

13<sup>th</sup> INTERNATIONAL CONFERENCE  
on  
ELECTRONICS, COMPUTERS  
and ARTIFICIAL INTELLIGENCE  
ECAI 2021, July 1– July 3, 2021



PROGRAM

hosted by  
UNIVERSITY OF PITESTI, Pitesti, Romania

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## ECAI 2021, July 1– July 3, 2021

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# PROGRAM

**Wednesday, June 30, 2021**

Wednesday, June 30, *Registration of the participants*

**Thursday, July 1, 2021**

July 1, 8:00-8:50,

*Registration of the participants in the official opening e-meeting*

Technical chair: *Cristian Monea*

## **July 1, 9:00-9:40, OFFICIAL OPENING**

09:00-09:40 *Welcome and Opening Addresses*

09:00-09:05 Welcome message of Nicu BIZON,  
Chair of ECAI 2021, UNIVERSITY OF PITESTI

09:05-09:10 Welcome message of Dumitru CHIRLESAN,  
Rector of the UNIVERSITY OF PITESTI

09:10-09:15 Welcome message of Georges ZISSIS,  
UNIVERSITY OF TOULOUSE 3, LAPLACE laboratory  
Chair of the IEEE Industry Applications Society

09:15-09:20 Welcome message of Laurentiu IONESCU,  
Dean of the Faculty of Electronics, Communications and Computers,  
UNIVERSITY OF PITESTI

09:20-09:25 Welcome message of Cristian NEGRESCU,  
POLITEHNICA UNIVERSITY OF BUCHAREST  
Chair of the IEEE Romanian section

09:25-09:30 Welcome message of Radu-Emil PRECUP,  
ROMANIAN ACADEMY (C.M.), POLITEHNICA UNIVERSITY OF  
TIMISOARA

09:30-09:35 Welcome message of Takeshi YAMAKAWA,  
Honorary Chair of the ECAI conference

09:35-09:40 Welcome message of Partners and Sponsors



9:40-9:45, Registration of the participants in the KEYNOTE I e-session

**July 1, 09:40-12:00, ECAI KEYNOTE LECTURES – I,**

Chairs: Horia ANDREI and Ioan LITA

Technical chair: Mihai Oproescu

09:45-10:25, Georges ZISSIS

Toward to “Lighting 4.0” era – The “Right Smart Lighting” Challenge as prime contributor to World’s Sustainable Development goals

10:25-11:05, Abdel-Badeeh M. SALEM

Intelligent Science: Artificial Intelligence Paradigms and Applications

11:05-11:45, Emmanuel KARAPIDAKIS

Exploring the Viability of Hybrid Power Plants (based on the Renewable Energy Sources and Batteries) in Contemporary Electricity Markets

**July 1, 12:00-14:30, ECAI Morning sessions**

11:50-12:00 Registration of the participants in the ECAI Morning sessions

<b>Artificial Intelligence, including Expert systems – I</b>
<i>Chairs: Cristian Monea and Victor-Emil Neagoe</i>
<i>Technical chair: Cristian Monea</i>
12:00-12:15 ; Cristian Monea , Application of reinforcement learning for NQR excitation sequence optimization
12:15-12:30 ; Anshu Murdan and Aashish Joyram , An IoT based solar powered aquaponics system
12:30-12:45 ; Maria-Alexandra Grigore and Victor-Emil Neagoe , A Deep CNN Approach Using Thermal Imagery for Breast Cancer Diagnosis
12:45-13:00 ; Tamás Majoros and Stefan Oniga , Activity recognition using consumer-grade EEG device
13:00-13:15 ; Alexandru-Ionel Soltuz and Victor-Emil Neagoe , Facial Thermal Image Analysis with Deep Convolutional Neural Network Architectures for Subject Dependent Drunkenness Diagnosis
13:15-13:30 ; Hatice Şahin Akdaş, Onder Demir, Buket Doğan, Anil Bas and Banu Çalış Uslu , Vehicle Route Optimization for Solid Waste Management: A Case Study of Maltepe, Istanbul
13:30-13:45 ; Felix G. Hamza-Lup, Ionut E. Iacob and James Orgeron , Finding approximate analytical solutions of differential equations using neural networks with self-adaptive training sets
13:45-14:00 ; Silvia Ovreiu, Elena Paraschiv and Elena Ovreiu , Deep Learning & Digital Fundus Images: Glaucoma Detection using DenseNet
14:00-14:15 ; Aurelian Costea, Paul Şchiopu and Aurica Farcaş , Design of HPLS Laser System Self Alignment Beam Pointing Integrated Solution
14:15-14:30 ; Rohan Parkar, Yash Payare, Jitesh Nambiar, Keyur Mithari and Jaya Gupta , AI And Web-Based Interactive College Enquiry Chatbot

## **Software, databases, and computer applications - I**

*Chairs: Zdzislaw Polkowski and Ovidiu-Constantin Novac*

*Technical chair: Maria Simona Raboaca*

12:00-12:15 ; Zdzislaw Polkowski, Jyoti Prakash Mishra and Sambit Kumar Mishra , Prioritization of complex heterogeneous queries using evolutionary and computational approach

12:15-12:30 ; Elisabeta Alexa, Doina Zmaranda and Elisa Valentina Moisi , Modeling and Solving the University Timetabling Problem using the Constraints Satisfaction Model: A Case Study

12:30-12:45 ; David Traian Belenesi, Gianina Adela Gabor and Elisa Valentina Moisi , Comparative Study on WPF and UWP Frameworks used in RSS Application

12:45-13:00 ; Rodica-Mihaela Teodorescu and Maria-Elena Stanciu , Virtual methods used in the study of systems stability

13:00-13:15 ; Marilena Ianculescu, Elena Paraschiv, Adriana Alexandru and Veronica Gavrila , Fostering a Non-Intrusive Elderly-Centered Care through a Personalized Smart Home Environment

13:15-13:30 ; Florian Anghelache, Dan Alexandru Mitrea, Nicolae Goga, Andrei Vasiliateanu, Vladut Radulescu, Diana Scurtu, Dan Musat and Bujor Pavaloiu , A quantitative research for determining the user requirements for an innovative route planning system targeted for the commercial vehicle fleets

13:30-13:45 ; Mihai Radu, Nicolae Goga, Andrei Vasilăţeanu, Ramona Dragomir, Alexandru Filip Popovici, Bianca Georgiana Dinu, Maria-Iulia Moroti-Constantinescu, Răzvan Mihai Buligan and Diana Scurtu , Rose - An intelligent system for student counseling and tutoring

13:45-14:00 ; Ilie Cristian Dorobat and Vlad Posea , Open Data Indicator: An Accumulative Methodology for Measuring the Quality of Open Government Data

14:00-14:15 ; Ilie Cristian Dorobat and Vlad Posea , The Power of Regular Expressions in Recognizing Dates and Epochs

14:15-14:30 ; Petru Cardei, Mihai Matache, Catalin Persu, Raluca Sfiru, Sebastian Muraru and Mario Cristea , Simulation of the Calibration Process of the Strain Gauge Measurement Systems

## **International Workshop on Systems Safety & Security - I**

*Chairs: Emil Pricop and Dan Popescu*

*Technical chair: Emil Pricop*

12:00-12:15 ; Alaa Elhao, Mohamed Megahed and Emad Elsamahy , Towards Quantum Resistant Key Agreement Schemes Using Unpredictability

12:15-12:30 ; Cristian Pascariu and Ioan Bacivarov , Detecting Phishing Websites Through Domain and Content Analysis

12:30-12:45 ; Sandeep Pai Kulyadi, Pavitra Mohandas, Sudesh Kumar Santhosh Kumar, Shankar Raman M J and Vasan V S , Anomaly Detection using Generative Adversarial Networks on Firewall Log Message Data
12:45-13:00 ; Marius Rogobete, Marius Iulian Mihailescu and Eugen Marin , Ultra-Wideband Technology in Telematics Security - A short Survey
13:00-13:15 ; Sudesh Kumar, Santhosh Kumar, Sandeep Pai Kulyadi, Pavitra Mohandas, Shankar Raman M J and Vasan V S , Computation of Cyclomatic Complexity and Detection of Malware Executable Files
13:15-13:30 ; Sidharth Shyamsukha, Pronaya Bhattacharya, Farnazbanu Patel, Sudeep Tanwar, Rajesh Gupta and Emil Pricop , PoRF: Proof-of-Reputation-based Consensus Scheme for Fair Transaction Ordering
13:30-13:45 ; Alexandru Costache, Emilia Badescu, Dan Popescu and Loretta Ichim , Identifying Persons from Iris Image
13:45-14:00 ; Alexandru Dinca, Nicoleta Angelescu and Dan Popescu , Modern Web Application for Image Annotation Using Web Technologies
14:00-14:15 ; Domenico Pascarella, Gabriella Gigante, Francesco Nebula, Angela Vozella, Elisa Redondo de la Mata, Francisco Jose Jiménez Roncero and Edgar Martinavarro , Historical Data Analysis and Modelling for Drone Intrusions in Airports

## **Electrical engineering applications - I**

*Chairs: Necmi Altin and Mihai Arva*

*Technical chair: Mihai Arva*

12:00-12:15 ; Ioan Cristian Hoarcă , Energy management for a photovoltaic power plant based on SCADA system
12:15-12:30 ; Joseph Cudjoe Attachie, George Owusu and Shiphrah Ohene Adu , Mitigation of Total Harmonic Distortion in the Output Voltage of Thyristor Voltage Controller for Single-Phase Asynchronous Motors - A Case Study
12:30-12:45 ; Zeynep Bala Duranay , Output Voltage Regulated Sepic Converter for Photovoltaic Systems
12:45-13:00 ; Necmi Altin, Saban Ozdemir, Ibrahim Sefa and Hasan Komurcugil , Second-Order Sliding Mode Control of Three-Phase Three-Level Grid-Connected Neutral Point Clamped Inverters
13:00-13:15 ; Abdela A.S Esmail, Selim Öncü and Necmi Altin , An MPPT Controlled Three Phase PV Supplied Water Pumping System
13:15-13:30 ; Razvan Garbea, Florina Scarlatache, Gheorghe Grigoras and Bogdan-Constantin Neagu , Integration of Data Mining Techniques in SCADA System for Optimal Operation of Hydropower Plants
13:30-13:45 ; Mirel Stanica, Nicu Bizon and Mihai Arva , A brief review of sensorless AC motors control
13:45-14:00 ; Mirel Stanica, Nicu Bizon and Mihai Arva , A brief review of sensorless motors position control

## **Electronic circuits and equipments - I**

*Chairs: Silviu Ionita and Valentin Alexandru Stan*

*Technical chair: Marian Raducu*

12:00-12:15 ; Hidayat Ur Rehman , IGBT Based Fault Current Limiter and Parallel RL Fault Current Limiter for HB-MMC

12:15-12:30 ; Sebastian-Lucian Muraru, Vergil Muraru, Paula Condruz, Cornelia Muraru-Ionel and Raluca Sfiru , Soil Spectral Analysis

12:30-12:45 ; Valentin Ion, Horia Andrei, Emil Diaconu, Mihaita Nicolae Ardeleanu and Andrei Cosmin Gheorghe , Electrical characteristics analysis of video surveillance systems

12:45-13:00 ; Aurel Ștefan Pica and Veronica Dulea , SMART HOME: IMPROVING AIR QUALITY USING AN INTELLIGENT ELECTRICAL DEVICE

13:00-13:15 ; Valentin Ion, Horia Andrei, Emil Diaconu, Mihaita Nicolae Ardeleanu and Andrei Cosmin Gheorghe , The analysis of the electrical characteristics for an anti-theft alarm system

13:15-13:30 ; Valentin Alexandru Stan, Razvan Andrei Gheorghiu, Petrisor Peiu, Luigi Obreja, Angel Ciprian Cormos and Laurentiu Dorin Buretea , Digital Noise Generators with Programable Spectrum – solution for laboratory environment and transports sensors tests

13:30-13:45 ; Nora Ali, M Elsoudani, Hany Elsayed, Hebat-Allah Mourad and Hassanein Amer , Interference Mitigation in D2D Communications for 5G Mobile Networks

13:45-14:00 ; Florentin Vasile, Alexandru Craciun, Marian Vladescu, Paul Schiopu, Valentin Feies, Iulian Busu, Norocel Codreanu, Madalin Moise, Silviu Ionita and Marian Raducu , Electronic Circuit for Differential Measurement using Resonant Sensors: Designing Approach



**July 1, 15:30-18:00, ECAI Afternoon sessions**15:20-15:30 Registration of the participants in the **ECAI Afternoon sessions****Artificial Intelligence, including Expert systems - II***Chairs: Razvan Andrei Gheorghiu and Aurel Mihail Titu**Technical chair: Mihai Arva*

15:30-15:45 ; Maria Viorela Muntean , Data mining models for predicting the health situation in European countries

15:45-16:00 ; Razvan Andrei Gheorghiu, Valentin Iordache and Valentin Alexandru Stan , Computer vision application to determine crowdedness in public transport stations

16:00-16:15 ; Corneliu Florea and Laura Florea , Image Aesthetics Assessment with Gradient Shake Regularization

16:15-16:30 ; Coman Andreea Daniela, Ionita Silviu and Lita Ioan , A Neuronal Model of the Primary Visual Cortex: Simulation of Visual Evoked Potentials

16:30-16:45 ; Gabriela-Loredana Ghenea and Victor-Emil Neagoie , Concurrent Convolutional Neural Networks with Decision Fusion to Diagnose COVID-19 using Chest X-ray Imagery

16:45-17:00 ; Omar Ibrahim, Bashar Sami and Marwa Ismail , Study and analysis of beamforming algorithm between LMS and SMI

17:00-17:15 ; Marius Minea, Catalin Marian Dumitrescu, Viviana Laetitia Minea and Augustin Semenescu , Designing Intelligent Agents for the Management of Complex Data Communication Networks in Smart Cities

17:15-17:30 ; Alexandru Stanciu, Aurel Mihail Titu and Dorin Vasile Deac Suteu , Driving Digital Transformation Of Knowledge-Based Organizations Through Artificial Intelligence Enabled Data Centric, Consumption Based, As-A-Service Models

17:30-17:45 ; Dorin Vasile Deac Suteu, Alexandru Stanciu and Aurel Mihail Titu , The Reference Architecture of An Integrated Service Middleware Hub in The Environment of Knowledge-Based Organizations

17:45-18:00 ; Jatin Sadhwani and M. Sabarimalai Manikandan , Non-Collaborative Human Presence Detection Using Channel State Information of Wi-Fi Signal and Long-Short Term Memory Neural Network

## **Software, databases, and computer applications - II**

*Chairs: Claudiu Pirnau and Gabriel Iana*

*Technical chair: Gabriel Iana*

15:30-15:45 ; Florin Postolache and Cristian Stefan Dumitriu , Reshaping the LMS IT Architecture and Educators Methodology through Blended Learning Approach

15:45-16:00 ; Marius Iulian Mihailescu, Stefania Loredana Nita and Marius G Rogobete , Authentication Protocol for Intelligent Cars using Fog Computing and Software-Defined Networking

16:00-16:15 ; Gabriel Radulescu , A practical method to build-up a virtual reality building emulator

16:15-16:30 ; Claudiu Pirnau, Mironela Pirnau, Liviu Daniel Ghiculescu and Radu-Mircea Carp Ciocardia , Dynamics of Internet User Searches Related to "Industrial Management"

16:30-16:45 ; Alexandru Predescu, Mariana Mocanu and Costin-Gabriel Chiru , A case study of mobile games design with a real-world component based on Google Maps and Unity

16:45-17:00 ; Diana-Andreea Arsene, Alexandru Predescu, Ciprian-Octavian Truică, Elena-Simona Apostol, Mariana Mocanu and Costin Chiru , Profiling consumers in a water distribution network using K-Means clustering and multiple pre-processing methods

17:00-17:15 ; Valeriu Manuel Ionescu and Florentina Magda Enescu , Using information technology in Romanian preschool environment during the COVID-19 pandemic

17:15-17:30 ; Parikshit Rana, Dr. Manmohan Singh Rauthan and Rohan Verma , Blockchain & QR code technology-based secure and quick vehicle identification and authentication system for Indian traffic police

17:30-17:45 ; Ion Nicolae Stancel and Catalin Marian Dumitrescu , IoT TECHNOLOGY AND SUPPLY CHAIN MANAGEMENT

17:45-18:00 ; Stefania Loredana Nita and Marius Iulian Mihailescu , Blockchain Applications in Computer Communication

## **Electrical engineering applications - II**

*Chairs: Valentin Alexandru Stan and Cengiz Taplamacioglu*

*Technical chair: Ioan Cristian Hoarca*

15:30-15:45 ; Razvan Andrei Gheorghiu, Valentin Iordache and Valentin Alexandru Stan , Urban traffic detectors – comparison between inductive loop and magnetic sensors

15:45-16:00 ; Moein Attar and Suleyman Sungur Tezcan , Design and Cost Analysis of Two Different Types of 400 kVA Distribution Transformers

16:00-16:15 ; Cristian Hoarca, Nicu Bizon and Florentina Magda Enescu , Using the potential of renewable energy sources in Romania to reduce environmental pollution
16:15-16:30 ; Cristian Hoarca , Romania's energy strategy 2020-2030 with the perspective of 2050: SWOT analysis
16:30-16:45 ; Ozgur Cetin, Hidir Duzkaya and M. Cengiz Taplamacioglu , Analysis of Transmission Line Electromagnetic Interference on Touch and Step Voltages on Buried Gas Pipeline under Different Shielding and Resistivity Conditions
16:45-17:00 ; Jubleanu Radu, Cazacu Dumitru and Bizon Nicu , HYBRID ENERGY STORAGE – A brief overview
17:00-17:15 ; Lorant Andras Szolga and Florin Mudure , Temperature Sensor Using a Hybrid Structure with Plastic Optical Fiber and Bimetal Element

## **Electronic circuits and equipments - II**

*Chairs: Cristian Monea and Nicoleta Angelescu*

*Technical chair: Cristian Monea*

15:30-15:45 ; Iulian Georgescu, Nicoleta Angelescu, Dan Constantin Puchianu, Predusca Gabriel and Liana Denisa Circiumarescu , Software defined radio applications - receiving and decoding images transmitted by weather satellites
15:45-16:00 ; Alexandru Alin Nastase, Alexandru Ioan Sgarciu, Andreea Nedelcu, Bogdan Nedelcu and Valentin Sgarciu , Alternative Solutions for Making Impulse Ordered Proportional Valves
16:00-16:15 ; Nguyen Hoang Viet and Pham Duc Dai , A Comparison of DTC and PTC Techniques for Induction Motor Drive Systems
16:15-16:30 ; Andrei Dragulinescu, Ana Maria Dragulinescu and Ioana Marcu , Optical correlator based on the Hilbert transform for image recognition
16:30-16:45 ; Andrei Dragulinescu and Ana Maria Dragulinescu , Optical correlator for secure access in buildings
16:45-17:00 ; Nune Pratyusha and Santanu Mandal , TaOx based memristor model and its emulator design for future neuromorphic computing
17:00-17:15 ; Cristian Monea , Multi-sensor hardware platform for water monitoring

## **Signal and image processing**

*Chairs: Dorel Aiordachioaie and Una Tuba*

*Technical chair: Ioan-Sorin Sorlei*

15:30-15:45 ; Răzvan Ionuț Bălașa, Gheorghe Olaru, Ciprian Marian Bîlu and Maria Beatrice Bălăceanu , A neural network based approach to identifying COVID-19 safety regulations compliance
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15:45-16:00 ; Dorel Aiordachioaie , Industrial Process Diagnosis based on Information and Time Domain Models
16:00-16:15 ; Muhammad Uzair , Blockiness Distortion Measurement for Intra-Coded Video Frames by Using an Efficient NR Algorithm
16:15-16:30 ; Ayeshini Tharushika, Thilina Rasanga, Pradeepa Bandara and Ishara Weerathunge , Machine Learning Based Skin And Heart Disease Diagnose Mobile App
16:30-16:45 ; Ciprian Dragoi, Cristian Anghel, Cristian Stanciu and Constantin Paleologu , Efficient FPGA Implementation of Classic Audio Effects
16:45-17:00 ; Cristian Stefan Dumitriu and Florentina Loredana Dragomir , Modeling the electrical signals collected in cavitation field by stochastic and artificial intelligence methods
17:00-17:15 ; Ioana Udrea, Cristian Gabriel Alionte, Tudor Catalin Apostolescu and Georgeta Ionascu , New research on People Counting and Human Detection
17:15-17:30 ; Una Tuba and Dejan Zivkovic , Image Denoising by Discrete Wavelet Transform and Edge Enhancement

### **MDPI - Workshop**

<i>Chairs: Mariana Iliescu and Nicu Bizon</i>
<i>Technical chair: Maria Simona Raboaca</i>
15:30-15:45 ; Lucian Cucu, Ana-Maria Bucur and Marilena Stoica , Study case regarding energetic efficiency of protected historical buildings
15:45-16:00 ; Florentina Magda Enescu, Nicu Bizon, Gheorghe Serban and Ioan Cristian Hoarca , ENVIRONMENTAL PROTECTION - BLOCKCHAIN SOLUTIONS FOR INTELLIGENT PASSENGER TRANSPORTATION OF PERSONS
16:00-16:15 ; Süleyman Emre Eyimaya, Necmi Altın and Güngör Bal , Design of an Energy Management System with Power Fluctuation Mitigation Capability for PV/Wind Hybrid Renewable Energy Sources
16:15-16:30 ; Çağdaş Hisar, İbrahim Sefa and Necmi Altın , Processor-in-the-Loop Simulation of a Interleaved Buck Converter With MATLAB/Simulink
16:30-16:45 ; Lucian-Andrei Perișoară, Dragoș-Ioan Săcăleanu and Irina-Bristena Bacîș , Virtual Instruments Cluster for Monitoring of Electric Vehicle Testing Platform
16:45-17:00 ; Maria Simona Raboaca, Nicu Bizon, Oana Vasilica Grosu, Elena Carcadea, Constantin Filote and Laurentiu Dan Milici , Fuel cell/ Photovoltaic panels/ Wind turbines Hybrid Systems analysed through bibliometric maps
17:00-17:15 ; Vasilica Dandea, Gheorghe Grigoras, Bogdan-Constantin Neagu and Florina Scarlatache , A Clustering-based Knowledge Extraction Methodology for Prosumers' Classification and Injected Power Profiles Grouping
17:15-17:30 ; Bhargav Appasani, Amitkumar Vidyakant Jha, Deepak Kumar Gupta, Nicu Bizon and Avireni Srinivasulu , An Improved Particle Swarm Optimization Technique and its Application in Load Frequency Control

17:30-17:45 ; Nicu Bizon, Mihai Oproescu, Elena Carcadea, Mircea Raceanu, Maria Simona Raboaca and Sorin Sorlei , Performance of the Fuel Economy Strategies for Fuel Cell Systems under Power Tracking Control

17:45-18:00 ; Nicu Bizon, Elena Carcadea, Mariana Iliescu, Maria Simona Raboaca, Ioana Manta and Ioan-Sorin Sorlei , Estimation of hydrogen consumption for proton-exchange membrane fuel cells systems

### Friday, July 2, 2021

9:20-9:30, Registration of the participants in the KEYNOTE–II e-session

#### July 2, 09:30-11:00, ECAI KEYNOTE LECTURES II,

Chairs: Dorel AIORDĂCHIOAIE and Silviu IONITA

Technical chair: Emil PRICOP

09:30-10:10, Constantin PALEOLOGU

Decomposition-Based Algorithms for Sparse System Identification

10:10-10:50, Emil PRICOP,

Security of Industrial Control Systems: challenges, trends and innovative solutions

#### July 2, 11:30-14:30, ECAI Morning sessions

11:20-11:30 Registration of the participants in the ECAI Morning sessions

### Artificial Intelligence, including Expert systems - III

*Chairs: Laurentiu Ionescu and Florentina Enescu*

*Technical chair: Ioan Cristian Hoarcă*

11:30-11:45 ; George Iordache, Dan Trufin, George Iordache, Svetlana Segărceanu, George Suciuc and Gabriel Petrescu , Algorithms and parameters for avalanche prediction - a review

11:45-12:00 ; Ruxandra Fratila and Luciana Morogan , Enhanced models in deep image steganography

12:00-12:15 ; Corneliu Florea and Laura Florea , Multitask Regularization for Image Aesthetic Evaluation

12:15-12:30 ; Sashank Sridhar and Sowmya Sanagavarapu , Deep-Neural Genetic Algorithm Optimization Analysis for Forgery Detection of Banknotes

12:30-12:45 ; Florentina Dragomir, Florin Popescu and Ana-Maria Baiasu , Identifying NATO costs in the total workforce using artificial intelligence

12:45-13:00 ; Prakriti Dwivedi, Akbar Ali Khan, Sareeta Mugde and Garima Sharma , Diagnosing the major contributing factors in the classification of the fetal health status using cardiocography measurements: An AutoML and XAI approach

13:00-13:15 ; Andrei Alexandru Tulbure, Cosmin Covaciu, Bogdan Pinteaa and Adrian Alexandru Tulbure , Automated ceramic plate defect detection using ScaledYOLOv4-large
13:15-13:30 ; Mihai Daniel Radu, Nicolae Goga, Andrei Vasilăţeanu, Bujor Păvăloiu, Alexandru Hang, Ramona Popa, Ana Trocmaer and Diana Scurtu , Interconnected web platform with autonomous robots for helping patients in ICU sections
13:30-13:45 ; Muhammad Uzair Khan, Rao Muhammad Umair Khalid, Syeda Airas Burhan and Muhammad Nauman , Machine Learning Based Recommendation System For Mobile Apps

### **Bio-medical applications & biomaterials**

*Chairs: Corina Savulescu and Gheorghe Gavriloaia*

*Technical chair: Maria Simona Raboaca*

11:30-11:45 ; Haider Abdullah Ali, Nicolae Goga, Andrei Vasilateanu, Liwa Abdullah Ali, Ghufran Saady Abd-Almuhsen and Hasan K. Naji , A Quantitative Research to Determine User's Requirements for the Mind-Controlled Prosthesis Arm Intelligent System
11:45-12:00 ; Irina Cristescu and Lidia Bajenaru , Elderly smartwatch adoption: a conceptual model development
12:00-12:15 ; Kancharla Vijaya Vardhan, Dr Musala Sarada and Dr Avireni Srinivasulu , Novel Modular Adder Based on Thermometer Coding for Residue Number Systems Applications
12:15-12:30 ; Ojas Ramwala, Smeet Dhakecha, Antriksh Ganjoo, Divyanshu Visiya and Jignesh Sarvaiya , Leveraging Adversarial Training for Efficient Retinal Vessel Segmentation
12:30-12:45 ; Ionel-Bujorel Pavaloiu, Andrei Vasilăţeanu, Ramona Popa, Diana Scurtu, Alexandru Hang and Nicolae Goga , Healthcare Robotic Telepresence
12:45-13:00 ; Maria Magdalena Dicu and Ancuţa Mihaela Bălţeanu , COATING TECHNIQUES FOR MATERIALS MEDICAL: A mini-review
13:00-13:15 ; Mariuca-Roxana Gavriloaia, Eugeniu Novac and Bogdan-Mihai Gavriloiua , Modeling of S Glycoprotein SARS-CoV-2 as Microwave Dielectric Resonator

### **Software, databases, and computer applications - III**

*Chairs: Gabriel Iana and Ovidiu-Constantin Novac*

*Technical chair: Gabriel Iana*

11:30-11:45 ; Humam K.Majeed Al-Chalabi , Evaluation of a Multi-Parameter E-learning System using Web 3.0 Technologies
11:45-12:00 ; Humam K.Majeed Al-Chalabi, Aqeel M.Ali. Hussein and Ufuoma Chima Apoki , An Adaptive Learning System Based on Learner's Knowledge Level

12:00-12:15 ; George Iordache, Dan Trufin, George Iordache, George Suci, Svetlana Segăriceanu and Gabriel Petrescu , A state of the art of early avalanche warning systems
12:15-12:30 ; Ana-Maria Dragulinescu, Filip Constantin, Oana Orza, Sabina Bosoc, Robert Streche, Alexandru Negoita, Filip Osiac, Cristina Mihaela Balaceanu and George Suci , Smart Watering System Security Technologies using Blockchain
12:30-12:45 ; Valeriu Manuel Ionescu, Florentina Magda Enescu and Andreea Cristina Tudor , Azure Web Application for Testing the Factors Influencing Online Assessment Quality
12:45-13:00 ; Florentina Magda Enescu, Nicu Bizon and Valeriu Manuel Ionescu , Blockchain technology protects diplomas against fraud
13:00-13:15 ; Florentina Magda Enescu, Nicu Bizon and Valeriu Manuel Ionescu , Eco-smart village by using new technologies
13:15-13:30 ; Ufuoma Apoki, Humam Al-Chalabi and Aqeel Hussein , Selecting Relevant Parameters for Personalisation Based on Existing Learning Materials
13:30-13:45 ; Lehel Szabolcs Csokmai, Cornelia Mihaela Novac, Ovidiu-Constantin Novac, Gyongyi Bujdoso, Mihai Oproescu and Marius Codrean , Comparative study about data speed acquisition and recording in a MySQL database of LabVIEW, MATLAB and Python programming languages
13:45-14:00 ; Mihai Cristian Chirodea, Ovidiu-Constantin Novac, Cornelia Mihaela Novac, Nicu Bizon, Mihai Oproescu and Cornelia Emilia Gordan , Comparison of Tensorflow and PyTorch in Convolutional Neural Network - based Applications

## **International Workshop on Systems Safety & Security - II**

*Chairs: Emil Pricop and Nicoleta Angelescu*

*Technical chair: Emil Pricop*

11:30-11:45 ; Alexandru Dinca, Nicoleta Angelescu and Dan Popescu , Web Data Management Platform Integrating Encryption Algorithms
11:45-12:00 ; Abdulmajeed Alahmari and Robert Duncan , Investigating Potential Barriers to Cybersecurity Risk Management Investment in SMEs
12:00-12:15 ; Rajesh Gupta, Tejal Rathod, Dakshita Reebadiya, Sudeep Tanwar, Pronaya Bhattacharya and Emil Pricop , Faith: Trusted Chain Network for Non-Cooperative D2D Communication Underlying HetNet
12:15-12:30 ; Razvan Stoleriu, Alin Puncioiu and Ion Bica , Cyber Attacks Detection Using Open Source ELK Stack
12:30-12:45 ; Deepika Sharma and Arvind Selwal , A face anti-spoofing approach based on generic sequential model using scale invariant features
12:45-13:00 ; Nilesh Jadav, Nitul Dutta, Hiren Kumar Deva Sarma, Emil Pricop and Sudeep Tanwar , A Machine Learning Approach to Classify Network Traffic
13:00-13:15 ; Constantin Nilă, Marius Preda, Ioana Apostol and Victor-Valeriu Patriciu , Reactive WiFi honeypot

13:15-13:30 ; Marius Nedelcu, Victor Nițu and Teodor Petrescu , Uplink power levels of user equipment in commercial 4G and 5G networks

13:30-13:45 ; Otilia Cangea and Radu Gabriel Popa , Securing SCADA Systems – Cyber Threats & Techniques. Case Study

## **International Workshop on Technology and Materials Engineering**

*Chairs: Adriana Gabriela Plăiașu and Mihai Oproescu*

*Technical chair: Mihai Oproescu*

11:30-11:45 ; Ovidiu Vasile Udrescu, Adriana Gabriela Plăiașu, Constantin Augustus Bărbulescu, Marian Cătălin Ducu, Sorin Georgian Moga and Denis Aurelian Negrea , Corrosion of some military equipment and ustensils discovered in the ancient site of Buridava

11:45-12:00 ; Ecaterina Magdalena Modan, Catalin Marian Ducu, Carmen Mihaela Topala, Sorin Georgian Moga and Aurelian Denis Negrea , Chemical synthesis of iron oxide particles for catalysis

12:00-12:15 ; Ecaterina-Magdalena Modan, Catalin Marian Ducu, Carmen Mihaela Topala, Sorin Georgian Moga and Aurelian-Denis Negrea , The influence of the precursor concentration on the morphology and size of iron oxide particles elaborated by chemical synthesis

12:15-12:30 ; Sagnik Banerjee, Uddipan Nath, Shruti Shruti, Sasmita Pahadsingh, Amitkumar Vidyakant Jha, Bhargav Appasani, Avireni Srinivasulu and Nicu Bizon , A Terahertz Metamaterial Absorber Based Refractive Index Sensor with High Quality Factor

12:30-12:45 ; Nicoleta Rachieru, Nadia Belu, Iuliana Grecu and Laurentiu Ionescu , An improved fuzzy inference system based risk analysis approach with application to MUDPS-O technological system

12:45-13:00 ; Alin Rizea, Daniel-Constantin Anghel, Monica Iordache and Nicolae-Doru Stanescu , Study of the influence of the thermal aging on the original shape of the parts obtained by FDM 3D Printing with Z-ULTRAT material

13:00-13:15 ; Constantin Ghetea, Sorin Georgian Moga, Denis Aurelian Negrea, Marian Cătălin Ducu and Adriana-Gabriela Plaiiasu , Methods for characterizing of materials from heritage paintings

13:15-13:30 ; Mihai Oproescu, Adriana-Gabriela Plaiiasu, Nicu Bizon, Vasile-Gabriel Iana and Denisa Toma , Oxygen Concentration Monitoring and Control in a Melted Lead Environment - Hardware concept and implementation

13:30-13:45 ; Mihai Oproescu, Gabriela Plaiiasu, Ionela Niculescu, Nicolae Viorel, Vasile-Gabriel Iana and Ionut Bulgaru , The Effect of Ensuring Ergonomic Learning Conditions in Technical University Education on the Engineering Profession



## **Control, robotics and mechatronics**

*Chairs: Mihai Catalin Arva and Cristian Patrascioiu*

*Technical chair: Mihai Catalin Arva*

11:30-11:45 ; Lucian Ștefăniță Grigore, Damian Gorgoteanu, Cristian Molder, Amado Ștefan, Daniel Constantin and Adriana Molder-Milășan , Considerations on the characteristic of electric traction motors of an EOD robot

11:45-12:00 ; Răzvan Ionuț Bălașa, Gheorghe Olaru, Daniel Constantin, Amado Ștefan, Ciprian Marian Bîlu and Maria Beatrice Bălăceanu , LIDAR based distance estimation for emergency use terrestrial autonomous robot

12:00-12:15 ; Damian Gorgoteanu, Lucian Stefanita Grigore and Cristian Molder , Mapping algorithm using SWARM robots

12:15-12:30 ; Cosmin Ivan and Mihai Catalin Arva , Nonlinear Time Series Analysis in Unstable Periodic Orbits Identification - Control Methods of Nonlinear Systems

12:30-12:45 ; Cristian Patrascioiu and Marian Popescu , Modelling and Simulation of Natural Gas Compression Plant

12:45-13:00 ; Cristian Patrascioiu , Biomass Heater - Constructive and control particularity

13:00-13:15 ; Pham Duc Dai and Nguyen Hoang Viet , Optimization of Variable Speed Pump Scheduling for Minimization of Energy and Water Leakage Costs in Water Distribution Systems with Storages

13:15-13:30 ; Pham Duc Dai , Optimal Placement and Regulation of Pressure Reducing Valves in Water Distribution Systems to Water Leakage Reduction

13:30-13:45 ; Tudor Catalin Apostolescu, Cartal Laurențiu Adrian, Ioana Udrea, Georgeta Ionascu and Lucian Bogatu , Research for the Control of a Robot with Adhesion by Suction Cups

13:45-14:00 ; Mihai C. Arva, Mirel Stanica, Nicu Bizon and Cosmin Ivan , Statistical and sensitivity analysis of stepper motor parameters used in high gamma radiation field

14:00-14:15 ; Bishoy Salama, Omar Elayat, Ghada Ahmed, Salma Elsokkary, Ramez Daoud, Hassanein Amer and Hassan El-Menier , On the Availability and Downtime of Safety-Critical Networked Control Systems

14:15-14:30 ; Sabina Bosoc, George Suci, Andrei Scheianu and Ioana Petre , Real-time sorting system for the Construction and Demolition Waste materials

## **ECAI CLOSING CEREMONY**

July 2, 14:30-15:00, ECAI Closing Solemnity,

### ***Closing speeches***

14:30-14:40 Mihai Oproescu and Mihai Arva, Program Chairs of ECAI

14:40-15:00 Time of closing speeches for the ECAI participants

### **End of ECAI conference actions**



## ECAI 2021, July 1 – July 2, 2021, Timetable and Program

Date	Time	Session or activity	Location	
June 30		<b>E-Registration</b>		
July 1	8:30-8:50	<b>E-Registration</b>		
	9:00-9:40	<b>ECAI Opening Ceremony</b>	webxteams://im?space=6b9c67e0-d57e-11eb-b6f1-3fc94bf656f1	
	9:40-11:45	<b>ECAI KEYNOTE LECTURES I</b>	webxteams://im?space=6b9c67e0-d57e-11eb-b6f1-3fc94bf656f1	
	11:45-12:00	<b>E - Brokerage events</b>		
	12:00-14:30	<b>ECAI morning sessions</b>		
		<b>Artificial Intelligence, including Expert systems - I</b>		webxteams://im?space=475213f0-d5f4-11eb-b6e1-ed257495cfb8
		<b>Software, databases, and computer applications - I</b>		webxteams://im?space=4c842e20-d8c5-11eb-be15-7de5d90ac471
		<b>International Workshop on Systems Safety &amp; Security - I</b>		webxteams://im?space=0fe11150-d653-11eb-9f35-252e94d51c4d
		<b>Electrical engineering applications - I</b>		webxteams://im?space=71c5ff50-d77c-11eb-afe0-950f8f59545c
	<b>Electronic circuits and equipment - I</b>		webxteams://im?space=bc2fcf40-d8a7-11eb-a2fc-f5b8b57bac5b	
	14:30-15:30	<b>Break</b>		
	15:30-18:00	<b>ECAI afternoon sessions</b>		
		<b>Artificial Intelligence, including Expert systems - II</b>		webxteams://im?space=de6e0c50-d77d-11eb-9650-071f66c309aa
		<b>Software, databases, and computer applications - II</b>		
		<b>Electrical engineering applications - II</b>		webxteams://im?space=e4480830-d83e-11eb-b752-c3566352c744
		<b>Electronic circuits and equipment - II</b>		webxteams://im?space=80ba4680-d5f4-11eb-8b2e-3bc8449730b2
		<b>Signal and image processing</b>		webxteams://im?space=030ed0b0-d7e4-11eb-9aca-0d5a4edec44f
		<b>Efficiency and Sustainability of the Distributed Renewable Hybrid Power Systems Based on the Energy Internet, Blockchain Technology and Smart Contract</b>		webxteams://im?space=c40b40b0-d8c9-11eb-8338-f3baf1546e5a
		<b>Microgrids Integrating Renewable Energy Sources, Fuel Cells and Plug-In Hybrid Electric Vehicles &amp; Hybrid Vehicles: Energy and Health Management</b>		
	<b>Fuel Cell Renewable Hybrid Power Systems” &amp; "Advanced Modeling, Control, and Optimization Methods in Power Hybrid Systems</b>			
18:00-18:30	<b>E - Brokerage events</b>			
July 2	8:30-9:30	<b>E-Registration</b>		
	9:30-11:00	<b>ECAI KEYNOTE LECTURES II</b>	webxteams://im?space=d0642b20-d652-11eb-833a-05e894c894e9	
	11:00-11:30	<b>E - Brokerage events</b>		
	11:30-14:30	<b>ECAI morning sessions</b>		
		<b>Artificial Intelligence, including Expert systems - III</b>		webxteams://im?space=2c2d5600-d83f-11eb-a399-3f35fbc1f29c

		<b>Bio-medical applications &amp; biomaterials</b>	webxteams://im?space=cfb1c10-d8cb-11eb-95fa-7b57670a8bfe
		<b>Software, databases, and computer applications - III</b>	
		<b>International Workshop on Technology and Materials Engineering</b>	webxteams://im?space=14a5ea40-d580-11eb-9fdb-076665da2b35
		<b>International Workshop on Trends and Opportunities in Engineering Career</b>	
		<b>International Workshop on Systems Safety &amp; Security - II</b>	webxteams://im?space=3be11b10-d653-11eb-a2a3-795f39c860b2
		<b>Control, robotics and mechatronics</b>	webxteams://im?space=5098a9a0-d780-11eb-9aca-0d5a4edec44f
14:30-15:00		<b>ECAI Closing Solemnity</b>	webxteams://im?space=6b9c67e0-d57e-11eb-b6f1-3fc94bf656f1

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### PAPERS PUBLISHING

The papers will be published in the ECAI proceedings, indexed in IEEE Xplore® and submitted to ISI Web of Knowledge databases. The selected papers will be sent to the appropriate IEEE IAS journals (up to 10%) and MDPI journals for publishing, after those papers will be further reviewed as normal.

**Proceedings' Editor: Nicu Bizon, Mihai Oproescu**

**Text processing: Mihai Oproescu**

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