, Villeneuve d'Ascq, France), *Dumitru Popescu* (University Politehnica of Bucharest, Romania)

Balancing Strategy for Ratio Control Structures

Ciprian Lupu and Catalin Petrescu

Metaheuristic vs Adaptive Approach in Discrete-Time Hammerstein Systems Identification

Mihai Cornoiu, Dumitru Popescu, Pierre Borne, and Dan Ștefănoiu

Integrating versus Interfacing Safety and Security with Process Control System

Luiza Ocheana, Dan Popescu, and Gheorghe Florea

Process Discovery Using Ant Colony Optimization

Diana Chinces and Ioan Salomie

AgTAmI-S2: Smart Applications

Room EC002, Date: 29 May 2013, 14.00-15.30

Chairs: *Zary Segall* (The Royal Institute of Technology, Stockholm, Sweden), *Adina Magda Florea* (University Politehnica of Bucharest, Romania)

Agents in Domestic Environments

Leo van Moergestel, Wouter Langerak, Glenn Meerstra, Niels van Nieuwenburg, Franc Pape, Daniël Telgen, Erik Puik, and John-Jules Meyer

Human Activity Recognition in Smart Environments

Monica-Andreea Dragan and Irina Mocanu

Strengthening Context-Awareness of Virtual Species in Digital Ecosystems

Luca Dan Șerbănați, Andrei Vasilateanu, and Bogdan Niță

CSCS19-S3: Software Design

Room EC105, Date: 29 May 2013, 16.00-17.30

Chairs: *Florica Moldoveanu* (University Politehnica of Bucharest, Romania), *Florin Radulescu* (University Politehnica of Bucharest, Romania)

Exploration of Multi-thread Processing on XILKERNEL for FPGA Based Embedded Systems

Sangeet Saha, Amlan Chakrabarti, and Ranjan Ghosh

Efficient Picking through Atomic Operations

Lucian Alexandru Petrescu, Florica Moldoveanu, Alin Moldoveanu, Anca Morar, and Victor Asavei

Model-Driven Inline Assembler Generator for Retargetable Compilers

Ciprian Arbone, Bogdan Ditu, Stefan Craciun, and Dragos Badea

Automatic Plagiarism Detection System for Specialized Corpora

Filip Cristian Buruiană, Adrian Scoica, Traian Rebedea, and Răzvan Rughiniș

CSCS19-S4: Distributed Computing

Room EC001, Date: 29 May 2013, 16.00-17.30

Chairs: *Nicolae Țăpuș* (University Politehnica of Bucharest, Romania), *Mugurel Ionuț Andreica* (University Politehnica of Bucharest, Romania)

Towards Using SCTP as a Data Transport Protocol for Data-Intensive Batch Jobs

Lucian Ghinea, Mugurel Ionuț Andreica, Vlad Olaru, and Nicolae Țăpuș

Efficient Algorithms for Fast Data Transfers Using Long and Large Pipes in WAN Networks

Dan Schragar and Florin Radulescu

Predicting Encounters in Opportunistic Networks Using Gaussian Process

Cristian Chilipirea, Andreea-Cristina Petre, and Ciprian Dobre

Running KVM Virtual Machines in Batch Systems

Iustina Melinte, Alexandru Bujor, Răzvan Dobre, and Alexandru Herisanu

Probabilistic Schedulability Analysis for Fault Tolerant Tasks under Stochastic Error Occurrences

Hüseyin Aysan, Radu Dobrin, and Sasikumar Punnekkat

CSCS19-S5: Distributed Applications

Room EC002, Date: 29 May 2013, 16.00-17.30

Chairs: *Emil Slusanschi* (University Politehnica of Bucharest, Romania), *Ciprian Dobre* (University Politehnica of Bucharest, Romania)

A Platform to Support Context-Aware Mobile Applications

Ciprian Dobre

Scalability Study of Two Weather Prediction Models

Emil Slusanschi, Diana Gudu, and Aurora Mirea

Efficient Location Tracking System for Patient Monitoring

Daniel Rosner, Răzvan Tătăroiu, Constantin Ilas, Andreea Livia-Beciu, and Ovidiu-Marius Alexandru

Automatic Generation of Architecture Model for Reconfigurable Build Tools

Lavinia Ghica, Bogdan Ditu, and Nicolae Țăpuș

Thursday, May 30, 2013

CSCS19-S6: Multi-agent Systems

Room EC105, Date: 30 May 2013, 11.00-12.30

Chairs: *Lorina Negreanu* (University Politehnica of Bucharest, Romania), *Andrei-Horia Mogoş* (University Politehnica of Bucharest, Romania)

Formal Specification and Verification of Concurrent Agents in Event-B
Lorina Negreanu, Irina Mocanu, and Adina Magda Florea

Three Variants of the Master Theorem
Andrei-Horia Mogoş

An Adaptive Multi-agent Model for Automated Negotiation
Serban Radu and Valentin Lungu

Real Time Self-Organizing Systems for Swarm Control
Mihai Maruseac

Modeling and Proof of Event-Driven Interaction in Multi Agent Systems in Event-B
Lorina Negreanu and Matei Popovici

SIoT-S1: Wireless Sensor Networks and Mobile Security

Room EC001, Date: 30 May 2013, 11.00-12.30

Chairs: *Răzvan Deaconescu* (University Politehnica of Bucharest, Romania), *Mircea Bardac* (INTEL, Romania)

Smart Cities Built on Resilient Cloud Computing and Secure Internet of Things
George Suciu, Alexandru Vulpe, Simona Halunga, Octavian Fratu, Gyorgy Todoran, and Victor Suciu

An Architecture for Secure m-Commerce Applications
Ioannis Kounelis, Gianmarco Baldini, Sead Muftic, and Jan Löschner

Mobile Malware and Smart Device Security: Trends, Challenges and Solutions
Abdullahi Arabo and Bernardi Pranggono

IPv6 Peer Availability in BitTorrent Distributed Hash Table
George Milescu and Mircea Bardac

Trust Mechanisms for Multi-owner Wireless Sensor Networks
Răzvan-Andrei Vasilache, Ioan-Claudiu Gavrilă, Alin-Ciprian Grigorescu, and Laura Gheorghe

IAFA-S1: Fractal Analysis of Medical Images

Room EC002, Date: 30 May 2013, 11.00-12.30

Chairs: *Nebojša T. Milošević* (University of Belgrade, Serbia), *Cătălin Vasilescu* (Fundeni Clinical Hospital Romania)

Opening Lecture
Cătălin Vasilescu (Fundeni Clinical Hospital Romania)

Richardson's Method of Segment Counting versus Box-Counting
Nebojša T. Milošević, Nemanja Rajković, Herbert F. Jelinek, and Dušan Ristanović

Box-Count Analysis of Two Dimensional Images: Methodology, Analysis and Classification
Nebojša T. Milošević, Guy N. Elston, Bojana Krstonošić, and Nemanja Rajković

Preliminary Results for Automatic Detection of Arterio-Venous Malformations from Medical Images

Irina-Andra Tache, Andreea Udrea, Dumitru Popescu, Maximilien Vermandel, and Christian Vasseur

Neurons of the Human Dentate Nucleus: Box-Count Method in the Quantitative Analysis of Cell

Morphology

Dušica L. Marić, Nebojša T. Milošević, Herbert F. Jelinek, and Katarina Rajković

CSCS19-S8: Semantic-Based Systems

Room EC105, Date: 30 May 2013, 14.00-15.30

Chairs: *Ștefan Trăușan-Matu* (University Politehnica of Bucharest, Romania), *Traian Rebedea* (University Politehnica of Bucharest, Romania)

Metaphor Detection

Bogdan-Ionuț Cirstea and Costin-Gabriel Chiru

Overview and Preliminary Results for a Opinions Summarization Method

Cercel Dumitru Clementin, Ștefan Trăușan-Matu, and Julien Velcin

Relevance-Based Ranking of Video Comments on YouTube

Andrei Serbanoiu and Traian Rebedea

Semantic Approach for Modeling Profiles and Interactions Based on Digital Content

Ana-Cristina Surdu and Florin Pop

SIoT-S2: Cryptography and Malware Detection

Room EC001, Date: 30 May 2013, 14.00-15.30

Chairs: *Răzvan Rughiniș* (University Politehnica of Bucharest, Romania), *George Milescu* (University Politehnica of Bucharest, Romania)

Detecting and Analyzing Zero-Day Attacks Using Honeypots

Constantin Musca, Emma Mirica, and Răzvan Deaconescu

Accelerating Encryption Algorithms Using Parallelism

Cristina-Loredana Duță, Gicu Michiu, Silviu Stoica, and Laura Gheorghe

IARCrypto

Radu Velea, Nicolae Țăpuș, and Mircea Bardac

Guidelines for Discovering and Improving Application Security

Gabriel Avramescu, Mihai Bucicoiu, Daniel Rosner, and Nicolae Țăpuș

IAFA-S2: Signal and Data Processing

Room EC002, Date: 30 May 2013, 14.00-15.30

Chairs: *I. Tabus* (Tampere University of Technology, Finland), *Radu Dobrescu* (University Politehnica of Bucharest, Romania)

Opening Lecture

I. Tabus (Tampere University of Technology, Finland)

On Micro-Doppler Period Estimation

Pavlo Molchanov, Jaakko Astola, Karen Egiazarian, and Alexander Totsky

Two-Phase Compression of Histological Images with MDL Ranking of Segmentation Images

I. Tabus, J. Hukkanen, and I. Schioppa

Quaternary Crack-Edge Representation for Lossless Contour Compression

I. Tabus and I. Schiopu

Characterization of Tumor Angiogenesis Using Fractal Measures

Loretta Ichim and Radu Dobrescu

CSCS19-S10: Environment Control Systems

Room EC105, Date: 30 May 2013, 16.00-17.30

Chairs: *Costică Nitu* (University Politehnica of Bucharest, Romania), *Alexandru Dumitraşcu* (University Politehnica of Bucharest, Romania)

Analogical Modeling and Numerical Simulation of the Residual Water Blunting Process Used in Metallurgy

Vlad Muresan, Mihail Abrudean, and Tiberiu Colosi

An Effective Tool for the Tropical Cyclones Monitoring

C. Nitu, Alexandru Dumitraşcu, V.F. Krapivin, V.Yu. Soldatov, C.A. Varotsos, and A.P. Cracknell

A Device to Measure the Geophysical and Hydrophysical Parameters

C. Nitu, A.S. Dobrescu, V.F. Krapivin, and V.Yu. Soldatov

A New Challenge in Ecological Process Control Based on PLCs with Profinet Communication Protocol

Alexandru Dumitraşcu, Dan Ştefănoiu, and Ionuţ Tomiţa

Engineered Devices to Support Stroke Rehabilitation

Marian Poboroniuc, Danuţ Irimia, Nirvana Popescu, and Dorin Popescu

DS-CSCL-S1

Room EC001, Date: 30 May 2013, 16.00-17.30

Chairs: *Ştefan Trăuşan-Matu* (University Politehnica of Bucharest, Romania), *Răzvan Rughiniş* (University Politehnica of Bucharest, Romania)

Ubiquitous Learning Solutions for Remote Communities—A Case Study for K-12 Classes in a Romanian Village

Livia Ştefan, Dragoş Gheorghiu, Florica Moldoveanu, and Alin Moldoveanu

The Negotiation of Knowledge and Knowing: The Challenge of Using Wiki Technology in Computer Supported Collaborative Learning

Răzvan Deaconescu and Stefania Matei

Designing a Chat-bot that Simulates an Historical Figure

Emanuela Haller and Traian Rebedea

Learning through Massively Co-Authored Biographies: Making Sense of Steve Jobs on Wikipedia through Delegated Voice

Cosima Rughiniş and Stefania Matei

Forming Teams by Psychological Traits—An Effective Method of Developing Groups in an Educational Environment

Corina Ciubuc, Mihai Dascalu, Ştefan Trăuşan-Matu, and Ana-Maria Marhan

IAFA-S3: Complex Models in Applied Sciences

Room EC002, Date: 30 May 2013, 16.00-17.30

Chairs: *Mircea Olteanu* (University Politehnica of Bucharest, Romania), *Paul Flondor* (University Politehnica of Bucharest, Romania)

Opening Lecture

Mircea Rusu (University of Bucharest, Romania)

Fractal Like Kinetics and Preconditioning

Paul Flondor, Mircea Olteanu, and Cătălin Vasilescu

Bayesian Networks Applications in the Reliability of Software Systems for Monitoring
Electrical

Substations

Victor Ursianu, Florica Moldoveanu, Radu Ursianu, and Emiliana Ursianu

Group Greedy RLS Sparsity Estimation via Information Theoretic Criteria

Alexandru Onose and Bogdan Dumitrescu

A Modified Stochastic Simulation Algorithm for Time-Dependent Intensity Rates

Raluca Roxana Purnichescu Purtan and Andreea Udrea

Friday, May 31, 2013

CSCS19-S9: Advanced Applications and Services

Room EC105, Date: 31 May 2013, 11.00-12.30

Chairs: *Valentin Cristea* (University Politehnica of Bucharest, Romania), *Florin Pop* (University Politehnica of Bucharest, Romania)

2012 Presidential Elections on Twitter—An Analysis of How the US and French Election were Reflected in Tweets

Farhad Nooralahzadeh, Viswanathan Arunachalam, and Costin-Gabriel Chiru

INSPECTOR: Integrated Service Platform for Management of Academic and Research Communities over the Internet

Florin Pop, Catalin Negru, Valentin Cristea, and Nik Bessis

Using the Surrounding WEB Content of Pictures to Generate Candidates for Photo Annotation

Bogdan Niță and Luca Dan Șerbănați

QUESTOR—Automatic Searching for Reports

Andrei Vasilateanu, Nicolae Goga, Tudor Sutu, Marius Nastasescu, Alin Moldoveanu, Victor Asavei, and Cristian Taslitchi

Towards Interoperability of eHealth System Networked Components

Alexandru Soceanu, Alexandru Egner, and Florica Moldoveanu

CyRM-S1

Room EC001, Date: 31 May 2013, 11.00-12.30

Chairs: *Lucia Văcariu* (Technical University of Cluj-Napoca Cluj-Napoca, Romania), *Marian Muste* (The University of Iowa, USA)

A Service-Oriented Framework for Intelligent Building Management

Catalin Marian Chera, Serban Barbu Petrescu, and Maria Dascalu

Information-Centric Systems for Supporting Decision-Making in Watershed Resource Development

Mariana Mocanu, Lucia Văcariu, Radu Drobot, and Marian Muste

Cyberinfrastructure Architecture to Support Decision Taking in Natural Resources Management

Sorin N. Ciolofan, Mariana Mocanu, and Anca Daniela Ioniță

Modeling with SoaML Applied for Warning and Water Management Services

Anca Daniela Ioniță, Mariana Mocanu, and Sorin N. Ciolofan

IAFA-S4: New Issues in Complexity Modeling

Room EC002, Date: 31 May 2013, 11.00-12.30

Chairs: *Kyandoghene Kyamakya* (Universitaet Klagenfurt, Austria), *Radu Dogaru* (University Politehnica of Bucharest, Romania)

Opening Lecture

Kyandoghene Kyamakya (Universitaet Klagenfurt, Austria)

Applications of Emergent Computation in Reaction-Diffusion CNNs for Image Processing

Radu Dogaru

Nonlinear Dynamics in Transportation—A Comprehensive System-Theoretical Perspective

Kyandoghene Kyamakya and Jean Chamberlain Chedjou

Appraisal of Fish Behavior by Analyzing their Dynamics
C. Polonschii and E. Gheorghiu

Emerging Phenomenon Associated with a Symmetry Breaking in the Case of a Structural Inflation Model
Andrei Silviu Dospinescu, Maria Mitrofan, and Elena Pelinescu

CSCS19-S7: Embedded Control Systems

Room EC105, Date: 31 May 2013, 14.00-15.30

Chairs: *Decebal Popescu* (University Politehnica of Bucharest, Romania), *Dan Ștefan Tudose* (University Politehnica of Bucharest, Romania)

Rectifier Antenna Design for Wireless Sensor Networks
Dan Ștefan Tudose and Andrei Voinescu

Enabling Mobile Devices for Home Automation Using ZigBee
Alexandru-Corneliu Olteanu, George-Daniel Oprina, Nicolae Țăpuș, and Sven Zeisberg

Exoskeleton Design of an Intelligent Haptic Robotic Glove
Nirvana Popescu, Decebal Popescu, Mircea Ivanescu, Dorin Popescu, Cristian Vladu, Cosmin Berceanu, and Marian Poboroniuc

Networked Predictive Cruise Control for Road Vehicles
Constantin Florin Căruntu

CyRM-S2

Room EC001, Date: 31 May 2013, 14.00-15.30

Chairs: *Mariana Mocanu* (University Politehnica of Bucharest, Romania), *Octavian Creț* (Technical University of Cluj-Napoca Cluj-Napoca, Romania)

A Prototype for the Continuous and Cost-Effective Measurement of River Discharge
Paul Deac, Marian Muste, Octavian Creț, Lucia Văcariu, and Horia Hedeșiu

A Prototype for the Remote Monitoring of Water Parameters
Anca Hangan, Lucia Văcariu, Octavian Creț, and Horia Hedeșiu

Graphical User Interface Testing Optimization for Water Monitoring Applications
Gențiana Lațiu, Octavian Creț, and Lucia Văcariu

GENERAL INFORMATION

LOCATION

CSCS-19 will be held at the Faculty of Automatic Control and Computers, University *Politehnica* of Bucharest, 313 Spl. Independentei, Bucharest, Romania. The formal Opening Ceremony will be organized in the EC105 room at the Faculty of Automatic Control and Computers.

ACCESS TO CONFERENCE SITE

The Conference site can be accessed by the following means of transportation:

By underground - The Conference site is at 5 minutes walk from

Politehnica underground station

By bus - Nos. 136, 236, 336 (UPB Stop)

By trolley bus - Nos. 61, 62 (UPB Stop)

CAR PARKING

There are ample parking facilities in the immediate vicinity of the Conference site.

MAIL

Correspondence in connection to the CSCS-19 Conference should be addressed as it follows:

CSCS-19 - SRAIT

University "POLITEHNICA" of Bucharest

Faculty of Automatic Control and Computers

313 Spl. Independentei, Sector 6

77206 Bucharest, Romania

Phone: +(40) 21 402 91 67

Fax: +(40) 21 402 95 87

CONFERENCE LITERATURE

The conference bag, containing all accepted papers, will be distributed to all registered participants. All presented papers during the conference will be evaluated for future publications.

WORKING LANGUAGE

The working language of CSCS-19 is English and will be used for presentations and discussions.

NAME BADGE

An admission badge bearing the participant's name will be issued to all registered participants, thus authorizing access to all Conference sessions.

GET ACQUAINTED COCKTAIL PARTY

A Get Acquainted Cocktail Party will be held on Tuesday, May 28th 2013 from 19:00 hours at *Casa Oamenilor de Știință* Restaurant. The cost of attendance is covered by the registration fee.

REFRESHMENTS

Refreshments will be available at the Conference site daily.

LUNCHESES

Self-lunches will be available in the Faculty of Automatic Control and Computers and in the Leu Complex. The price for a lunch varies between 3 Euros and 5 Euros.

DINNER

Dinner will be served Thursday night at 19:00 hrs. All information will be available at registration desk.

REGISTRATION AND INFORMATION DESK

The CSCS-19 Registration Desk will be open at the Conference site at the Faculty of Automatic Control and Computers, starting from May 28th 2013, 13:00 hrs.

REGISTRATION FEE

Registration fee for CSCS19-2013 is **300 Euro** and includes participation, Conference proceedings and CD, coffee breaks and cocktail. The fee for PhD students is **150 Euro** (a scanned proof will be needed).

NOTE: At the CSCS19 Conference are not accepted more than 2 papers with the same single/first author. For the second paper, the registration fee is **150 Euro**.

CLIMATE

The weather in Bucharest is warm in May. Temperatures between 20°C to 30°C are to be expected.

INSURANCE

The organizers cannot be held liable for accidents to participants or for damage to or loss their personal property, howsoever caused. Participants are advised to make their own insurance arrangements.

International Conference on Control Systems and Computer Science—CSCS19

28-30 May 2013

Tuesday 28 May 2013		Wednesday 29 May 2013				Thursday 30 May 2013				Friday 31 May 2013			
13.00- 16.00	Registration	09.00- 09.30	Opening Ceremony & Registration (EC105)			09.00- 09.30	Registration			09.00- 09.30	Registration		
		09.30- 10.30	Keynote 1 (Zary Segall)			09.30- 10.30	Keynote 2 (Georgi Marko Dimirovski)			09.30- 10.30	Keynote 3 (John-Jules Meyer)		
		10.30- 11.00	Coffee Break			10.30- 11.00	Coffee Break			10.30- 11.00	Coffee Break		
		11.00- 12.30	CSCS S1 (EC105)	CPS S1 (EC001)	AgTAmI S1 (EC002)	11.00- 12.30	CSCS S6 (EC105)	SIoT S1 (EC001)	IAFA S1 (EC002)	11.00- 12.30	CSCS S9 (EC105)	CyRM S1 (EC001)	IAFA S4 (EC002)
A&C Brokerage Event		12.30- 14.00	Lunch			12.30- 14.00	Lunch			12.30- 14.00	Lunch		
13.30- 16.00	University Company Cooperation	14.00- 15.30	CSCS S2 (EC105)	CPS S2 (EC001)	AgTAmI S2 (EC002)	14.00- 15.30	CSCS S8 (EC105)	SIoT S2 (EC001)	IAFA S2 (EC002)	14.00- 15.30	CSCS S7 (EC105)	CyRM S2 (EC001)	
16.00- 16.15	Coffee Break	15.30- 16.00	Coffee Break			15.30- 16.00	Coffee Break			15.30- 16.00	Coffee Break		
16.15- 18.00	Round table	16.00- 17.30	CSCS S3 (EC105)	CSCS S4 (EC001)	CSCS S5 (EC002)	16.00- 17.30	CSCS S10 (EC105)	DS-CSCL S1 (EC001)	IAFA S3 (EC002)	16.00- 17.30	Round Table and Closing Ceremony (EC105)		
19.00- 21.00	Cocktail					19.00- 21.00	Conference Diner						