



20 - 22 July 2022
Prague, Czech Republic



CONFERENCE PROGRAM
(PHYSICAL PART)

July 20 th , 2022			
Time	HALL-A	HALL-B	HALL-C
08:00-08:45	REGISTRATION		
08:45-09:00	Welcome Speech Dr. Simon WINBERG (University of Cape Town, SOUTH AFRICA) <i>Chair of ICECET'22</i>		
09:00-11:00	Session A-I: Big Data - Data Science	Session B-I: Communications	Session C-I: Electric Vehicles and Machines
11:00-11:15	COFFEE BREAK		
11:15-13:15	Session A-II: IoT, Neural Net. - Mechatronics	Session B-II: High Voltage Engineering	Session C-II: Renewable Energy - Microelectronics
13:15-14:00	LUNCH		
14:00-16:00	Session A - III Computer Eng. - Cybersecurity - 1	Session B-III: ML/DL - IoT - Modelling - 1	Session C-III: Robotics and Control Systems
16:00-16:15	COFFEE BREAK		
16:15-18:15	Session A-IV: Computer Eng. - Cybersecurity - 2	Session B-IV: ML/DL - IoT - Modelling - 2	Session C-IV: Mixed Session
18:15-18:30	CLOSING		

09:00-11:00

Session A-I: Big Data – Data Science
Chair: Purcell Warren

ID	Authors	Title
78	Welk , Josefina; Kirsten, Toralf	CluPlaR: A Framework for Clustering Spatio-Temporal Geographic Positions
90	Sabella, Gianluca ; Russo, Guido; Carracciolo, Luisa Dr.; Spisso, Bernardino; Barone, Giovanni Battista; Michelino, Davide; Doria, Alessandra; Pardi, Silvio; Bottalico, Davide	Designing And Implementing A High-Performance Computing Heterogeneous Cluster
395	Botchway, Raphael K ; Yadav, Vinod; Kominkova Oplatkova, Zuzana; Senkerik, Roman	Text-based feature selection using binary particle swarm optimization for sentiment analysis
701	Poirier-Herbeck, Lisa ; Lahalle, Elisabeth; Sylvie, Marcos; Nicolas, Saurel	Unknown-length motif discovery methods in environmental monitoring time series
796	Lin, Wei-Hua; Zhang, Liang	Calibration-free Traffic Signal Control Method Using Machine Learning Approaches
845	Yeeun, Yoo ; Kyeong, Sunghyon; Shin, Donghwa; Han, Daehee; Shin, Jinho	Medicare fraud detection using graph neural networks
933	Klipic, Anja; Purcell, Warren ; Neubauer, Thomas	A Digital Twin for Grassland Management

09:00-11:00

Session B-I: Communications
Chair: Lee Kyung Mog

ID	Authors	Title
64	Belkhiri, Adel	Virtual Networks Link-Layer Topologies Discovery through Host-based Tracing
100	Wetzel, Daniel ; Reindl, Andrea; Meier, Hans; Niemetz, Michael	A Customized Python Interface for Windows OS for a Low Budget USB-to-CAN-Adapter
191	Karibayev, Beibit A ; Meirambekuly, Nursultan; Namazbayev, Timur ; Amirkhan Temirbayev , Amirkhan; Kadylbekkyzy, Elvira; Yessentaeva, Aidana	S band TT&C antennas integrated with optical camera system for nanosatellites
333	Hapanchak, Vadym S ; Costa, Antonio	Emulation of multi-connectivity in hybrid vehicular networks
709	Lee, Kyung Mog	Distributed Computing Agricultural Water Spraying System using LORA Communication Technology
783	Kharin, Aleksandr ; Pergamenchtchikov, Serguei	Adaptive Algorithms for Model Order Selection problems
792	Colegrave, Keatin ; Chhajer Jain, Mandeep; Niksan, Omid; Zarifi, Mohammad	Artificial Neural Networks for Antenna-based Contactless Liquid Classification
990	Gayo-Abeleira, Miguel ; Rodríguez, Fco. Javier; Hueros Barrios, Pablo José; Tradacete, Miguel; Santos, Carlos; Jiménez, José Antonio	Assessing Microgrid Communications Technologies in Real-World Environment

09:00-11:00

Session C-I: Electric Vehicles and Machines
Chair: Sergey Gladyshev

ID	Authors	Title
97	S.P. Gladyshev ; P.S. Gladyshev; I.S. Okrainskaya; N.P. Gladyshev	Two-Phase Power Frequency Converter for AC Wireless Rotor Machines
129	Demir, Dilan Deniz	Forecasting of Supercapacitors with Gompertz Method
308	Lavrionovica, Ludmila ; Podgornovs, Andrejs; Bizans, Anatolijs; Gulbis, Karlis	Overview of thermal loads distribution in traction electric machines and conditions for forced cooling of their parts
321	Sawalha, Hussam ; Batarseh, Majd G	An Improved Two-Stage Bidirectional Converter for Electric Vehicles to Grid Applications
440	Lukman, Grace Firsta; Hadipranoto, Alvaro Amos; Ahn, Jin-Woo	Cost-Effective High-Speed SRM Drive with Simple Hall-Effect Position Sensors and Minimized Number of Power Switches
496	Glocker, Tobias ; Mantere, Timo	Implementation of an Intelligent Caravan Monitoring System Using the Controller Area Network
698	Yıldız, Ahmet ; Arikan, Oktay; Keskin, Kemal	Validation of The Single Train Simulation Model With a Real-World Case Study
1005	Sahu, Vibhuti ; Gurralla, Dr. Gurunath	Node Breaker Model Based Transient Stability Simulations Using Sparse Tableau Approach

11:00-11:15

COFFEE BREAK

11:15-13:15

Session A-II: IoT, Neural Networks - Mechatronics
Chair: Dan Gota

ID	Authors	Title
51	Hatamzad, Mahshid ; Polanco, Geanette; Casselgren, Johan	A Semiquantitative Approach to Assess Uncertainty for Predicting Road Surface Temperature if a Sensor Fails at a Station
60	Singh, Nikhil	Facial Micro-Expression Recognition (FMER) using Model Compression
124	Fanca, Alexandra ; POP (Puscasiu), Adela; Gota, Dan; Valean, Honoriu; Miclea, Liviu	Distributed System for Monitoring Environmental Conditions Using Iot
201	Domínguez-Cid, Samuel; Ropero, Jorge ; Barbancho, Julio; Lora, Pedro; Cortés, Javier; León, Carlos	Cyber-Physical System for Predictive Maintenance in HVAC Installations in Hotels
479	Beltran Velandia, Ferney ; Gomez, Jonatan; Ojeda Sánchez, Andrés Felipe; Suarez Russi, Miguel; Leon, Elizabeth	Classification of Music-Evoked Emotions from EEG signals using Self-Organizing Maps
752	Choi, Yunyeong ; Lee, Jungwon; Shin, Hyungsoon; Sun, Wookyung	Mutual Authentication Method Between Pufs
338	Schneider, Kilian KS; Huber, Robert	Light Analysis for Optimized Object Detection with Cameras for Integrated Safety Systems
472	Gratzer, Alexander L.; Schirrer, Alexander ; Thonhofer, Elvira; Pasic, Faruk; Jakubek, Stefan; Mecklenbräuker, Christoph	Short-Term Collision Estimation by Stochastic Predictions in Multi-Agent Intersection Traffic

11:15-13:15

Session B-II: Robotics and Control Systems
Chair: Simon Winberg

ID	Authors	Title
117	Benić, Juraj ; Kasać, Josip; Šitum, Željko; Stipancic, Tomislav	System Modeling and Control of 2DOF Robotic Manipulator based on Dual Quaternion Approach
143	Pranjić, Marko; Kotarski, Denis ; Piljek, Petar; Pender, Antonia	Fully Actuated Multirotor UAV Control Design and Implementation
228	Pender, Antonia; Kasać, Josip; Pranjić, Marko	An Algebraic Approach to Stable Online Parameter Identification and Fault Detection
451	Mishra, Tanmay ; Gurralla, Dr. Gurunath	Excitation Limiters Design for a Micro-Alternator Buck Converter Based Static Excitation System
585	Niculescu, Filip ; Vasile, Mirela Letitia; Dediu, Gabriel; Borzea, Claudia I; Balan, George	Propeller Load Simulation On Gas Turbine Test Stand
688	El-Mahdy, Deena ; Alaa, Ahmed	An Experimental Study of a Curved Brick Wall Using Robot Assembly as a Teaching Tool in Architectural Curriculum
940	Balázs Csutak , Péter Polcz, Gábor Szederkényi	Model-Based Epidemic Data Reconstruction Using Feedback Linearization
828	Rashmita Chatterjee, Zahra Moussavi	Development of a Novel Virtual Reality Serious Game with Age Sensitive Measurement for Spatial Orientation Training
140	Simon Winberg	Posture Minder: Sit Right but Sit Less Still

11:15-13:15

Session C-II: Renewable Energy – Microelectronics
Chair: Majd Bataraeh

ID	Authors	Title
473	Loechte, Andre ; Thranow, Jan-Ole; Winters, Felix; Gloeskoetter, Peter	Analysis of switching electronics for metal-air batteries
787	Ghukasyan, Sevak	Aging Compensation Method for Voltage Controlled Oscillator
816	Chung, Harry ; Shin, Hyungsoon; Sun, Wookyung; Park, Jisun	An Improved I-V model for Resistive Random Access Memory
34	Ali, Abdelfatah; Mahmoud, Karar; Shaaban, Mostafa ; Lehtonen, Matti	On Maximizing PV Hosting Capacity in Modern Distribution Networks Based on Diverse Control Techniques
200	Lliuyacc Blas, Ruben ; Kepplinger, Peter	PV Hosting Capacity in Distribution Grids: A Comparison of Quantification Methods
405	Herrera Martínez, Marcelo ; Acosta Agudelo, Oscar Esneider; Hermida Cadena, Luis Fernando ; Bejarano Garzón, Andrés Mateo; Gaona, Elvis Eduardo; Marin, Carlos Enrique Montenegro	Use of Solar Renewable Energy for a Binaural Noise Monitoring System in Bogotá, Colombia
437	Iordache, Gabriela ; Constantin Ionescu, edit	Thermal Performance Evaluation of a Building Located in a University Campus
924	Santos, Carlos; Tradacete, Miguel ; Moreno, Guillermo; Martín, Pedro; Rodríguez, Francisco Javier	Hybrid Photovoltaic Power Forecasting Algorithm for Managing Virtual Power Plants

13:15-14:00

LUNCH

14:00-16:00

Session A-III: Computer/Software Engineering – Cybersecurity - 1
Chair: Wael Saafin

ID	Authors	Title
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96	Ruberg, Priit ; Meinberg, Erki; Ellervee, Peeter	Software Parser and Analyzer for Hardware Performance Estimations
120	Dalibor Hršak ; Vladimir Brajković; Vlatka Cubric-Curik; Ino Curik; Strahil Ristov	Update on Magellan, the Software for the Analysis of a Single Gender Lineage in Pedigrees
139	Encalada, Fabian; Salamea, Christian	Lithium-Ion Cell Data Acquisition Prototype of a Personal Mobility Electric Vehicle
176	Carlos Ivan Cardona Garcia , Tinoco, Hector A	Computational Fluid Dynamics Modeling of a Pneumatic Air Jet Nozzle for an application in Coffee Fruit Harvesting
318	Trifonov, Ventsislav; Pencheva, Evelina N; Atanasov, Ivaylo	Multiuser Talker Control as a Service in Railway Communications
352	Saafin, Wael ; Brahim, Abdelbasset	Image Demosaicking Using Super Resolution Techniques
658	Yoo, Youngjun; Choi, Janghee ; Lee, Hyunkeun	Design Parameter Optimization of Refrigeration System using Univariate Dynamic Encoding Algorithm for Searches
900	Luzuko Tekeni , Reinhardt A Botha	A Systematic Literature Review into Security Education, Training and Awareness Aimed at Home Users

14:00-16:00

Session B-III: ML/DL – IoT, Modelling - 1
Chair: Asghar Ehtisham

ID	Authors	Title
15	Collaguazo, Adriana E. ; Estrada Pico, Rebeca Leonor; Valeriano, Irving; Tomala Pozo, Josue	Wifi-Crowd Spy: A Novel Crowd-Counting System
67	Ciobotaru, Alexandru; Gota, Dan ; Puscasiu, Adela; Stan, Ovidiu P; Fanca, Alexandra; Domuta, Claudiu; Valean, Honoriu; Miclea, Liviu	Demographic Attributes Classification via Convolutional Neural Networks: A Proposed Solution
323	Hamishebahar, Younes ; Jadidi, Zahra; Jo, Jun	Crack Segmentation Enhancement Using an Adaptive Hyper-Parameter Tuning Scheme Configured by a Novel Crack Type Clustering Method
106	Jean-Michel Sahut	Machine Learning and Sentiment in Forecasting Crude Oil Price during the Covid-19 Pandemic
424	de Paz Centeno, Iván ; García, Maite; García-Olalla, Óscar; Alaiz Moretón, Héctor	Using Super Resolution Perception for Anomaly Detection in Energy Load Profiles
432	Saura, Nathaniel ; Matsumoto, Koh; Benkadda, Sadruddin; Ibano, Kenzo; Lee, Heun Tae; Ueda, Yoshio; Hamaguchi, Satoshi	Improving Penalized Semi Supervised Nonnegative Matrix Factorization Result's Confidence Using Deep Residual Learning Approach in Spectrum Analysis
504	DeLozier, Christian; Blanco, Justin; Rakvic, Ryan; Shey, James; Jung, Jennifer; Rooney, Forte	A Performance Analysis of Deep Neural Network Models on an Edge Tensor Processing Unit
278	Asghar, Ehtisham ; Hill, Martin ; Lynch, Conor	A Regularization-Based Long Short-Term Memory Architecture Design for Solar Irradiance Prediction

14:00-16:00

Session C-III: High Voltage Engineering
Chair: Gurralla, Gurunath

ID	Authors	Title
104	Jansen, Luca Lena ; Thomaßen, Georg; Antonopoulos, Georgios; Buzna, Luboš	Estimating Hydro State of Charge Profiles for Large-Scale Nodal and Zonal Pricing Models Using a Heuristic Approach
137	Ashrafi Niaki , Seyed Hassan ; Chen, Zhe ; Jensen, Birgitte Bak; Shariabadi, Kamran; Liu, Zhou; Hu, Shuju	DC Protection Design for VSC-HVDC Systems Based On Transient Stability Issue
340	Kalke, Durvesh; Gurralla, Dr. Gurunath	IEC/IEEE 60255-118-1-2018 Compliance Testing of SRF, SOGI and Park PLLs for Synchrophasors
431	Brodimas, Dimitrios ; Tzanis, Nikolaos; Plakas, Konstantinos ; Birbas, Alexios; Birbas, Michael	Optimal Relocation of Virtualized PDC in Edge-Cloud Architectures under Dynamic Latency Conditions
508	Joseph, Francis C ; Gurralla Gurunath	Homotopy Based Error Estimator for Adaptive Modified Euler in Transient Stability Simulations
906	Rizekos, Vasilis ; Bachoumis, Athanasios; Birbas, Alexios; Birbas, Michael	ConvLstm-Based Fault Detection and Classification in Active Distribution Grids
911	Manna, Carmelo ; Amato, Antonino Salvatore; Bonanno, Vincenza Piera; Miraglia, Andrea; Musumeci, Mario Salvatore; Russo, Antonio Domenico; Torrisi, Giuseppe; Vecchio, Gianfranco	Study on Magnetic-Induced Disturbances of the Ground Potential
960	Cao Yang; Rui Pestana; Nuno Souza e Silva	Coupled Simulation of Electrical and Natural Gas network system – The Iberian case

16:00-16:15

COFFEE BREAK

16:15-18:15

Session A-IV: Computer/Software Engineering – Cybersecurity - 2
Chair: Masike Malatji

ID	Authors	Title
427	Hueros Barrios, Pablo José	Addressing Cybersecurity Threats In Prosumer-Based Nanogrids With MQTT Communication
497	Nouioua, Nadhir ; Seddiki, Ali ; Abdelkrim , Ghaz	Joint Watermarking-Encryption Scheme Utilizing Transform Domain and Advanced Encryption Standard
525	Nouioua, Nadhir ; Seddiki, Ali; Abdelkrim , Ghaz	Blind Digital Watermarking Method Based on Quadtree Decomposition and Complex Wavelet Transform for Medical Application
648	Perrone, Gaetano; Caturano, Francesco; d'Ambrosio, Nicola ; Previdente, Luigi; Romano, Simon Pietro	ExploitWP2Docker: a Platform for Automating the Generation of Vulnerable WordPress Environments for Cyber Ranges
840	Nosrati, Komeil ; Belikov, Juri; Tepljakov, Aleksei; Petlenkov, Eduard	Image Encryption using Fractional Singular Chaotic Systems: An Extended Kalman Filtering Approach
862	Morháč, Dušan; Košťál, Kristián ; Valaštín, Viktor	Sharing fungible assets across Polkadot paraverse
1001	Gotsev, Lyubomir ; Jekov, Boyan K; Parusheva, Yana; Kovatcheva, Eugenia	Cyber Threats on Smart Grid: Concerns, Attacks and Advanced Detection
995	Gajdoš, Martin ; Nováková, Marie; Lamoš, Martin; Ríha, Pavel; Rektorová, Irena; Mikl, Michal	Dynamics of brain activity can reflect early signs of neurodegeneration
144	Masike Malatji	Industrial control systems cybersecurity: Back to basic cyber hygiene practices

16:15-18:15

Session B-IV: ML/DL – IoT, Modelling - 2
Chair: Wolny-Dominiak Alicja

ID	Authors	Title
578	Mortazavi, Mir Gholamreza; Hosseini Shirvani, Mirsaeid ; Dana, Arash	A Discrete Cuckoo Search Algorithm for Reliability-aware Energy-efficient IoT Applications Multi-service Deployment in Fog Environment
579	Hosseini Shirvani, Mirsaeid ; Babaeikiadehi, Sara	A Hybrid Meta-heuristic-based Linear Regression Algorithm for Live Virtual Machine Migration in Cloud Datacenters
915	Vogel, Richard; Schmidsberger, Falk; Kühn, Alexander; Schneider, Kristan A.; Manthey, Robert ; Hösel, Claudia; Baumgart, Matthias; Roschke, Christian; Ritter, Marc; Vodel, Matthias	You Can't Drive My Car - A Method to Fingerprint Individual Driving Styles In a Sim-Racing Setting
931	Vecchio, Gianfranco ; Amaducci, Simone; Cosentino, Luigi Giovanni; Finocchiaro, Paolo	Pulse Recognition by using a Convolutional Neural Network (CNN)
944	Sleiman, Rita ; Tran, Kim-phuc; Thomassey, Sébastien	Natural Language Processing for Fashion Trends Detection
515	Hurtiš, Radoslav ; Guba, Peter; Kyselica, Juraj	Simulation of reactive groundwater flow and salinization in carbonate-rock aquifers
757	Kockkodaj, Waldemar W; Mazurek, Mirosław; Pedrycz, Witold; Rogalska, Elżbieta; Roth, Reuben; Wolny-Dominiak, Alicja ; Woodbury-Smith, Marc; Xue, Songwen; Zbyrowski, Rafał	Combating harmful Internet use with peer assessment and differential evolution

16:15-18:15

Session C-IV: Mixed Session
Chair: Storti Gajani Giancarlo

ID	Authors	Title
720	Storti Gajani Giancarlo	A Circuit Based Model of the Lymphatic System
727	Babenko, Yevheniia	Methodical bases of creation and modeling of information system in plant growing
843	Kaspříková, Nikola	Rectifying AOQL acceptance sampling plans for known standard deviation
63	Snehkata Yadav	Impact of temperature on negative capacitance based Junctionless Accumulation Mode Ferroelectric FET(JAM-FE-FET)
947	Jack, McClelland ; Omid, Niksan; Mohammad, Zarifi	Investigating a Microwave Waveguide Sensor with an Organic PEDOT:PSS Boundary for Humidity Detection
825	Vannak, VAI ; Samphors, Eng; Chhith, Chhlonh	Development of LVAC Distribution Network Topologies with PV System Integration for an Urban Area: A Case Study of Cambodia
387	Radoslaw Puka , Iwona Skalna, Bartosz Lamasz	Swap Method to improve N-NEH+ algorithm
1045	Ike Mafa , Simon Winberg	Satellite RFI Analysis and Prediction for HERA
153	Ahmad Alzahrani	Two-Phase IPOS DC-DC Step-up Converter for PV Interface

18:15-18:30

CLOSING