

# **2019 22nd International Conference on Control Systems and Computer Science (CSCS 2019)**

**Bucharest, Romania  
28 – 30 May 2019**



**IEEE Catalog Number: CFP1972U-POD  
ISBN: 978-1-7281-2332-5**

**Copyright © 2019 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP1972U-POD
ISBN (Print-On-Demand):	978-1-7281-2332-5
ISBN (Online):	978-1-7281-2331-8
ISSN:	2379-0474

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# 2019 22nd International Conference on Control Systems and Computer Science (CSCS) **CSCS 2019**

## Table of Contents

Message from the CSCS 2019 Conference Chairs .xviii.....	
CSCS 2019 Committees .xxi.....	
CSCS 2019 Workshops .xxv.....	

### Adaptive and Non-Linear Control

Design and Simulation Implementation for Adaptive Cruise Control Systems of Vehicles .1.....	
<i>Duc Lich Luu (University Politehnica of Bucharest), Ciprian Lupu (University Politehnica of Bucharest), and Thien Van Nguyen (Vinh University of Technology Education)</i>	
Size Adaptation of Separable Dictionary Learning with Information-Theoretic Criteria .7.....	
<i>Andra Baltoiu (University of Bucharest) and Bogdan Dumitrescu (University Politehnica of Bucharest)</i>	
Dynamics Model and Design for Adaptive Cruise Control Vehicles .12.....	
<i>Duc Lich Luu (University Politehnica of Bucharest) and Ciprian Lupu (University Politehnica of Bucharest)</i>	

### Advanced Control Strategies

Nonlinear Identification and Controller Design for the Air Levitation System .18.....	
<i>Marc-Simon Schaefer (University of Siegen), Daniela Escobar (University of Siegen), and Hubert Roth (University of Siegen)</i>	
Min-Max Coalitional Model Predictive Control Algorithm .24.....	
<i>Anca Maxim (Gheorghe Asachi Technical University of Iasi &amp; Ghent University), José M. Maestre (University of Seville), Constantin F. Caruntu (Gheorghe Asachi Technical University of Iasi), and Corneliu Lazar (Gheorghe Asachi Technical University of Iasi)</i>	
Passivity-Based Controller for Nonideal DC-to-DC Boost Converter .30.....	
<i>Vlad Mihaly (Technical University of Cluj-Napoca), Mircea Susca (Technical University of Cluj-Napoca), and Petru Dobra (Technical University of Cluj-Napoca)</i>	
Development of an Approach to a Biologically Inspired Self-Organizing Control Structure .36.....	
<i>Loránd Székely (Technical University of Cluj-Napoca), Éva-Henrietta Dulf (Technical University of Cluj-Napoca &amp; Obuda University), and Levente Kovacs (Óbuda University)</i>	

Optimal Control for Diesel Engine Combustion Regime .42.....  
*Mihaela-Ancuta Mone (University Politehnica of Bucharest), Sette Diop  
(Laboratoire des Signaux & Systemes Centrale Supelec), and Dumitru  
Popescu (University Politehnica of Bucharest)*

## Control Applications: Power Systems, Manufacturing, Agriculture

Control System Design for Unicycle Robots Using Genetic Algorithms with Pareto  
Immunization .48.....  
*Ionut Banu (University Politehnica of Bucharest) and Monica Patrascu  
(University Politehnica of Bucharest)*

A PI Controller Based on State-Feedback Algorithm for an X-Y Positioning System .56.....  
*Dora Sabau (Technical University of Cluj-Napoca) and Petru Dobra  
(Technical University of Cluj-Napoca)*

Cyber Security of Smart Grids in the Context of Big Data and Machine Learning .61.....  
*Delia Ioana Dogaru (University Politehnica Bucharest) and Ioan  
Dumitrache (University Politehnica Bucharest)*

Optimal Control for Buck Converters .68.....  
*Andrei-Alexandru Kiraly (Technical University of Cluj-Napoca) and  
Mirela Dobra (Technical University of Cluj-Napoca)*

## Cyber Physical Systems

Honeypot Inside an OPC UA Wrapper for Water Pumping Stations .72.....  
*Cerasela-Alexandra Petre (University Politehnica Timisoara) and Adrian  
Korodi (University Politehnica Timisoara)*

Customizing Pareto Simulated Annealing for Multi-Objective Optimization of Control Cabinet  
Layout .78.....  
*Sabri Pillana (Linnaeus University), Suejb Memeti (Linköping  
University), and Joanna Kolodziej (Cracow University of Technology)*

Detecting Vital Signs Using Inertial Measurement Unit Sensors in Military Applications .86.....  
*Alexandru Cismas (University Politehnica of Bucharest), Eduard Cismas  
(Carol Davila University of Medicine and Pharmacy), and Decebal  
Popescu (University Politehnica of Bucharest)*

Equivalence between Two Results Providing Polyhedral Contractive Sets for Discrete-Time  
Linear Systems with Arbitrary Switching .91.....  
*Mihaela-Hanako Matcovschi (Technical University Gheorghe Asachi of  
Iasi) and Octavian Pastravanu (Technical University Gheorghe Asachi of  
Iasi)*

## Systems and Signals

Robust Control of Benzene Distillation Column .97.....  
*Cristian Patrascioiu (Petroleum-Gas University of Ploiesti) and Marian  
Popescu (Petroleum-Gas University of Ploiesti)*

Simulating Acoustics of a Room Using MATLAB .103.....  
*Radu-Andrei Cioaca (Politehnica University of Bucharest) and Dan  
Stefanoiu (Politehnica University of Bucharest)*

Analytical Algorithms for Synthesis of PID Controllers to the Complex Objects .107.....	<i>Ion Fiodorov (Technical University of Moldova), Irina Cojuhari (Technical University of Moldova), Bartolomeu Izvoreanu (Technical University of Moldova), and Dumitru Moraru (Technical University of Moldova)</i>
Sensor Fusion for Autonomous Drone Waypoint Navigation Using ROS and Numerical P Systems: A Critical Analysis of Its Advantages and Limitations .112.....	<i>Andrei George Florea (Politehnica University of Bucharest) and Catalin Buiu (Politehnica University of Bucharest)</i>

## Distributed Computing

Acceleration Techniques for Fully-Homomorphic Encryption Schemes .118.....	<i>Cristian Lupascu (Military Technical Academy Ferdinand I), Mihai Togan (Military Technical Academy Ferdinand I), and Victor-Valeriu Patriciu (Military Technical Academy Ferdinand I)</i>
Data Gathering Optimization in Wireless Sensor Networks Using Unmanned Aerial Vehicles .123	<i>Valentin-Alexandru Vladuta (Military Technical Academy), Ioana Matei (Military Technical Academy), and Ion Bica (Military Technical Academy)</i>
Parameters Weighting in Elderly Monitoring Based on Multi-Criteria Methods .131.....	<i>Ciprian Dobre (National Institute for Research and Development in Informatics), Constanta Zoie Radulescu (National Institute for Research and Development in Informatics), and Lidia Bajenaru (National Institute for Research and Development in Informatics)</i>
Hardware and Software Architecture for Accelerating Hash Functions Based on SoC .136.....	<i>Ovidiu Panait (University Dunarea de Jos of Galati), Luminita Dumitriu (University Dunarea de Jos of Galati), and Ioan Susnea (University Dunarea de Jos of Galati)</i>

## Cloud and Grid Computing

An Analysis of Service Level Agreement Parameters and Scheduling in Multi-Tenant Cloud Systems .140.....	<i>George Iordache (University Politehnica of Bucharest)</i>
Security-Oriented Framework for Internet of Things Smart-Home Applications .146.....	<i>Bogdan-Cosmin Chifor (Military Technical Academy Ferdinand I), Stefan-Ciprian Arseni (Military Technical Academy Ferdinand I), Ioana Matei (Military Technical Academy Ferdinand I), and Ion Bica (Military Technical Academy Ferdinand I)</i>
IoT-Based Healthcare Remote Monitoring Platform for Elderly with Fog and Cloud Computing .154	<i>Adriana Alexandru (National Institute for Research and Development in Informatics), Dora Coardos (National Institute for Research and Development in Informatics), and Eleonora Tudora (National Institute for Research and Development in Informatics)</i>
COSMOS - Framework for Combining Optimization and Simulation Software .162.....	<i>Cosmin-Gabriel Samoila (University Politehnica of Bucharest) and Emil-Ioan Slusanschi (University Politehnica of Bucharest)</i>

## Big Data and Analytics

- Anomaly Detection for Time Series Infrastructure Metric Data .170.....  
*Stefan-Lucian Bucur (Politehnica University of Bucharest) and Florica Moldoveanu (Politehnica University of Bucharest)*
- Noise Removal from ECG Signal Based on Filtering Techniques .176.....  
*Mohammed Tali Almalchy (University Politehnica of Bucharest), Vlad Ciobanu (University Politehnica of Bucharest), and Nirvana Popescu (University Politehnica of Bucharest)*
- A Study on Data Accuracy for IoT Measurements of PMs Concentration .182.....  
*Mihaela Balanescu (Beia Consult International), Iulia Oprea (University Politehnica of Bucharest), George Suciu (Beia Consult International), Marius-Alexandru Dobrea (Beia Consult International), Cristina Balaceanu (Beia Consult International), Radu-Ioan Ciobanu (University Politehnica of Bucharest), and Ciprian Dobre (University Politehnica of Bucharest)*
- Systems Monitoring and Big Data Analysis Using the Elasticsearch System .188.....  
*Vlad-Andrei Zamfir (University Politehnica of Bucharest), Mihai Carabas (University Politehnica of Bucharest), Costin Carabas (University Politehnica of Bucharest), and Nicolae Tapus (University Politehnica of Bucharest)*
- Faster and Scalable Parallel Processing Solution to Remove Visual Obstacles from Satellite Imagery .194.....  
*Andra-Teodora Ilie (University Politehnica of Bucharest), Ion-Dorinel Filip (University Politehnica of Bucharest), Andrei Vlad Postoaca (University Politehnica of Bucharest), Catalin Negru (University Politehnica of Bucharest), Florin Pop (University Politehnica of Bucharest & National Institute for Research and Development in Informatics), Adrian Stoica (Terrasigna), and Florin Serban (Terrasigna)*

## Computer Vision and Computer Graphics

- Collecting and Processing a Self-Driving Dataset in the UPB Campus .202.....  
*Andrei Nica Nica (University Politehnica Bucharest), Mihai Trascau (University Politehnica Bucharest), Alexandru Andrei Rotaru (University Politehnica Bucharest), Constantin Andreescu (University Politehnica Bucharest), Alexandru Sorici (University Politehnica Bucharest), Adina Magda Florea (University Politehnica Bucharest), and Vlad Bacue (Prime Motors Industries)*
- An Intelligent Personalized Fashion Recommendation System .210.....  
*Cristiana Stan (University Politehnica of Bucharest) and Irina Mocanu (University Politehnica of Bucharest)*
- Combining Neural Networks and Global Gabor Features in a Hybrid Face Recognition System .216  
*Catalin-Mircea Dumitrescu (Politehnica University of Bucharest) and Ioan Dumitrache (Politehnica University of Bucharest)*
- Experimental Analysis of Visual Cortex Activity - An EEG Study .223.....  
*Florina Ungureanu (Gheorghe Asachi Technical University of Iasi), Robert Gabriel Lupu (Gheorghe Asachi Technical University of Iasi), and Andrei Rasvan Romila (Gheorghe Asachi Technical University of Iasi)*

## Advanced Computation Techniques

- Towards Enabling Context-as-a-Service for Social Assistive Robotics .228.....  
*Alexandru Sorici (University Politehnica of Bucharest), Andrei Olaru (University Politehnica of Bucharest), Stelian Fonta (Technical University of Cluj-Napoca), Enyedi Szilard (Technical University of Cluj-Napoca), and Adina Magda Florea (University Politehnica of Bucharest)*
- Kangaroo Mob Heuristic for Optimizing Features Selection in Learning the Daily Living Activities of People with Alzheimer's .236.....  
*Dorin Moldovan (Technical University of Cluj-Napoca), Ionut Anghel (Technical University of Cluj-Napoca), Tudor Cioara (Technical University of Cluj-Napoca), Ioan Salomie (Technical University of Cluj-Napoca), Viorica Chifu (Technical University of Cluj-Napoca), and Cristina Pop (Technical University of Cluj-Napoca)*
- Patient Flow Control Using Multi-Agent Systems .244.....  
*Cosmin Gabriel Toader (Politehnica University of Bucharest), Nirvana Popescu (Politehnica University of Bucharest), Ioana Alina Teodorescu (Clinical Emergency Hospital Sf. Pantelimon of Bucharest), Alin Daniel Toader (Carol Davila University of Medicine), and Stefan Busnatu (Clinical Emergency Hospital Bagdasar-Arseni Bucharest)*
- A Flexible and Lightweight Agent Deployment Architecture .251.....  
*Andrei Olaru (University Politehnica of Bucharest), Alexandru Sorici (University Politehnica of Bucharest), and Adina Magda Florea (University Politehnica of Bucharest)*

## System Engineering and Theory

- Enhancing Bayes' Probabilistic Decision Support with a Fuzzy Approach .259.....  
*Panagiotis Christias (University Politehnica of Bucharest) and Mariana Mocanu (University Politehnica of Bucharest)*
- Using Non-Functional Requirements to Identify Cross-Cutting Concerns .264.....  
*Calin Eugen Nicolae Gal-Chis (Universitatea Emanuel Oradea) and Bazil Pârv (Babes-Bolyai University Cluj-Napoca)*
- Interactive Visual Modeling with Applications in Jewelry Design .272.....  
*Roxana Draganoiu (Politehnica University of Bucharest), George Anescu (Politehnica University of Bucharest), Florica Moldoveanu (Politehnica University of Bucharest), and Alin Moldoveanu (Politehnica University of Bucharest)*
- Real-Time Segmentation of Depth Map Frames on Mobile Devices .280.....  
*Florica Moldoveanu (University Politehnica of Bucharest), Andrei Ciobanu (University Politehnica of Bucharest), Anca Morar (University Politehnica of Bucharest), Alin Moldoveanu (University Politehnica of Bucharest), and Victor Asavei (University Politehnica of Bucharest)*

## Security

- Control Flow Integrity Based on Controlled Channel .288.....  
*Radu-Alexandru Mantu (University Politehnica of Bucharest), Dan Sporici (University Politehnica of Bucharest), and Mihai-Daniel Chiroiu (University Politehnica of Bucharest)*

Android Control Flow Obfuscation Based on Dynamic Entry Points Modification .296.....	Xueyi Yang (University of Chinese Academy of Sciences & Data Assurance and Communication Security Research Center), Lingchen Zhang (Data Assurance and Communication Security Research Center), Cunqing Ma (Data Assurance and Communication Security Research Center), Zongbin Liu (Data Assurance and Communication Security Research Center), and Ping Peng (Institute of Information Engineering)
Password Guessing Using Machine Learning on Wearables .304.....	Alexandru-Ionut Pandealea (University Politehnica of Bucharest) and Mihai-Daniel Chiroiu (University Politehnica of Bucharest)
Security Evaluation of Wordpress Backup Plugins .312.....	Ionut-Cosmin Cernica (University Politehnica of Bucharest), Nirvana Popescu (University Politehnica of Bucharest), and Bogdan Tiganoaia (University Politehnica of Bucharest)
Observations over SPROBES Mechanism on the TrustZone Architecture .317.....	Jan-Alexandru Vaduva (University Politehnica of Bucharest), Stefan Dascalu (Military Technical Academy of Bucharest), Iulia-Maria Florea (University Politehnica of Bucharest), Iulia Culic (University Politehnica of Bucharest), and Razvan Rughinis (University Politehnica of Bucharest)
Detection of Suspicious Connections on Android Mobile Devices .323.....	Dragos-Florin Costea (University Politehnica of Bucharest) and Nicolae Tapus (University Politehnica of Bucharest)
Security Improvements for IoT Data Acquisition Process .329.....	Stefan-Alexandru Aldoiu (University Politehnica of Bucharest) and Nicolae Tapus (University Politehnica of Bucharest)
Energy Considerations Regarding Transport Layer Security in Wireless IoT Devices .337.....	Razvan Tataroiu (University Politehnica of Bucharest), Florin-Alexandru Stancu (University Politehnica of Bucharest), and Dumitru-Cristian Tranca (University Politehnica of Bucharest)

## **ACSG 2019: International Workshop on Advance Control in Smart Grid**

Demand Dispatch for the Distribution Grid – A Proposal for the Romanian Power System .342....	Nicoleta Arghira (University Politehnica of Bucharest), Ioana Fagarasan (University Politehnica of Bucharest), Cristina Nichiforov (University Politehnica of Bucharest), Sergiu Stelian Iliescu (University Politehnica of Bucharest & Academy of Romanian Scientists), Iulia Stamatescu (University Politehnica of Bucharest), Vasile Calofir (University Politehnica of Bucharest), and Nicoleta Daniela Ignat (University Politehnica of Bucharest)
Assessment of Hydropower Plants Energy Production Cost Influenced by Operational Decisions and Control Strategy .347.....	Ionut Bogdan Stoenescu (University Politehnica of Bucharest), Sorina Costinas (University Politehnica of Bucharest), and Gheorghe Marius Deaconu (University Politehnica of Bucharest)
Modern Reactive Power Compensation for Smart Electrical Grids .353.....	Doina Ilisiu (CNTEE Transelectrica S.A.) and Elena-Daniela Dinu (CNTEE Transelectrica S.A.)
Volt/VAr Control Application for Grid Connected Photovoltaic Systems .358.....	Mihai Andrei Ionescu (University Politehnica of Bucharest)



The Influence of Digital Communications in Protection Schemes .363.....	<i>Anamaria Iamandi (University Politehnica of Bucharest), Nicoleta Arghira (University Politehnica of Bucharest), Iulia Cristina Constantin (CNTEE Transelectrica S.A.), and Sergiu Stelian Iliescu (University Politehnica of Bucharest)</i>
Simulator for Automation and Control Systems in a Power System .369.....	<i>Vasile Calofir (University Politehnica of Bucharest), Ioana Fagarasan (University Politehnica of Bucharest), Nicoleta Arghira (University Politehnica of Bucharest), Mircea Stefan Simoiu (University Politehnica of Bucharest), Grigore Stamatescu (University Politehnica of Bucharest), Cristina Nichiforov (University Politehnica of Bucharest), and Sergiu Stelian Iliescu (University Politehnica of Bucharest)</i>
Microgrid System for a Residential Ensemble .375.....	<i>Mihaela Vasluianu (Technical University of Civil Engineering of Bucharest), Oana Carmen Niculescu Faida (Technical University of Civil Engineering of Bucharest), Ramona-Oana Flangea (Technical University of Civil Engineering of Bucharest), Neculoiu Giorgian (Technical University of Civil Engineering of Bucharest), and Mariana Marinescu (Technical University of Civil Engineering of Bucharest)</i>

## **CSE-Edu 2019: International Workshop on Trends in Computer Science and Engineering Education**

Knowing, Believing and Thinking We Know .380.....	<i>Petre Dimo (University Politehnica of Bucharest)</i>
Artificial Intelligence and Education .381.....	<i>Adina Magda Florea (University Politehnica of Bucharest) and Serban Radu (University Politehnica of Bucharest)</i>
Distributed Systems Education: From Traditional Models to New Paths of Learning .383.....	<i>Florin Pop (University Politehnica of Bucharest &amp; National Institute for Research and Development in Informatics) and Valentin Cristea (University Politehnica of Bucharest)</i>
Brain-Computer Interface: Challenges and Research Perspectives .387.....	<i>Robert Gabriel Lupu (Gheorghe Asachi Technical University of Iasi), Florina Ungureanu (Gheorghe Asachi Technical University of Iasi), and Corina Cimpanu (Gheorghe Asachi Technical University of Iasi)</i>
Understanding and Addressing Change in Computer Science Education .395.....	<i>Rodica Potolea (Technical University of Cluj-Napoca) and Camelia Lemnaru (Technical University of Cluj-Napoca)</i>
Insights and Perspectives in Computer Science and Engineering Education .398.....	<i>Mariana Mocanu (University Politehnica of Bucharest)</i>

## **DS-CSCL 2019: International Workshop on Design and Spontaneity in Computer-Supported Collaborative Learning**

Advanced Customer Activity Prediction Based on Deep Hierarchic Encoder-Decoders .403.....	<i>Andrei Damian (Lummetry.AI), Laurentiu Piciu (Lummetry.AI), Sergiu Turlea (Lummetry.AI), and Nicolae Tapus (University Politehnica of Bucharest)</i>
---	---

Analysis of Trends in Online Romanian News Using Semantic Models .410.....	<i>Andrei Simion (University Politehnica of Bucharest), Mihai Dascalu (University Politehnica of Bucharest), and Stefan Trausan-Matu (University Politehnica of Bucharest)</i>
Towards a Deep Speech Model for Romanian Language .416.....	<i>Marilena Panaite (University Politehnica of Bucharest), Stefan Ruseti (University Politehnica of Bucharest), Mihai Dascalu (University Politehnica of Bucharest), and Stefan Trausan-Matu (University Politehnica of Bucharest)</i>
PIAM - Intelligent Platform for Retrieving Relevant Information on Drugs Marketed in Romania .420.....	<i>Orlando-Georgian Ene (University Politehnica of Bucharest), Maria-Dorinela Sirbu (University Politehnica of Bucharest), Mihai Dascalu (University Politehnica of Bucharest), Stefan Trausan-Matu (University Politehnica of Bucharest), and Alexandru Costin Nuta (All Business Management S.R.L.)</i>
Sleep Tracking Apps' Design Choices: A Review .426.....	<i>Alexandra Hosszu (University of Bucharest), Daniel Rosner (University Politehnica of Bucharest), and Michael Flaherty (Eckerd College)</i>
Sharing and Privacy in Dating Apps .432.....	<i>Maria-Valentina Stoicescu (University of Bucharest), Stefania Matei (University of Bucharest), and Razvan Rughinis (University Politehnica of Bucharest)</i>
Cyber-Security Profiles of European Users: A Survey .438.....	<i>Raisa-Gabriela Zamfirescu (University of Bucharest), Cosima Rughinis (University of Bucharest), Alexandra Hosszu (University of Bucharest), and Darie Cristea (University of Bucharest)</i>

## **ECI 2019: International Workshop on New Trends in Energy, Computer Communications, and Image Retrieval**

Study the Effect of Integrating the Solar Energy Source on Stability of Electrical Distribution System .443.....	<i>Ziyad Hussien Salih (Tikrit University), Ghanim Thiab Hasan (Tikrit University), Mostafa Abdulghafoor Mohammed (University Polytechnic of Bucharest), Marwan Ali Shnan Klib (University Malaysia Pahang), Ahmed Hussien Ali (AL Salam University College), and Ruwaida A. Ibrahim (University of Diyala)</i>
Comparative Analysis between Solar and Wind Turbine Energy Sources in IoT Based on Economical and Efficiency Considerations .448.....	<i>Nada Qasim Mohammed (University Malaysia Perlis), Mohammed Swish Ahmed (Tikrit University), Mostafa Abdulghafoor Mohammed (University Polytechnic of Bucharest), Omar A. Hammood (University Malaysia Pahang), Hayder Ali Nema Alshara (Ministry of Higher Education and Scientific Research Baghdad), and Aya Ahkam Kamil (Middle Technical University Baghdad)</i>
Design of Flexible Planar Antennas Using Substrate Gap Structure for Surface Wave Reduction .453.....	<i>Bashar Qas Elias (Universiti Malaysia Perlis), Mohammad Alsajri (Universiti Malaysia Pahang &amp; Aliraqia University), Ping Jack Soh (Universiti Malaysia Perlis), and Azremi Abdullah Al-hadi (Universiti Malaysia Perlis)</i>

- Impact of Light Pulses Generator in Communication System Application by Utilizing Gaussian Optical Pulse .459.....  
*Hussam Dheaa Kamel Al-janabi (Al Mustafa University College), Haider Dheyaa Kamil Al-janabi (Al Nisour University College), and Raed Abdulkareem Hasan Al-Bukamrh (Universiti Malaysia Pahang)*
- Broadband Services on Power Line Communication Systems: A Review .465.....  
*Salih Hassan Mahmood (Northern Technical University Iraq), Abdulkreem Mohammed Salih (Northern Technical University Iraq), and Muhammed Ismail Khalil (Northern Technical University Iraq)*

## **ENV 2019: International Workshop on Environment Control Systems**

- Information-Modeling Instrumental System for the Water Resource Diagnostics .471.....  
*Costica Nitu (University Politehnica of Bucharest), Alexandru Dumitrascu (University Politehnica of Bucharest), Vladimir F. Krapivin (Russian Academy of Sciences), Ferdenant A. Mkrtchyan (Russian Academy of Sciences), and Vladimir Yu. Soldatov (Russian Academy of Sciences)*
- Algorithm for Decision Making and Big Data Processing .478.....  
*Costica Nitu (University Politehnica of Bucharest), Anda Sabena Dobrescu (University Politehnica of Bucharest), Vladimir F. Krapivin (Kotelnikov Institute of Radioengineering and Electronics), and Vladimir Yu. Soldatov (Kotelnikov Institute of Radioengineering and Electronics)*
- Designing Distributed, Scalable and Extensible System Using Reactive Architectures .484.....  
*Vasile M. Tovarnitchi (University Politehnica of Bucharest)*
- Intelligent Wireless Sensor Network Applications in Cloud Era .489.....  
*Vasile M. Tovarnitchi (University Politehnica of Bucharest)*
- Intelligent Measuring System Using Network Wireless Sensors for Structural Diagnostics .492....  
*Eusebiu Pruteanu (Vasile Alecsandri University) and Petru Gabriel (HTS SRL)*

## **IAFA 2019: 9th International Workshop on Interdisciplinary Approaches in Fractal Analysis**

- Proprioception and Postural Stability of the Young Adult Human: Multifractal Analysis .496.....  
*Nebojsa Milosevic (University of Belgrade), Herbert Jelinek (Charles Sturt University), Nemanja Rajkovic (University of Belgrade), and Luke Donnan (Charles Sturt University)*
- The Binary Images of Aspiny Neurons from the Human Neostriatum: Cluster Classification Using Parameters of Monofractal Analysis .501.....  
*Nebojsa Milosevic (University of Belgrade), Velicko Vranes (Instituto Tecnológico de Santo Domingo), and Damjan Stojic (University of Belgrade)*
- Experimental Measurement of Pain Stimulus Effects in Skin Impedance .507.....  
*Maria Ghita (Ghent University & Flanders Make), Mihaela Ghita (Ghent University & Flanders Make), Dana Copot (Ghent University & Flanders Make), Martine Neckebroek (Ghent University Hospital), and Clara M. Ionescu (Ghent University & Flanders Make & Technical University of Cluj-Napoca)*

Fractal Matrix and Morphological Analysis of Retinal Vascular Regions .515.....	
	<i>Irina Andra Tache (University Politehnica of Bucharest), Dumitru Popescu (University Politehnica of Bucharest), and Ruxandra-Andreea Codreanu (University Politehnica of Bucharest)</i>
The Effect of Mechanical Forces on the Morphology of a Lung Epithelial Cell Line .521.....	
	<i>Tanbir Najrana (Brown University), Juan Sanchez-Esteban (Brown University), and Rasha Abu Eid (University of Aberdeen)</i>
Multi-Camera Video Surveillance .525.....	
	<i>Alexandru Costache (University Politehnica of Bucharest), Dan Popescu (University Politehnica of Bucharest), Cosmin Popa (Ingenios SRL), and Stefan Mocanu (University Politehnica of Bucharest)</i>
Simulation Based of Comparative Study of Routing Protocols for Real Time Applications .531.....	
	<i>Andrei-Cristian Nastase (Valahia University of Targoviste), Gabriel Predusca (Valahia University of Targoviste), Dan-Constantin Puchianu (Valahia University of Targoviste), Liana-Denisa Circiumarescu (Valahia University of Targoviste), and Nicoleta Angelescu (Valahia University of Targoviste)</i>
Leveraging Industrial Communication in Technical Training Systems .536.....	
	<i>Viorel Mihai (University Politehnica of Bucharest), Razvan Adrian Luchian (University Politehnica of Bucharest), Cristian Dragana (University Politehnica of Bucharest), and Dan Popescu (University Politehnica of Bucharest)</i>
Image Based Fault Detection Algorithm for Flexible Industrial Assembly Line .541.....	
	<i>Jan-Iliuta-Romeo Cojocar (University Politehnica of Bucharest), Dan Popescu (UPB), and Loretta Ichim (University Politehnica of Bucharest)</i>
DEW: A New Edge Computing Component for Distributed Dynamic Networks .547.....	
	<i>Giorgiana Cristescu (Politehnica University Bucharest), Radu Dobrescu (Politehnica University Bucharest), Oana Chenaru (Politehnica University Bucharest), and Gheorghe Florea (Societatea de Inginerie Sisteme SIS SA)</i>
Towards the Development of Autonomous Wheelchair .552.....	
	<i>Mihai Craciunescu (University Politehnica of Bucharest), Diana Baicu (University Politehnica of Bucharest), Maria Circiumaru (University Politehnica of Bucharest), Stefan Mocanu (University Politehnica of Bucharest), and Radu Dobrescu (University Politehnica of Bucharest)</i>
Risk Analysis and Control .558.....	
	<i>Ana Maria Chiriac (Ingenios.Ro), Stefan Mocanu (University Politehnica of Bucharest), and Andrei Lacatusu (Ingenios.Ro)</i>
Distributed Concurrent Actor Models with Akka.NET and CAF .563.....	
	<i>Maximilian Nicolae (University Politehnica of Bucharest) and Alexandru Mihai Vulcan (University Politehnica of Bucharest)</i>
Modeling Crowd Dynamics in a Multi-Agent Based Evacuation Simulation System .569.....	
	<i>Adrian-Costin Tundrea (Politehnica University)</i>
Universal Resource Management and Logistics Using Blockchain Technology .575.....	
	<i>Manuel Adelin Manolache (Universitatea Politehnica Bucuresti) and Nicolae Tapus (Universitatea Politehnica Bucuresti)</i>
Fractal Analysis on the Football Pitch .583.....	
	<i>Levente Simon (Babes-Bolyai University &amp; Eotvos Loránd University) and Anna Soós (Babes-Bolyai University)</i>

Dedicated Algorithms for Risk Minimization in Suspicious Financial Transactions .586.....	<i>Cornel Ion Serban (Bucharest University of Economic Studies), Cosmin Popa (Ingenios.RO), Stefan Mocanu (University Politehnica of Bucharest), and Daniela Saru (University Politehnica of Bucharest)</i>
Fractal Techniques in Health Information Systems Management: Can They Be Used? .592.....	<i>Cristina Elena Poenaru (University Politehnica of Bucharest) and Radu Dobrescu (University Politehnica of Bucharest)</i>
Considerations about miRNA and Diseases Networks .598.....	<i>Radu Angelescu (University Politehnica Bucharest) and Stefan Popa (University Politehnica Bucharest)</i>

## **IWoCPS 2019: 8th International Workshop on Cyber Physical Systems**

A Cyber-Physical Systems Oriented Platform Using Web Services .602.....	<i>Eugen Pop (SC IPA SA Bucharest) and Daniela Gifu (Romanian Academy-Iasi)</i>
Mobile Robots Applied on Virtual and Real Environments .610.....	<i>Luige Vladareanu (Romanian Academy), Victor Vladareanu (Romanian Academy), Octavian Melinte (Romanian Academy), Mihai Radulescu (Romanian Academy), Marius Pandelea (Romanian Academy), and Alexandra Catalina Ciocirlan (Romanian Academy)</i>
A Cyber-Physical Approach in Heterogeneous Communication Networks .616.....	<i>Mihnea Alexandru Moisescu (University Politehnica of Bucharest), Ioan Stefan Sacala (University Politehnica of Bucharest), Ioan Dumitrache (University Politehnica of Bucharest), Simona Iuliana Caramihai (University Politehnica of Bucharest), Nicolae Constantin (University Politehnica of Bucharest), Bogdan Barbulescu (Digital Bit SRL), and Marius Danciuc (Digital Bit SRL)</i>
Services Integration for Cyber Physical Systems .622.....	<i>Eugen Pop (SC IPA SA), Daniela Gifu (University Alexandru Ioan Cuza of Iasi), Ioan Stefan Sacala (University Politehnica of Bucharest), Simona Iuliana Caramihai (Universitatea Politehnica din Bucuresti), Mihnea Alexandru Moisescu (Universitatea Politehnica din Bucuresti), and Dragos Repta (Universitatea Politehnica din Bucuresti)</i>
Neuro-Fuzzy Traffic Signal Control in Urban Traffic Junction .629.....	<i>Andrei Nae (University Politehnica Bucharest) and Ioan Dumitrache (University Politehnica Bucharest)</i>

## **MEDEA 2019: International Workshop on Monitoring and Evidence-Based Protocols, Applications and Platforms for Active Living and Aging**

Improving the Quality of Life for Older People: From Smart Sensors to Distributed Platforms .636.....	<i>Ciprian Dobre (National Institute for Research and Development in Informatics Bucharest), Lidia Bajenaru (National Institute for Research and Development in Informatics Bucharest), Ion Alexandru Marinescu (National Institute for Research and Development in Informatics Bucharest), and Mihaela Tomescu (National Institute for Research and Development in Informatics Bucharest)</i>
---	--

Enhanced Framework for an Elderly-Centred Platform: Big Data in Monitoring the Health Status .643.....	<i>Ovidiu-Lucian Bajenaru (University of Medicine and Pharmacy Carol Davila) and Adrian-Mihai Custura (National Institute for Research and Development in Informatics Bucharest)</i>
Latent Profile Analysis in Health Research: A Case Study .649.....	<i>Marilena Ianculescu (National Institute for Research and Development in Informatics), Alexandru Balog (National Institute for Research and Development in Informatics), Irina Cristescu (National Institute for Research and Development in Informatics), Dragos-Daniel Iordache (National Institute for Research and Development in Informatics), and Lidia Bajenaru (National Institute for Research and Development in Informatics)</i>
IoHT and Edge Computing, Warrants of Optimal Responsiveness of Monitoring Applications for Seniors. A Case Study .655.....	<i>Marilena Ianculescu (National Institute for Research and Development in Informatics), Adriana Alexandru (National Institute for Research and Development in Informatics), Nicolae-Dragos Nicolau (National Institute for Research and Development in Informatics), Gabriel Neagu (National Institute for Research and Development in Informatics), and Ovidiu Bica (National Institute for Research and Development in Informatics)</i>
Health Monitoring Management Solution Centred on the Cloud of Things Service Integrator .662.	<i>Gabriel Neagu (National Institute for Research and Development in Informatics Bucharest), Vladimir Florian (National Institute for Research and Development in Informatics Bucharest), and Madalina Zamfir (National Institute for Research and Development in Informatics Bucharest)</i>

## **RoboEdge 2019: International Workshop on Robots, Artificial Intelligence, and Digital Society in Cloud/Edge Platforms**

Towards a Modular Framework for Human-Robot Interaction and Collaboration .667.....	<i>Alexandru-Florin Gavril (Politehnica University of Bucharest), Alexandra Stefania Ghita (Politehnica University of Bucharest), Alexandru Sorici (Politehnica University of Bucharest), and Adina Magda Florea (Politehnica University of Bucharest)</i>
Human Action Recognition for Social Robots .675.....	<i>Mihai Nan (University Politehnica Bucharest), Alexandra Stefania Ghi (University Politehnica Bucharest), Alexandru-Florin Gavril (University Politehnica Bucharest), Mihai Trascau (University Politehnica Bucharest), Alexandru Sorici (University Politehnica Bucharest), Bogdan Cramariuc (Centrul IT pentru Stiinta si Tehnologie), and Adina Magda Florea (University Politehnica Bucharest)</i>
Making Pepper Understand and Respond in Romanian .682.....	<i>Dan Tufis (Research Institute for Artificial Intelligence M. Draganescu), Verginica Barbu Mititelu (Research Institute for Artificial Intelligence M. Draganescu), Elena Irimia (Research Institute for Artificial Intelligence M. Draganescu), Maria Mitrofan (Research Institute for Artificial Intelligence M. Draganescu), Radu Ion (Research Institute for Artificial Intelligence M. Draganescu), and George Cioroiu (Research Institute for Artificial Intelligence M. Draganescu)</i>

Automatic Mapping of a Room Using LIDAR-Based Measuring Sensor .689.....	<i>Vlad-Ilie Ungureanu (Politehnica University of Timisoara), Bianca-Alexandra Trutiu (Politehnica University of Timisoara), Ioan Silea (Politehnica University of Timisoara), Paul Negîrla (Politehnica University of Timisoara), Cristian Zimbru (Politehnica University of Timisoara), and Razvan-Catalin Miclea (Politehnica University of Timisoara)</i>
Adaptive Fractional Order Control Applied to a Multi-Rotor System .696.....	<i>Éva-Henrietta Dulf (Technical University of Cluj-Napoca), Daniel D. Timis (Technical University of Cluj-Napoca), Lorand Szekely (Technical University of Cluj-Napoca), and Liviu C. Miclea (Technical University of Cluj-Napoca)</i>
Control a 6DOF Anthropomorphic Robotic Structure with Computer Vision as MEMS Input .700..	<i>Alexandru Pop (Technical University of Cluj-Napoca) and Ovidiu Stan (Technical University of Cluj-Napoca)</i>

## **SSeCC 2019: International Workshop on Smart Services for Edge and Cloud Computing**

Shaping the Digital Citizen into a Smart Citizen on the Basis of IoT Capabilities .707.....	<i>Adriana Alexandru (National Institute for Research and Development in Informatics), Marilena Ianculescu (National Institute for Research and Development in Informatics), Ion Alexandru Marinescu (National Institute for Research and Development in Informatics), and Theodor Dan Popescu (National Institute for Research and Development in Informatics)</i>
Pedestrian Congestion Monitoring Platform .715.....	<i>Nicoleta-Denisa Bortanoiu (University Politehnica of Bucharest), Teodora-Maria Goran (University Politehnica of Bucharest), Loredana-Marsilia Groza (University Politehnica of Bucharest), and Roxana-Gabriela Stan (University Politehnica of Bucharest)</i>
Data Loss Prevention and Data Protection in Cloud Environments Based on Authentication Tokens .720.....	<i>Vlad Bucur (Technical University of Cluj-Napoca), Ovidiu Stan (Technical University of Cluj-Napoca), and Liviu C. Miclea (Technical University of Cluj-Napoca)</i>
Apache Spark and Apache Ignite Performance Analysis .726.....	<i>Cristiana-Stefania Stan (University Politehnica of Bucharest), Adrian-Eduard Pandelica (University Politehnica of Bucharest), Vlad-Andrei Zamfir (University Politehnica of Bucharest), Roxana-Gabriela Stan (University Politehnica of Bucharest), and Catalin Negru (University Politehnica of Bucharest)</i>

<b>Author Index .735</b> .....	
--------------------------------	--