

INTCEC

4. INTERDISCIPLINARY CONFERENCE
ON ELECTRICS AND COMPUTER



Chicago - Illinois, USA

11-13 June
2024

4. Interdisciplinary Conference on Electrics and Computer (INTCEC 2024) CONFERENCE PROGRAMME

[Time Zone: Central Daylight Time, Chicago Time (GMT-5)]

1. DAY (11 June 2024) - HALL A (PHYSICAL SESSIONS)

09:00-09:15	OPENING SESSION PHYSICAL - The Welcome Messages	Prof. Dr. Sam Abuomar (Lewis University) - Prof. Dr. Erol Kurt (Founder & Chairman)
	KEYNOTE SESSION 1A	Session Chair: Prof. Dr. Sam Abuomar
09:15-10:00	Towards Efficient, Secure, and Quality-aware Data Analytics and Sharing	Assoc. Prof. Dr. Kewei Sha - University of North Texas, USA
	SESSION 1A Efficiency in Electrical Energy	Session Chair: Abdulaziz Almalaq
10:00-10:50	204-Reinforcement Learning in Smart Building Management: A Paradigm Shift towards Intelligent Energy Efficiency and Optimization	Abdulaziz Almalaq
	226-On the Feasibility of Using Space Solar Power for Load Chasing in an Electrical Power Grid	Richard Madonna, Aarush Kukreja
	368-Enhancing Power Network Robustness and Efficiency through Network Analysis and Probabilistic Simulation	Santiago Ospina Ferreira, Harun Pirim
10:50-11:20	COFFEE BREAK	
	SESSION 2A Trends in Machine Learning	Session Chair: Henry Hexmoor
11:20-13:00	55-Remittances and Financial Inclusion: Micro-level Empirical Evidence from Uzbekistan	Masuda Isaeva, Bekzod Rakhmonov, Alisher Umarov
	293-Computational Complexity of Neural Network Linear Layer Inference Optimizations	Klaus Pendl, Branislav Rudić
	312-All you need is Knowledge, Experience and Tools: A Framework for Integrating Digital Labour with White Collar work	Salvatore Vella, Salah Shariah
	365-Brain Inspired Access Synthetic Consciousness Using a Neural Network Cluster	Oleksandr Jockuschi, Avery Leveque, Henry Hexmoor
	363-AARA-PR: Asset-Aware PageRank-based Security Resource Allocation Method for Attack Graphs	Mohammad Ryiad Al-Eiadeh, Mustafa Abdallah
	14-Deep Learning Framework Design for Diabetic Retinopathy Abnormalities Classification	Meenakshi Sood, Shruti Jain, Charu Bhardwaj
13:00-14:15	GROUP PHOTO & LUNCH BREAK	
	SESSION 3A Artificial Neural Network (ANN) Applications	Session Chair: Jieh-Shian Young
14:15-16:00	375-Deep Learning for Reddit Text Classification: TextCNN and TextRNN Approaches	Qiyu Long, Zhichen Wang, Zhichen Wang
	382-Design of a technological platform for teaching children's musical initiation using gamification	Nayeth Solorzano, Lissenia Sornoza, Michael Arce, Josue Tomala, Mercedes Mawyin
	417-Advancements in Histopathologic Cancer Detection: A Deep Learning Odyssey	Kanwarpartap Singh Gill, Rahul Chauhan, Nagendar Yamsani, Rupesh Gupta, Hani Alshahrani, Adel Sulaiman, Mana Saleh Al Reshan, Asadullah Shaikh
	76-Study on Target Tracking Commands of UAV PTZ Visual Systems Based on the Acquired Image after Pattern Recognition	Jieh-Shian Young
	366-Stability of Role Assignments in Modified Networks	Christopher Schneider, Piotr Szczurek
	291-A Methodology for Recursive Compression of the Compressed Data Files	Bekir Tevfik Akgün
16:00-16:30	COFFEE BREAK	
	SESSION 4A Trends in Electronics and Communication	Session Chair: Salahuddin Morsalin
16:30-17:30	31-The Comparison of Three Types' Resource Allocation Approaches for Scalable Video Coding (SVC) -based Multimedia's Multicast Broadcast Service (MBS)	Chung-Ming Huang, Shao-Chieh Hsu
	384-Enhancing Intrusion Detection through Deep Learning and Generative Adversarial Network	Md Habibur Rahman, Leo Martinez III, Avdesh Mishra, Mais Nijim, Ayush Goyal, David Hicks
	25-Integration of GAN Environmental Sound Filtering and the CNN Sound Recognition System	Pin-Chieh Ho, S. M. Salahuddin Morsalin, Ho-En Liao, Tzu-Hsiung Chen, Ming-Hwa Sheu, Szu-Hong Wang, Chung-Chian Hsu
	327-High-Fidelity Simulation of a Cartpole for Sim-to-Real Deep Reinforcement Learning	Linus Bantel, Peter Domanski, Dirk Pflüger

2. DAY (12 June 2024) - HALL A (ONLINE SESSIONS)

09:00-09:15	OPENING SESSION ONLINE	Prof. Dr. Sam Abuomar (Lewis University) - Prof. Dr. Erol Kurt (Founder & Chairman)
	KEYNOTE SESSION 2A	Session Chair: Prof. Dr. Sam Abuomar
09:15-10:45	Considerations on the Impact of Data science, Artificial Intelligence Augmented Reality on the Future of Higher Education and Society	Prof. Dr. David Livingston
	Enlightening into brain's frugality: Interplay of Computational and Neural Coordination	Prof. Dr. Alexandre Muzy
	That was then, this is now	Dr. Roger L. King
	SESSION 5A Trends in Deep Learning	Session Chair: Gerhard P. Tan
10:50-12:00	92-Drowsiness Detection and Head Pose Estimation in Online Learning Platforms with Image Processing	Gürcan Ünsal, Adem Tekerek
	153-Deep Learning Image Classification for Surat Mangyan Script Preservation	Gerhard P. Tan, Aivor Padilla, Richmond Supleo, Dianalyn Espiritu, Romalyn Gomez, Marife A. Rosales
	231-Adverse Drug Reaction Prediction: Graph Neural Networks and Causal Inference Techniques	Jay Patel, Rudra Patel
	352-Personalized stress detection from chest-worn sensors by leveraging machine learning	Md Nahid Hasan, Mithun Saha, Md Sultan Mahmud, Samir Poudel, Satish Wagle, Khem Poudel
	62-Unmanned Aerial Vehicle detection and Tracking using Image Segmentation and Bayesian Filtering	Mohammed S. Alshehri, Muhammad Ovais Yusuf, Muhammad Hanzla
	SESSION 6A Energy Applications	Session Chair: Waqar Waheed
12:00-13:15	15-Partial Discharge Modeling Using ATP Software	John H. Avila Rojas, Marco A. Tigre Deleg, Flavio A. Quizhpi Palomeque
	61-Environmental Emission Reduction in Replacing Various Traditional Generators by PVs	Md Shahin Alam, Ahmad Almoma, S. Ali Arefifar, Il-Seop Shin
	259-Solar Powered Portable Water Purifier for Use in Under-Resourced, Emergency and Mobile Situations	Darren Ray, Jonathan Macias, Isabel Garcia, Christopher Panlasigui, Brandon Dang, Darian Tam, Ha Thu Le
	415-Power Quality Enhancement of Rectifiers of Water Electrolysis for the Green Hydrogen	Seda Kul, Selami Balci, S.Alperen Celtek, A. Ozgur Polat
	134-To Study the Impact on Power Consumption in the COVID-19 Paradigm and Data-driven Load Forecasting Technique with LSTM-RNN	Waqar Waheed, Qingshan Xu
	330-Long-Term and Short-term Analysis of the Transition Toward a Full Renewable Energy Supply in Galapagos Islands by 2050	Anahí Barreto-Cuesta, Victor Herrera-Perez, As'Ad Zakaria, Sasa Djokic
	SESSION 7A - Control Applications	Session Chair: Nayeth Idalid Solorzano Alcivar
13:15-14:30	93-Automatic Generation of System Verilog Assertions for Verification of Safety Mechanisms	Ahmed Khalil, Alyaa Mohamed, Eslam Mamdouh, Islam Ahmed, Mariam Youssef, Mohamed Yasser, Omar Abdelkader, Omar Ayman, Omar Elsokkary, Yasmine
	142-Active Disturbance Rejection Control with Integral Action for Magnetic Levitation Control	Gunyaz Ablay
	319-Optimal Stabilization of a Class of Nonlinear Systems via High Differential Gain Feedback Bounded Control	Andrzej Latocha
	345-Universal Real-Time Control of an Electro-Hydraulic Servo System Utilizing Mathematical Model and Multibody Simulation	Jussi Asikainen, Daniel Roozbahani, Marjan Alizadeh, Heikki Handroos
	364-Advancing Autonomous UAV Trajectory Tracking with Compensation for External Actuator Disturbances	Omendey Sánchez Alarcón, Juan E. Ruiz Zea, Pablo S. Rivadeneira
	SESSION 8A - Trends in Communication	Session Chair: Trupti Shripad Tagare
14:30-15:45	179-Network-based Ransomware - A New Threat Demonstrated on the Example of Industrial Control Systems	Robert Altschaffel, Jana Dittmann, Kevin Lamshoef, Emirkan Toplu
	181-Study of the Impact of Constellation Rotation in a Dab+ Transmission	Patrick Sotindjo, Carlos M. M. Agossou, Mawudjlo Aschareel Akakpo, Maurice Comlan, Leopold Djogbe, Antoine Vianou
	402-Optimizing Spectrum Usage in Dynamic Wireless Mesh Networks: A Cognitive Radio Approach	Trupti Shripad Tagare, Vidyashree K N, Chaitra A, Mahesh Kumar N, Druva Kumar S, Shruthi M
	422-Design and Preliminary Analysis of a New Electromagnetic Energy Harvester	Teoman Özçiçek, Kayhan Çelik, Erol Kurt
	424-Deep Learning for Speaker Recognition: A Comparative Analysis of 1D-CNN and LSTM Models Using Diverse Datasets	Hiwa Hassanzadeh, Jihad Anwar Qadir, Saman Muhammad Omer, Mohammed Hussein Ahmed, Edris Khezri
	SESSION 9A - Trends in Software Engineering	Session Chair: Kushal K. Ponugoti
15:45-17:00	101-Spike Stall Precursor Detection in Axial Compressor System using GNN-RNN Hybrid Architecture	Golam Gause Jaman, Marco P. Schoen, Jichao Li
	124-Multi-Objective Genetic Algorithm for Materialized View Optimization in Data Warehouses	Mahdi Manavi
	137-Just Enough Software Engineering for Domain Scientists in Research Software Development	Melody L. Hammel, Lan Lin
	186-Software for inspection of soil resources in Solanum tuberosum crops	Álvaro Pulido-Aponte, Claudia L. Garzón-Castro
	280-Doodle2Clothing: A clothing design recognition and searching model from a doodle drawing	MD Fahim Afridi Ani, Asif Zubayer Palak, Shaikh Atisha Rahbath Dip, Arnab Pramanik, Tayaba Amin Medha, Farig Yousuf Sadeque
	SESSION 10A Artificial Intelligence Applications	Session Chair: Shuaa S. Alharbi
17:00-18:15	21-Tackling "Leaky" Facial and Object Recognition Operations Over Federated Learning	Hemendra Vyas, Paul M Torrens
	149-Computer Vision based Tree Stocking For Forest Conservation	J. Jeba Emilyn, R. Eswar Yaswanth Raj, R. Huzair Ahmed, M. Poojha, S.A. Praveen
	311-Automatic Segmentation of Teeth from Panoramic X-Ray Images Employing Deep Learning Models	Haifa F. Alhasson
	315-Enhancing Road Safety with Neural Network Segmentation Models: A Deep Dive into Crack Detection	Shuaa S. Alharbi
	SESSION 11A Data & Signal Processing Techniques	Session Chair: Patrick Sotindjo
18:15-19:30	192-Monitoring the Health of Heart Failure Patients using an Artificial Heart	Ezequiel Muxito, Cristiano Akamine
	294-A Novel Approach to Enhancing Identity Document Authentication with Copy Move Forgery Detection Using CNN	Kilari Jyothsna Devi, Jonnalagadda Dinesh, Kavuri Lakshmi Neha, Kuraku V N S Ravi Teja, Maddela Jayashree, J Rama Devi
	295-Leveraging Intermediate Languages: Current Applications	Logan Cannan, Tommy Morris
	323-CRUDE (CRUD + Entity) Structure to Help Unambiguous Functional Requirement Specification in Natural Language	Franklin Parrales-Bravo, Víctor Gómez Rodríguez, Lorenzo Cevallos-Torres
		388-Emotion Recognition through EEG Signals with Movie Clips Stimuli Jonathan Axel Cruz Vazquez, Jesús Yaljá Montiel Pérez, Rodolfo Romero Herrera

2. DAY (12 June 2024) - HALL B (ONLINE SESSIONS)

2. DAY (12 June 2024) - HALL B (ONLINE SESSIONS)		
SESSION 5B Applications in Electrical Engineering		
		Session Chair: Haroon Wahab
10:50-12:00	96-Proposal for The Regularization of The Interior Electrical Installations in Hospital Centers, Case Study in The Guadalupe Specialty Clinic	Joseline Daniela Salgado Morales, Kevin Daniel Alvarez Cajamarca, Flavio Quizhpi Palomeque
	102-Energy harvesting from road infrastructure using an innovative electromagnetic system: A Conception study	Hissam Karim, Florian Dumas, Gregorio Boccalero, Alain Sylvestre
	162-Fault Diagnosis based in Fractional Observers	Arturo Govea Vargas, Rafael Martínez Guerra
	300-Optimal Harnessing Machine Learning for Monitoring and Predictive Maintenance in Electrical Transformers	Hanane Hadiki, Fouad Slaoui Hasnaoui, Semaan Georges
	287-Modeling interface charges in Al ₂ O ₃ /Ga ₂ O ₃ normally-on n-channel field effect transistors	Hamid Fardi
	5-Quantitative Analysis of Pressure Vessel Deflection Under Variable Wind Load	Isaak Dassa, Konstantinos Karamitsios
SESSION 6B Trends in Electrical Machines & Control		
		Session Chair: I. Can Dikmen
12:00-13:15	423-Educational hardware trainer for teaching the Dual Active Bridge in a DC Grid	S.J.C Koning, D.C. Zuidervliet, P.J. van Duijsen
	338-Electronic Control System for the Left Ventricular Assistance Device	Mohd Hasan, Cristiano Akamine
	310-Digital Correlation Spectrometer for APSEra - evolution and trends	Srivani K.S., Girish B.S., Mayuri Sathyanarayana Rao, Madhavi S., Kamini P.A., Keerthipriya Sathish, Somashekar R., Saurabh Singh, Udaya Shankar N., Seetha S.
	81-A Case Study in Applying Functional Safety On A* Accelerator Design	Adham Osama, Ahmed Mostafa, Mohamed Gamal, Usama Imam, Ahmed Khailil, Hassan Mostafa, Eslam Mamdouh , Islam Ahmed, Mohamed Taha
	337-HPCNeuroNet: Advancing Neuromorphic Audio Signal Processing with Transformer-Enhanced Spiking Neural Networks	Hiruna Vishwamith, Murat Isik , I. Can Dikmen
SESSION 7B - IoT Applications		
		Session Chair: Masoud Shakiba
13:15-14:30	180-Chitrantaran: Web-based Platform to Enhance the Document Digitization Process using OCR and Machine Translation	Manish Kumar Gupta , Gaurav Phokmare, Sonal Todkar, Siddharth Dhawan, Hemant Desai, Neha Gupta, Yogesh Shishodia, Saurabh Salunkhe
	253-Bridging the Gap in Comprehensive Network Security and Data Management through IoT Innovation	Suthesh Ravichandran, Jatinder Singh, Andrew David , Masoud Shakiba
	304-IOT Based Smart Agriculture System Using ESP32	Radhika R. Boralkar , Shirish S. Kulkarni
	320-AQuaTwin: A Digital Twin Framework for Early Detection of Water Contamination	Md Rafiul Kabir , Sumaiya Afroz Mila, and Sandip Ray
	370-microIoTSCADA: A Tool to Monitor and Control Renewable Energy-based Systems using MODBUS	Samer Jaloudi
SESSION 8B - Machine Learning Applications		
		Session Chair: Rahul Priyadarshi
14:30-15:45	412-Developing Predictive Maintenance for Early Warnings of Machine Failures Using Machine Learning Techniques in the Fourth Industrial Era	Rabia Emhamed Al Mamlook, Muhammad Obeidat, Najat Elgeberi, Ahmad Nasayreh, Abdulbaset Ali Frefer, Hasan Gharaibeh, Tasnim Gharaibeh , Qais Al-Na'amneh
	346-Enhancing Coverage in Wireless Sensor Networks Using Machine Learning Techniques	Rahul Priyadarshi , Raj Vikram, ZeKun Huang, Tiansheng Yang, Rajkumar Singh Rathore
	354-Towards Holistic Analysis of Wireless Capsule Endoscopic Videos: A Taxonomy-Driven Machine Learning Framework for Clinically Comprehensive WCE Frame Level Analysis	Haroon Wahab , Rita Goel, Maida Alamgir, Irfan Mehmood, Khan Muhammad, Hassan Ugail
	376- Machine Learning Models Based on Grid-Search Optimization and Shapley Additive Explanations (SHAP) for Early Stroke Prediction	Rabia Emhamed Al Mamlook, Fathia Lahwal, Najat Elgeberi, Qais Al-Na'amneh, Muhammad Obeidat, Ahmad Nasayreh, Hasan Gharaibeh , Tasnim Gharaibeh, Hanin Bzizi
331-Real-Time Waste Detection Based on YOLOv8	Abdelhak Mehadjbia, Fouad Slaoui-Hasnaoui	
SESSION 9B - Computing & Educational Applications		
		Session Chair: Rita Goel
15:45-17:00	107-Assessing the Impact of Gamification Tools' Usability on Student Engagement: A Comparative Study in Engineering Education	Heba Ismail, Moutasim El Ayoubi , Mohammad Qasem, Fares Al Areefi
	189-Fine-Tuned Face Recognition Models for Sibling Discrimination	Rita Goel , Maida Alamgir, Haroon Wahab, Irfan Mehmood, Hassan Ugail
	202-A Comprehensive Evaluation of the Impact of ATM QoS Mechanisms on Network Performance for Multimedia and Data Applications	Mahdi Manavi
	322-Metaverse in Education Beyond Instructional and 3D Design: A Usability Evaluation	Heba Ismail, Ahmed Hadi Al-Dubaisi
	396-Unravelling Ethical Dimensions in Blockchain Technology	Bhavraaj Singh , Muhammad Abdul Basit Ur Rahim, Shahid Hussain, Muhammad Abid Rizwan, Jasleen Kaur Bali
421-Intelligent Transportation Activity Recognition Using Deep Belief Network	Abdulwahab Alazeb , Danyal Khan, Ahmad Jalal	
SESSION 10B Artificial Intelligence Applications		
		Session Chair: Abdelhak Mehadjbia
17:00-18:15	373-Single-stage Object Detection from Thermal Images	Ahmed Mostayed , Xuefu Zhou
	361-Enhancing Deep Learning Models for Brain Tumor Detection: The Impact of Activation Function Selection	Ahmad Nasayreh , Ameera S. Jaradat, Rabia Emhamed Al Mamlook, Ayah Bashkami, Hasan Gharaibeh, Qais Al-Na'amneh, Hanin Bzizi
	357-Areas of Improvement for Autonomous Vehicles: A Machine Learning Analysis of Disengagement Reports	Tyler Ward
	321-Mixed-Precision Data Driven Control of a Complex Dynamic System Model	Christopher Hixenbaugh , Alfa Heryudono, Eugene Chabot
	418-Aerial Target Identification Based on Classification Learner	Kadir Başkaya , Erol Kurt
SESSION 11B Hardwares & Security		
		Session Chair: Kaya Kuru
18:15-19:30	191-BoW Standard-Based Receiver Architecture: Design, Analysis, and Implementation	Lavakumar Navilipuri , Sneha Kadam, Andy Hei
	288-Towards Trustworthy RISC-V Designs: Formal Verification of the MFENCE Instruction	Kushal K. Ponugoti , Nikhila Karlapalem
	125-A Comparative Study on Various ML Models Using Synthetic Data for Privacy Preservation	Md. Ashraf Uddin , Md. Naimul Ahsan, Mrinmoy Das
	129-Securing the IoT: An In-Depth Analysis of Ubuntu Core Hardening Measures Using CIS LTS Guide	Aarón David Echeverría , Mercedes Amor Pinilla, Henry Ramiro Carvajal Mora
	190-Blockchain-enabled Defense Mechanism for Protecting Federated Learning Systems against Malicious Node Updates	Adil Attiaoui , Abdellatif Kobbane, Jamal El Hachimi, Marwane Ayaida, Khalid Chougali
	274-Human-in-the-Loop Telemanipulation Schemes for Autonomous Unmanned Aerial Systems	Kaya Kuru