

TENCON 2024 — Technical Programme

Day 0: 1 December 2024, Sunday

Session	S-1-1: Special Session–Women in Engineering
Date/Day	Sunday, 1 December 2024
Room	Lotus Jr 4E
Chair(s)	Shilpa Manandhar

1400–1430 Welcome by Prof. Agnes Inwanti, (R10 WIE Chair)

Session ID: 1430–1445 **Time:** S-1-1.1 hrs **Paper ID:** 1571049199

Threat Hunting on 5G Future Communication Testbed Using MITRE FiGHT Framework

Antonia Angela Hatem Attieh, Larrissa Yeo Xiao Tong, Jing Kai Ng, Lester Tan Yi Teck, Ivan Ng Say Mun and Purnima Murali Mohan (Singapore Institute of Technology, Singapore)

Session ID: 1445–1500 **Time:** S-1-1.2 hrs **Paper ID:** 1571048412

Exploratory Data Analysis for Brain Stroke Prediction Using Multiple Regression Models

Elaine Mae G Doctolero, Elyssa Kristine A Espinosa, Juliana Joie G Gianan, Marielet A. Guillermo, Claire Receli M Reñosa, Arvin Fernando and Rhen Anjerome Bedruz (De La Salle University, Philippines)

Session ID: 1500–1515 **Time:** S-1-1.3 hrs **Paper ID:** 1571049810

Characteristic Parameters Retrieval of Frequency Selective Surfaces Based on Very Fast Simulated Annealing

He, Yinghong Wen and Xiao Jia (Beijing Jiaotong University, China)

Session ID: 1515–1530 **Time:** S-1-1.4 hrs **Paper ID:** 1571047816

Enhanced Black-Scholes Option Pricing: Bit-Width Optimization With Automatic Differentiation and Lagrange Multipliers

Siyi Xiang and Ray C. C. Cheung (City University of Hong Kong, Hong Kong)

Session ID: 1530–1545 **Time:** S-1-1.5 hrs **Paper ID:** 1571063215

EcoCoin: A Mobile App for Sustainable Actions

*Amruthavarshini Sriram (National Institute of Technology Warangal, India);
Ravi Kishore Kodali and Lakshmi Boppana (National Institute of Technology, Warangal, India);
Akshay T Sriram (National Institute of Technology Calicut, India)*

Session ID: 1545–1600 **Time:** S-1-1.6 hrs **Paper ID:** 1571050795

AI RoomDecor

*Lakshmi Boppana (National Institute of Technology Warangal, India);
Manepalli Alekhya, Mandadi Rishitha, Chadhalavada Geethika and Varsha Sanga (National Institute of Technology, India)*

Session	WS-2-1: IEEE HIVE @ TENCON 2024 A Hands-on Professional Development Program	[Parallel]
Date/Day	Sunday, 1 December 2024	
Room	Melati Jr 4111	
Chair(s)		

Session: Opening Time: 1400–1415 hrs

Welcome & Introduction by

Dr. Aishwarya Bandla

Chair, IEEE Region 10 Young Professionals

Time: 1415–1545 hrs

Mastering Presentation and Pitching Skills

Dr. Sudeendra Koushik

Chief Innovator, Innovation by Design

Time: 1445–1600 hrs

Announcement of Competition Finalists

1600 – 1615 hrs

Tea Break

Session	S-2-1: Special Session–Women in Engineering	[Parallel]
Date/Day	Sunday, 1 December 2024	
Room	Lotus Jr 4E	
Chair(s)	Shilpa Manandhar	

Session ID: 1615–1630 **Time:** S-1-2.1 hrs **Paper ID:** 1571048601

Enhancing Lower Primary Students Engagement Through Object Detection in Cartoon Images

Ke Yi Lee, Tushar Pranav, Donny Soh and Indriyati Atmosukarto (Singapore Institute of Technology, Singapore)

Session ID: 1630–1645 **Time:** S-1-2.2 hrs **Paper ID:** 1571048978

SpeeDF–A Speech De-Identification Framework

*Chandra Veerappan (Singapore Institute of Technology, Singapore);
Priyanshu Dhingra (Rajiv Gandhi Institute of Petroleum Technology, India);
Zhengkui Wang and Tong Rong (Singapore Institute of Technology, Singapore)*

Session ID: 1645–1700 **Time:** S-1-2.3 hrs **Paper ID:** 1571050392

Safety-Aware Path Planning Using Metaheuristics

*Bhagya Samarakoon (Singapore University of Technology and Design, Singapore);
Rishan Sachinthana Wijenayaka (Singapore University of Technology and Design, Singapore & SUTD, Singapore);
Vinu Sivanantham (Singapore University of Technology and Design, India);
Rajesh Elara Mohan (Singapore University of Technology and Design, Singapore)*

Session ID: 1700–1715 **Time:** S-1-2.4 hrs **Paper ID:** 1571048550

Image Question-Distractors Generation as a Conversational Model

Jingquan Chen, Indriyati Atmosukarto and Muhamed Fauzi Bin Abbas (Singapore Institute of Technology, Singapore)

Session ID: 1715–1730 **Time:** S-1-2.5 hrs **Paper ID:** 1571057587

An Open-Source RAG Architecture for LLMs

Lakshmi Boppana, Manav Bhadoria and Ravi Kishore Kodali (National Institute of Technology, Warangal, India)

1800 – 2000 hrs	Welcome Reception (Melati Jr & Lotus Jr Bayview Foyer, Level 4)
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Day 0: 1 December 2024, Sunday

Day 1: 2 December 2024, Monday

Day 1: 2 December 2024, Monday

0700–1900 Registration @ Melati Main Ballroom, Level 4

0815 Opening Ceremony @ Melati Main Ballroom, Level 4

Time: 0815 – 0825 hrs

Opening remarks by R10 Director Prof Lance Fung

Time: 0825 – 0835 hrs

Welcome Remarks TENCON 2024 updates by Arokiaswami Alphones

Time: 0835 – 0850 hrs

Technical Program updates by S K Sahoo, TPC Co-Chair

Keynote [I]	Prioritizing Societal and Ethical Concerns with Responsible AI
By	Dr Tom Coughlin, 2024 IEEE President & CEO
Date/Day	2 December 2024, Monday / 0850–0925 hrs
Venue	Melati Main Ballroom, Level 4
Chair(s)	A Alphones

Keynote [II]	Data-Centric AI in the Age of LLMs
By	Dr Bryan Low, Director of AI Research, AI Singapore, Deputy Director, NUS AI Institute
Date/Day	2 December 2024, Monday / 0925 – 1000 hrs
Venue	Melati Main Ballroom, Level 4
Chair(s)	A Alphones

1000 – 1025 hrs Tea Break (Orchid Main Ballroom, Level 4)

Keynote [III]	Collaborating Together for a Safer and Secure Future
By	Dr Jonathan Pan, Chief, Disruptive Technologies Office, Director, xCybersecurity, Enterprise Group, Home Team Science and Technology Agency (HTX), Singapore
Date/Day	2 December 2024, Monday / 1025 – 1100 hrs
Venue	Melati Main Ballroom, Level 4
Chair(s)	A Alphones

Session	M-1-1 RF Circuits and Antennas
Date/Day	Monday, 2 December 2024
Room	Melati Jr 4011
Chair(s)	Nasimuddin

Session ID: M-1-1.1 **Time:** 1100–1115 hrs **Paper ID:** 1571049362

V-Band Power Amplifier MMIC Cell Implemented in GaAs

*Jeremy T Parker (The University of Sydney, Australia & Macquarie University, Australia);
Simon Mahon, Andrew Jones and Syed Muzahir Abbas (Macquarie University, Australia)*

Session ID: M-1-1.2 **Time:** 1115–1130 hrs **Paper ID:** 1571034059

Metasurface Inspired Antenna for Wireless Charging of Medical Devices

*Visvajit Ganesh, Shreya Vijayasimha, Imaculate Rosaline S, Shreyas Bedsur and Subhasri S (Ramaiah Institute of Technology, India);
Arokiaswami Alphones (Nanyang Technological University, Singapore)*

Session ID: M-1-1.3 **Time:** 1130–1145 hrs **Paper ID:** 1571041930

Compact Circularly Polarized Microstrip Antenna With Harmonic Suppression for Enhanced Ambient RF Energy Harvesting

*Debanjali Sarkar (VIT-AP University, India);
Partha Pratim Shome (Dr B R Ambedkar National Institute of Technology Jalandhar, India);
Venkateswara Rao Bhukya and Ratna Kumari Duru (VIT-AP University, India);
Mamoni Saha and Taimoor Khan (National Institute of Technology Silchar, India)*

Session ID: M-1-1.4 **Time:** 1145–1200 hrs **Paper ID:** 1571028083

A Sub Tera-Hz Antenna for 5G Applications

*Sambhudutta Nanda (VIT AP University);
Bappaditya Roy (VIT-AP University, Amaravati, India)*

Session ID: M-1-1.5 **Time:** 1200–1215 hrs **Paper ID:** 1571044684

A Dual Band Sawtooth Corrugated Vivaldi Antenna Design for Communication Signal Enhancement and Emergency Applications

*Jessa Lee Salutes Balasa (Mindanao State University - Iligan Institute of Technology, Philippines);
Dhondee D Mugot and Olga Joy Gerasta (Mindanao State University-Iligan Institute of Technology, Philippines)*

Session ID: M-1-1.6 **Time:** 1215–1230 hrs **Paper ID:** 1571049396

Design of Planar Inverted-F Antenna (PIFA) for 4G Cellular Base Station With Spectrum Sensing

*Jessa Lee Salutes Balasa and Gil P Ramas (Mindanao State University - Iligan Institute of Technology, Philippines);
Olga Joy Gerasta (Mindanao State University-Iligan Institute of Technology, Philippines);
Ruel Laraño Saranza (Mindanao State University- Iligan Institute of Technology, Philippines)*

Session	M-2-1 Electronics 1	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Melati Jr 4111	
Chair(s)	Chinnaiah Mangali	

Session ID: M-2-1.1 Time: 1100–1115 hrs Paper ID: 1571058133

High-Efficiency RF-To-DC Rectifier for Low Power Levels Using Coplanar Waveguide Technology

Rudraprasad Debnath and Abhishek Jha (IIT Tirupati, India)

Session ID: M-2-1.2 Time: 1115–1130 hrs Paper ID: 1571042055

Configurable FOCV-Based MPPT for Indoor Light and TEG Energy Harvesting Systems

Rochelle M. Sabarillo (Mindanao State University - Iligan Institute of Technology, Philippines);

Nathan Rhei N. Remo, Clark Rojen B. Casanes and Kirt Menard L. Ugay (MSU-IIT, Philippines)

Session ID: M-2-1.3 Time: 1130–1145 hrs Paper ID: 1571036466

A Non-Overlapping Synthetic Clock Generator for DC-DC Boost Converter in 65 nm CMOS Technology

Dave Carl Maghinay and Vince Dominique Silvosa (Mindanao State University- Iligan Institute of Technology, Philippines);

Kevin Maglinte (MSU-Iligan Institute of Technology, Philippines);

Rochelle M. Sabarillo (Mindanao State University - Iligan Institute of Technology, Philippines)

Session ID: M-2-1.4 Time: 1145–1200 hrs Paper ID: 1571059089

91.2% Efficiency Low Power Non-Inverting Buck-Boost Converter

Amit Gupta and Sunita M S (PES University, India)

Session ID: M-2-1.5 Time: 1200–1215 hrs Paper ID: 1571043231

Dual-Path CCM Boost Converter Optimization for Indoor Light Energy Harvesting in Biomedical Devices

Nieva Mapula (MSU-Iligan Institute of Technology, Philippines);

Gene Fe P Palencia (Mindanao State University - Iligan Institute of Technology, Philippines);

Kevin Maglinte, Thesa L. Vergara, Michelle Hermias and Migo Navarro (MSU-Iligan Institute of Technology, Philippines)

Session ID: M-2-1.6 Time: 1215–1230 hrs Paper ID: 1571048174

High PSR Low Power Negative-R-Assisted LDO

Soorya V and Sunita M S (PES University, India)

Session	M-3-1 Information 1	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Orchid Jr 4211	
Chair(s)	Luo Bin	

Session ID: M-3-1.1 **Time:** 1100–1115 hrs **Paper ID:** 1571041951

Shape-Centric Augmentation With Strong Pre-Training for Training From Rendered Images

*Takeru Inoue and Masakazu Ohkoba (Meiji University, Japan);
Kouji Gakuta, Etsuji Yamada and Kariya Aoi (Digital Printing & Solutions Co., Ltd., Japan);
Masakazu Kinoshita (Shinsei Printing Co., Ltd., Japan);
Yujiro Kitaide (Digital Printing & Solutions Co. Ltd., Japan);
Ryusuke Miyamoto (Meiji University, Japan)*

Session ID: M-3-1.2 **Time:** 1115–1130 hrs **Paper ID:** 1571042013

Predicting On-Road Carbon Emissions Using Traffic Camera Images

*Francisco Benita and Padmapriya Srinivasan (Singapore University of Technology and Design, Singapore);
Clement Chan Keen Teng, Yue Han Kuan and Kai Bo Yeoh (River Valley High School, Singapore)*

Session ID: M-3-1.3 **Time:** 1130–1145 hrs **Paper ID:** 1571041417

GAN-Based Tone Curve Learning Approach to HDR Image Reconstruction Method Using Single LDR Image

*Tomoya Yoshida and Kazunori Uruma (Kogakuin University, Japan);
Ryohei Sasaki (Tokyo University of Technology, Japan)*

Session ID: M-3-1.4 **Time:** 1145–1200 hrs **Paper ID:** 1571032408

Practical Mobile Based Services for Identification of Chicken Diseases From Fecal Images

Piyanuch Silapachote, Ananta Srisuphab, Waris Damkham, Pattanan Korkiattrakool and Kanokpitch Songdechakavit (Mahidol University, Thailand)

Session ID: M-3-1.5 **Time:** 1200–1215 hrs **Paper ID:** 1571049576

Image Encryption and Decryption Based on Reformed System Transformation

*Chien-Shu Hsieh (Chinese Culture University, Taiwan);
Chang-Ming Wu (Chung Yuan Christian University, Taiwan)*

Session ID: M-3-1.6 **Time:** 1215–1230 hrs **Paper ID:** 1571038315

Robust Facial Emotion Recognition System via De-Pooling Feature Enhancement and Weighted Exponential Moving Average

*Khin Cho Win (Indian Institute of Technology Hyderabad, India);
Zahid Akhtar (State University of New York Polytechnic Institute, USA);
C Krishna Mohan (IIT Hyderabad, India)*

Session	M-4-1 Emerging Topics 1	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Orchid Jr 4212	
Chair(s)	Billy Pik Lik Lau	

Session ID: M-4-1.1 **Time:** 1100–1115 hrs **Paper ID:** 1571033964

Development of an Arm With Safety Harness Function to Hold and Release Lifeline for Multi-Rotor Drones

*Kaichi Masui (Kyoto Institute of Technology, Japan);
Yoshiyuki Higashi (Osaka Institute of Technology, Japan);
Yuichi Sawada (Kyoto Institute of Technology, Japan)*

Session ID: M-4-1.2 **Time:** 1115–1130 hrs **Paper ID:** 1571032876

ProfileOTMM: Automated Glycan Motif Analysis Through Pattern Recognition of Tree Structures

*Kento Totsuka (Soka University, Japan);
Masae Hosoda (Research Organization of Information and Systems, Japan);
Kiyoko F. Aoki-Kinoshita and Norihiko Shinomiya (Soka University, Japan)*

Session ID: M-4-1.3 **Time:** 1130–1145 hrs **Paper ID:** 1571041730

A Scalable Decentralized Reinforcement Learning Framework for UAV Target Localization Using Recurrent PPO

*Kurukulasuriya Nicholas Adrian Leon Fernando (University of Moratuwa, Sri Lanka);
Billy Pik Lik Lau (Singapore University of Technology and Design, Singapore);
Chau Yuen (Nanyang Technological University, Singapore);
U-Xuan Tan (Singapore University of Technology and Design, Singapore)*

Session ID: M-4-1.4 **Time:** 1145–1200 hrs **Paper ID:** 1571050764

Online Coverage Path Planning in LIDAR Perception Constrained Environments

*Rishan Sachintha Wijenayaka (Singapore University of Technology and Design, Singapore & SUTD, Singapore);
Niranjan Prabakar, Bhagya Samarakoon, Muthugala Arachchige Viraj Jagathpriya Muthugala and Rajesh Elara Mohan (Singapore University of Technology and Design, Singapore)*

Session ID: M-4-1.5 **Time:** 1200–1215 hrs **Paper ID:** 1571041796

An Enhanced Network Density Based Centrality for Influential Node Detection in Complex Networks

*Sourav Kumar Mitra (Indian Institute of Engineering Science and Technology, Shibpur, India);
Susanta Chakraborty (Indian Institute of Engineering Science and Technology, India);
Malay Kule (Indian Institute of Engineering Science and Technology, Shibpur, India)*

Session ID: M-4-1.6 **Time:** 1215–1230 hrs **Paper ID:** 1571050633

Unitary Operator Based Quantum Secure Access Structure for Medical Image Sharing

*Digambar Padulkar (COEP Technological University, India & Savitribai Phule Pune University Pune, India);
Jibi Abraham (COEP Technological University Pune, India)*

Session	M-5-1 AI in Medical Applications	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Orchid Jr 4311	
Chair(s)	N.Sriraam	

Session ID: M-5-1.1 **Time:** 1100–1115 hrs **Paper ID:** 1571058000

Performance Evaluation of Wearable Nasal Sensor for Respiratory Assessments Using A NOVEL EDRS-LSTM Deep Learning Model

*Natarajan Sriraam (Dayanand Sagar College of Engineering, India);
Purnima BR, Kiran D and KRV Subramanian (Ramaiah Institute of Technology, India);
Gayathri Devi HJ (Ramaiah Memorial Hospital, India)*

Session ID: M-5-1.2 **Time:** 1115–1130 hrs **Paper ID:** 1571057839

Highresolution Net for Estimation of Fetal Growth Parameters From First Trimester Ultrasound Images

*Natarajan Sriraam (Dayanand Sagar College of Engineering, India);
Babu Chinta (Ramaiah Institute of Technology, India);
S Suresh and S Sudarshan (Mediscans Pvt Ltd, India)*

Session ID: M-5-1.3 **Time:** 1130–1145 hrs **Paper ID:** 1571034321

Automated Detection of Missing Tooth Regions in CBCT Slices for Dental Implant Planning Using CNN With Transfer Learning

*Mohammad Farid Naufal (Universitas Surabaya & Institut Teknologi Sepuluh Nopember, Indonesia);
Chastine Fatichah (Institut Teknologi Sepuluh Nopember, Indonesia);
Eha Renwi Astuti and Ramadhan Hardani Putra (Universitas Airlangga, Indonesia);
Katarina Inezita Prambudi (Institut Teknologi Sepuluh Nopember, Indonesia)*

Session ID: M-5-1.4 **Time:** 1145–1200 hrs **Paper ID:** 1571033872

Robust Fetal Head Circumference Calculation on Ultrasound Images Using Just-In-Time Compiled Ellipse Fitting

Pandega Abyan Zumarsyah, Achmad Solaeman, Fhareza Alvindo and Hanung Adi Nugroho (Universitas Gadjah Mada, Indonesia)

Session ID: M-5-1.5 **Time:** 1200–1215 hrs **Paper ID:** 1571050260

Mental Health Evaluation Through Text Analysis

Ravi Kishore Kodali, Pravalika Bharatha and Lakshmi Boppa (National Institute of Technology, Warangal, India)

Session ID: M-5-1.6 **Time:** 1215–1230 hrs **Paper ID:** 1571037035

TFET Based Biosensor Using Dielectric Modulation Technique

*Manikanta kurivella (QIS College of Engineering and Technology, India);
Umakanta Nanda and Chandan Kumar Pandey (VIT-AP University, India)*

Session	M-6-1 Special Session—Artificial Intelligence for Electric Drivetrain Design, Optimization and Control [Parallel]
Date/Day	Monday, 2 December 2024
Room	Orchid Jr 4312
Chair(s)	Hla Nu Phyu

Session ID: M-6-1.1 **Time:** 1100–1115 hrs **Paper ID:** 1571038458

Gear Ratio and Induced Speed Range of Magnetic Gearbox With Speed and Load Conditions

*Pawarisa Tanpoonkiat (Chulalongkorn University, Afghanistan);
Chalita Dangkaokiew, Chairak Uawanapaksa, Jeremy Thawornpanich and Ronnapee Chaichaowarat (Chulalongkorn University, Thailand)*

Session ID: M-6-1.2 **Time:** 1115–1130 hrs **Paper ID:** 1571032312

fNIRS Acquisition Device for Monitoring Cognitive Load

H G N P Amarathunga, S m p m Ruvindi, L M I Anushka, Kandabodage Don Sithum Chamantha Wijenayake, Anjula C De Silva and Rukshani Liyanaarachchi (University of Moratuwa, Sri Lanka)

Session ID: M-6-1.3 **Time:** 1130–1145 hrs **Paper ID:** 1571038331

The Effect of Latency on the Performance of Remote Driving With Video Streaming

*Phenpasu Kongsonthana (Thailand);
Popploy Jinnathampong, Suwapat Thongyoun and Ronnapee Chaichaowarat (Chulalongkorn University, Thailand)*

Session ID: M-6-1.4 **Time:** 1145–1200 hrs **Paper ID:** 1571038704

Optimized Parameter Design of Binocular Structured Light System for Precision Reflective Surface CPU in Industrial Assembly Processes

*Cheuk Tung Shadow YIU (The Hong Kong University of Science and Technology, Hong Kong);
Kam-Tim Woo (Hong Kong University of Science and Technology, Hong Kong)*

Session ID: M-6-1.5 **Time:** 1200–1215 hrs **Paper ID:** 1571050190

Design and Analysis of Variable Airgap Permanent Magnet Motor for Electric Drivetrain

*Hla Nu Phyu (A*STAR Institute of High Performance Computing, Singapore);
Zaifeng Yang (Institute of High Performance Computing, Astar, Singapore);
Heng Kiat Jonathan Hey (ASTAR, Singapore)*

Session ID: M-6-1.6 **Time:** 1215–1230 hrs **Paper ID:** 1571044210

A Novel Architecture for Predictive Maintenance and Realtime Monitoring of Electric Vehicle

*Bhaskar Acharjee (Jalpaiguri Government Engineering College, India);
Rakhi Roy Ghosh (Assistant Proffesor at Jalpaiguri Government Engineering College, India);
Tanmoy Dey, Sudipta Das and Debjit Nandan (Jalpaiguri Government Engineering College, India)*

1230 – 1400 hrs Lunch, Exhibition & Interactive Forum I (Orchid Main Ballroom, Level 4)

Session	M-1-2 Communications 1	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Melati Jr 4011	
Chair(s)	Shilpa Manandhar	

Session ID: M-1-2.1 **Time:** 1400–1415 hrs **Paper ID:** 1571034350

Active Element Arrangement and Prediction Model for Channel Estimation in IRS-Assisted Systems

*Yoshihiko Tsuchiya (Tokyo University of Science, Japan);
Norisato Suga (Shibaura Institute of Technology & ATR, Japan);
Kazunori Uruma (Kogakuin University, Japan);
Masaya Fujisawa (Tokyo University of Science, Japan)*

Session ID: M-1-2.2 **Time:** 1415–1430 hrs **Paper ID:** 1571063121

Performance Analysis of THz and VLC Systems Under the Impact of Weather and Human Blockages

*Hanshita Prabhakar (IIITD, India);
Saumya Chaturvedi Chaturvedi (IIIT-Delhi, India);
Akshita Gupta (Indraprastha Institute of Information Technology, India);
Vivek A Bohara (Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi), India)*

Session ID: M-1-2.3 **Time:** 1430–1445 hrs **Paper ID:** 1571048990

Timing Synchronization and Data Detection for MIMO OTFS/OTSM Systems Under Spatial Correlation

*Sapta Girish Babu Neelam (Bharat Electronics Limited, India);
Md Asfani (Central Research Laboratory, India)*

Session ID: M-1-2.4 **Time:** 1445–1500 hrs **Paper ID:** 1571042650

Optimization of Virtual Cooperative Spectrum Sensing in UAV-Aided Cognitive Radio Networks

Ramanjaneya R Sanivarapu and Narasimha Rao Banavathu (National Institute of Technology Andhra Pradesh, India)

Session ID: M-1-2.5 **Time:** 1500–1515 hrs **Paper ID:** 1571031164

High Performance Flow Table for 5G Core Networks Based on FPGA

*Van Vo (Viettel High Technology Industries Corporation, Vietnam);
Nguyen Phu Lam (Viettel High Technology, Vietnam);
Nguyen Nhat Truong (Viettel High Technology Industries Corporation - Viettel Group, Vietnam);
Tuan Duc Vu (Viettel High Technology, Viettel Group, Vietnam)*

Session ID: M-1-2.6 **Time:** 1515–1530 hrs **Paper ID:** 1571042642

Erroneous Reporting in a Multiple Antenna-Based Cognitive Radio Network Using Soft Fusion Scheme

Karumanchi Beulah Sujan and Narasimha Rao Banavathu (National Institute of Technology Andhra Pradesh, India)

Session	M-2-2 Electronics 2	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Melati Jr 4111	
Chair(s)	Luo Bin	

████████ **Session ID:** M-2-2.1 **Time:** 1400–1415 hrs **Paper ID:** 1571033666

Characteristics of Crystal Defects in AlGaN/GaN HEMTs at Low Temperature

Haruki Hayashi, Kento Kondo and Hirohisa Taguchi (Chukyo University, Japan)

████████ **Session ID:** M-2-2.2 **Time:** 1415–1430 hrs **Paper ID:** 1571051700

A 1 ÅµA Quiescent All-MOS Subthreshold Design Technique of Voltage Reference for Biomedical and IoT Device Applications

*Jefferson A. Hora (MSU-Iligan Institute of Technology, Philippines);
Xi Zhu and John Michael Gorospe (University of Technology Sydney, Australia)*

████████ **Session ID:** M-2-2.3 **Time:** 1430–1445 hrs **Paper ID:** 1571030981

A Novel Offset Compensation Technique for a High Speed Flash ADC

*Abhijit Roy (Indian Institute of Information Technology, Guwahati, India);
Ashutosh Yadav (Semi Conductor Laboratory, Chandigarh, India);
Sounak Roy (Indian Institute of Information Technology Guwahati, India)*

████████ **Session ID:** M-2-2.4 **Time:** 1445–1500 hrs **Paper ID:** 1571055894

WSe2: ZnO Nanocomposite Based UV Photodetector With PMMA (HTL) and PCBM (ETL)

*Tulika Bajpai (Motilal Nehru National Institute of Technology Allahabad, India);
Rajendra Kumar Nagaria (M.N. National Institute of Technology, India);
Shweta Tripathi (Motilal Nehru National Institute of Technology Allahabad, India)*

████████ **Session ID:** M-2-2.5 **Time:** 1500–1515 hrs **Paper ID:** 1571041886

A 2ÅµA Quiescent Current Output-Capacitorless LDO With Adaptive Power Transistors for Low Power Management in Energy Harvesting

*Nieva Mapula, Jayson Abayan, Winston John Astillero and Dennis Von Itaas (MSU-Iligan Institute of Technology, Philippines);
Harreez Villaruz, Gene Fe P Palencia and Rochelle M. Sabarillo (Mindanao State University - Iligan Institute of Technology, Philippines);
Kevin Maglinte and Jefferson A. Hora (MSU-Iligan Institute of Technology, Philippines)*

████████ **Session ID:** M-2-2.6 **Time:** 1515–1530 hrs **Paper ID:** 1571035409

Impact of Dielectric Materials in an Asymmetrical Shaped Band to Band TFET

*Manikanta kurivella (QIS College of Engineering and Technology, India);
Umakanta Nanda, Sreeram Mounika and Chandan Kumar Pandey (VIT-AP University, India)*

Session	M-3-2 Information 2	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Orchid Jr 4211	
Chair(s)	Lokesh Bheema Thiagarajan	

Session ID: M-3-2.1 **Time:** 1400–1415 hrs **Paper ID:** 1571041817

Multi-Template Siamese Networks With Clique Contrastive Learning for Palm Print Authentication

Pai Chet Ng and Kan Chen (Singapore Institute of Technology, Singapore);

Jeannie SA Lee (Georgia Institute of Technology, USA);

Tram Truong-Huu (Singapore Institute of Technology (SIT), Singapore & Agency for Science, Technology and Research, Singapore)

Session ID: M-3-2.2 **Time:** 1415–1430 hrs **Paper ID:** 1571049737

VULDetect: A Lightweight Ensemble Based Framework for Automated Software System Vulnerability Detection

Irshad Ali and Basant Subba (Indian Institute of Technology Ropar, India)

Session ID: M-3-2.3 **Time:** 1430–1445 hrs **Paper ID:** 1571042046

SecURL: Design and Implementation of a Machine Learning-Based Web Extension for Malicious URL Detection

Steven S Sison (University of the Philippines, Philippines);

Eriel John V Benavides, Conrado Luiz B Bencio and Isabel Austria (University of the Philippines Diliman, Philippines)

Session ID: M-3-2.4 **Time:** 1445–1500 hrs **Paper ID:** 1571034639

Refined Trademark Sticker Detection Method Using Minimum Pooling Features

Junchu Huang and Yan Song (Research Institute of China Telecom Corporation Ltd, China)

Session ID: M-3-2.5 **Time:** 1500–1515 hrs **Paper ID:** 1571041988

Improved Text Summarization With RL-Enabled PEGASUS and Siamese Network Evaluation

Sree Dhyuti Nimmagadda (Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram, USA);

Mercy Faustina (IIITDM Kancheepuram, India);

B. B. Sivaselvan (IIITDM Kancheepuram)

Session ID: M-3-2.6 **Time:** 1515–1530 hrs **Paper ID:** 1571050844

Empirical Analysis of Complex-Valued Neural Nets on Real-Valued Tabular Data

Shriram Gunasekar (IIT Madras, India);

Lokesh Bheema Thiagarajan (Singapore University of Social Sciences, Singapore);

Vijaykumar Vaithiyam Rengarajan (Madras Institute of Technology, Anna University Chennai, India)

Session	M-4-2 Emerging Topics 2	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Orchid Jr 4212	
Chair(s)	Nicholas Wong	

Session ID: M-4-2.1 **Time:** 1400–1415 hrs **Paper ID:** 1571033966

Estimating the Inclination Angle of Steel Structures Using ToF Camera for Attractive Infrastructure Inspection Drones

*Taisei Okubo (Kyoto Institute of Technology, Japan);
Yoshiyuki Higashi (Osaka Institute of Technology, Japan);
Yuichi Sawada (Kyoto Institute of Technology, Japan)*

Session ID: M-4-2.2 **Time:** 1415–1430 hrs **Paper ID:** 1571049474

Effectiveness of Consumer-Grade EEG Devices in Brainwaves Signal Processing: A Review

*Rhou Ian A Pigtañ (Ateneo de Manila University, Philippines & Universidad de Deusto, Spain);
Carlos Oppus and Luisito L. Agustin (Ateneo de Manila University, Philippines);
Jon Legarda (Deusto Institute of Technology, Spain)*

Session ID: M-4-2.3 **Time:** 1430–1445 hrs **Paper ID:** 1571034512

Knowledge-Based Extraction for Inverse Design of Optical Thin-Films

*Ze Dong Saw (Dunman High School, Singapore);
Ethan Jun Qi Wang (Dunman High, Singapore);
Zaifeng Yang (Institute of High Performance Computing, Astar, Singapore);
Viet Phuong Bui (Institute of High Performance Computing, Singapore);
Ching Eng Png (A*STAR Institute of High Performance Computing, Singapore)*

Session ID: M-4-2.4 **Time:** 1445–1500 hrs **Paper ID:** 1571049158

Particle Filter-Based State and Parameter Estimation for Delta Wing UAV

Gulivindala Kishore and Subrahmanyam Saderla (Indian Institute of Technology Kanpur, India)

Session ID: M-4-2.5 **Time:** 1500–1515 hrs **Paper ID:** 1571032464

Object Recognition and Tracking Using Multiple LiDARs

Marino Matsuba, Masafumi Hashimoto, Ryo Taguchi and Kazuhiko Takahashi (Doshisha University, Japan)

Session ID: M-4-2.6 **Time:** 1515–1530 hrs **Paper ID:** 1571032273

Windshield Wiper Control Compensating Chatter Oscillation Characteristic Based on the Phase Difference Between Left and Right Arms

Sodai Kato and Tsutomu Tashiro (Osaka Sangyo University, Japan)

Session	M-5-2 Special Session on Ethical and Technical Challenges of Deepfakes and Disinformation [Parallel]
Date/Day	Monday, 2 December 2024
Room	Orchid Jr 4311
Chair(s)	Anjali Diwan

■ Session ID: M-5-2.1 Time: 1400–1415 hrs Paper ID: 1571032837

Advancing Continual Learning for Robust Deepfake Audio Classification

Feiyi Dong, Qingchen Tang, Yichen Bai and Zihan Wang (University of New South Wales, Australia)

■ Session ID: M-5-2.2 Time: 1415–1430 hrs Paper ID: 1571034484

Can Deepfakes Mimic Human Emotions? A Perspective on Synthesia Videos

Satota Mandal (Indian Institute of Engineering Science and Technology Shibpur, India);
Bratati Ghosh, Sunen Chakraborty and Ruchira Naskar (Indian Institute of Engineering Science and Technology, Shibpur, India)

■ Session ID: M-5-2.3 Time: 1430–1445 hrs Paper ID: 1571041785

Leveraging Transfer Learning for Region-Specific Deepfake Detection

Sim Wei Xiang Calvert (University of Glasgow Singapore, Singapore);
Pai Chet Ng (Singapore Institute of Technology, Singapore)

■ Session ID: M-5-2.4 Time: 1445–1500 hrs Paper ID: 1571033922

Comparative Analysis of Machine Learning and Deep Learning Models for Deepfake Detection: Insights From the Celeb-DF Dataset

Yashoda Alpesh Chouhan, Chetankumar Chudasama, Deepak Kumar Verma and Munindra Lunagaria (Marwadi University, India)

■ Session ID: M-5-2.5 Time: 1500–1515 hrs Paper ID: 1571035679

Enhancing Deepfake Detection With Ensemble Learning: A Study on Celeb DF Dataset

Kokou Elvis Khorem Blitti, Fitsum Getachew Tola, Reshma Sunil and Anjali Diwan (Marwadi University, India)

■ Session ID: M-5-2.6 Time: 1515–1530 hrs Paper ID: 1571034050

Using Local Phase Quantization to Identify Fake Faces in Online Social Networks

Srijit Kundu (SRM Institute of Science and Technology, Chennai, India);
Tanusree Ghosh and Ruchira Naskar (Indian Institute of Engineering Science and Technology, Shibpur, India)

Session	M-6-2 Special Session on AI in Acoustic and Speech 1	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Orchid Jr 4312	
Chair(s)	Kim Noori	

Session ID: M-6-2.1 **Time:** 1400–1415 hrs **Paper ID:** 1571034301

SNIPER Training: Single-Shot Sparse Training for Text-To-Speech

*Perry Lam (Singapore University of Technology and Design (SUTD), Singapore);
Huayun Zhang and Nancy F. Chen (Institute for Infocomm Research, Singapore);
Berrak Sisman (The University of Texas at Dallas, USA);
Dorien Herremans (Singapore University of Technology and Design (SUTD), Singapore)*

Session ID: M-6-2.2 **Time:** 1415–1430 hrs **Paper ID:** 1571040116

Enhanced Instrument Identification Using CNNs: A Comparative Study With Random Forest Models

Nicolas George Wacyk, Tobias S Yoo, Jason William Ripper, Walter Daniel Leon-Salas and Noori Kim (Purdue University, USA)

Session ID: M-6-2.3 **Time:** 1430–1445 hrs **Paper ID:** 1571050801

Analysis of Features for Dysarthria Severity Classification From Speech

*P H Keerthi (Sri Sivasubramaniya Nadar College of Engineering, India);
P Vijayalakshmi (Sri Sivasubramaniya Nadar College of Engineering);
Anushiya Rachel Gladston and T Nagarajan (Shiv Nadar University Chennai, India)*

Session ID: M-6-2.4 **Time:** 1445–1500 hrs **Paper ID:** 1571046020

Multi-Label Emotion Share Regression From Speech Using Pre-Trained Self-Supervised Learning Models

*Bagus Tris Atmaja (National Institute of Advanced Industrial Science and Technology, Japan & Institut Teknologi Sepuluh Nopember, Indonesia);
Akira Sasou (National Institute of Advanced Industrial Science and Technology, AIST, Japan)*

Session ID: M-6-2.5 **Time:** 1500–1515 hrs **Paper ID:** 1571033996

Accented Text-To-Speech Synthesis With a Conditional Variational Autoencoder

*Jan Melechovsky, Ambuj Mehrish (Singapore University of Technology and Design, Singapore);
Berrak Sisman (The University of Texas at Dallas, USA);
Dorien Herremans (Singapore University of Technology and Design (SUTD), Singapore)*

1530 – 1600 hrs Tea Break (Orchid Main Ballroom, level 4)

Session	M-1-3 Communications 2	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Melati Jr 4011	
Chair(s)	Nicholas Wong	

Session ID: M-1-3.1 **Time:** 1600–1615 hrs **Paper ID:** 1571067839

High-Resolution and Low Clutter Radar Point Cloud Generation Method

*Siyuan Zhao (National University of Singapore & NUS ECE, Singapore);
Yong-xin Guo (National University of Singapore, Singapore)*

Session ID: M-1-3.2 **Time:** 1615–1630 hrs **Paper ID:** 1571042051

Study on Variable Tee and Bridge Tee Attenuators to Enhance IQ Mixer Sideband Suppression in Synthetic Aperture Radar Applications

*Abdurrasyid Ruhiyat (Universitas Indonesia, Indonesia);
Farohaji Kurniawan (National Research and Innovation Agency & BRIN, Indonesia);
Catur Apriono (Universitas Indonesia, Indonesia)*

Session ID: M-1-3.3 **Time:** 1630–1645 hrs **Paper ID:** 1571050414

Performance Evaluation of Cooperative Task Assignment and Path Planning Algorithms in UAV Networks

Sabitri Poudel and Sangman Moh (Chosun University, Korea (South))

Session ID: M-1-3.4 **Time:** 1645–1700 hrs **Paper ID:** 1571033764

A Study of Disaster Notification Wireless Mesh Network Applying Plumtree

*Tomoki Okuda (Kogakuin University, Japan);
Masaaki Ohnishi (Nohmi Bosai, Japan);
Ryohei Banno (Hitotsubashi University, Japan)*

Session ID: M-1-3.5 **Time:** 1700–1715 hrs **Paper ID:** 1571039941

Ray Propagation Channel Modeling Using Geographic Information Systems for Wireless Sensor Network Deployment

Allan Jose Mesa, Jr and Paul Jason Co (University of the Philippines Diliman, Philippines)

Session ID: M-1-3.6 **Time:** 1715–1730 hrs **Paper ID:** 1571034552

Investigation of Environment Dependence in Wi-Fi CSI-Based Crowd Counting Systems

John Dominic Domingo Santos, Rusty John Feliciano Alarcon, Kenshin Fermin Asuncion, Catherine Janz Salvador Galang, Hannah Gail Villamejor Oliveros and Josyl Mariela Rocamora Reyes (University of Santo Tomas, Philippines)

Session	M-2-3 Electronics 3	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Melati Jr 4111	
Chair(s)	Chinnaiah Mangali	

Session ID: M-2-3.1 **Time:** 1600–1615 hrs **Paper ID:** 1571028720

VLSI Implementation of Recursive CNNs With Multi-Scale Integration for Image Classification Improvement

Kai-Fen Chang and Yuan-Ho Chen (Chang Gung University, Taiwan)

Session ID: M-2-3.2 **Time:** 1615–1630 hrs **Paper ID:** 1571033153

Hardware Accelerator for Deep Neural Networks on Edge Devices Based on RISC-V Open Standard Instruction Set Architecture

Yen Ting Ng (Universiti Teknologi PETRONAS & SkyeChip Sdn. Bhd., Malaysia);

Afidalina Tumian (PETRONAS, Malaysia);

Eric Tatt Wei Ho (Universiti Teknologi PETRONAS & Center for Intelligent Signal & Imaging Research, Malaysia)

Session ID: M-2-3.3 **Time:** 1630–1645 hrs **Paper ID:** 1571050053

A Low-Latency and High-Accuracy Dual-Mode Neuron Design for Accelerating Neurological Diseases Simulation and Analysis

Wang Chao, Jiatong Guo, Jinxiang Gao, Zixuan Shen, Jipeng Wang, Zhuo Cheng, Jingru Jiang and Wenjue Chen (Huazhong University of Science and Technology, China)

Session ID: M-2-3.4 **Time:** 1645–1700 hrs **Paper ID:** 1571048634

Optimizing Convolutional Image Processing on RISC-V Using Branch Prediction on FPGA

Bindu Bhargavi Mekala (BITS Pilani Hyderabad, India);

Sujay Krishnan Subramanian (BITS Pilani Hyderabad Campus, India);

Sri Parameswaran (University of Sydney, Australia);

Soumya J (BITS Pilani, Hyderabad Campus, India)

Session ID: M-2-3.5 **Time:** 1700–1715 hrs **Paper ID:** 1571049750

Hardware Implementation of Multi-LFSR Pseudo Random Number Generator

T. Hui Teo and Maoyang Xiang (Singapore University of Technology and Design, Singapore);

Mostafa Elsharkawy (Egypt-Japan University of Science and Technology, Egypt);

Hen Rin Leao (Singapore University of Technology and Design, Singapore & Chang Gung University, Taiwan);

Jiacheng Xie, Gerald Hong Sheng Ek, Kang Yi Lee and Wee Yi Koh (Singapore University of Technology and Design, Singapore)

Session ID: M-2-3.6 **Time:** 1715–1730 hrs **Paper ID:** 1571034137

Design and Implementation of Low-Current Sensing Precision Circuit for Functional Serial Bus Transmission Multi-Site IC Testing

Juisse Patrick D Clavel (Mapua University, Philippines & JF TestSense Sdn Bhd, Malaysia);

Ramon Garcia (Mapua University, Philippines);

Marloun Sejera (Professor, Philippines)

Session	M-3-3 Information 3	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Orchid Jr 4211	
Chair(s)	Lokesh Bheema Thiagarajan	

Session ID: M-3-3.1 **Time:** 1600–1615 hrs **Paper ID:** 1571031491

Minimum Category Confusion for Semi-Supervised Industrial Quality Inspection

Yan Song and Junchu Huang (Research Institute of China Telecom Corporation Ltd, China)

Session ID: M-3-3.2 **Time:** 1615–1630 hrs **Paper ID:** 1571029083

Speech Signal Analysis Using Fractal Geometry for Phoneme Boundary Detection

Bhagath Parabattina (Lakireddy Bali Reddy College of Engineering Mylavaram, India & IIT Guwahati, India);

Pradip Das (Indian Institute of Technology Guwahati, India);

Malempati Shanmukha (Lakireddy Bali Reddy College of Engineering Mylavaram, India);

Sambasiva Rao Chindam (JNTUK Kakinada, India)

Session ID: M-3-3.3 **Time:** 1630–1645 hrs **Paper ID:** 1571040775

Forest Canopy Cover Mapping in High-Resolution Multisource Satellite Imagery Using Attention Recurrent Residual U-Net

Kassim Kalinaki, Owais Ahmed Malik and Daphne Teck Ching Lai (Universiti Brunei Darussalam, Brunei Darussalam)

Session ID: M-3-3.4 **Time:** 1645–1700 hrs **Paper ID:** 1571057600

Diabetest: Mobile Application for T2DM Detection Among Filipino Young Adults Using Facial Texture

Jan Kevin Albior Galicia, Maria Leonora Guico, Tricia Z. Pulmano and Lester Niel Sj. Salvador (Ateneo de Manila University, Philippines)

Session ID: M-3-3.5 **Time:** 1700–1715 hrs **Paper ID:** 1571057595

Public Vehicle Passenger Counting System Using Infrared Imaging With Data Analytics

John Michael Besmonte (Ateneo de Manila, Philippines);

Jherome Ivan Dela Cueva, Jan Kevin Albior Galicia, Maria Leonora Guico, Justito Vicente Jimenez and Danzkyle Dominic Valenzuela

(Ateneo de Manila University, Philippines)

Session ID: M-3-3.6 **Time:** 1715–1730 hrs **Paper ID:** 1571034603

Similarity Based Characterization and Identification of Breast Ultrasound Lesions in Space-Frequency Subband

Poulomi Das (OmDayal Group of Institutions, India);

Arpita Das (University of Calcutta, India)

Session	M-4-3 Emerging Topics 3	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Orchid Jr 4212	
Chair(s)	Christopher Lee	

Session ID: M-4-3.1 **Time:** 1600–1615 hrs **Paper ID:** 1571034243

SAMIC: Segment Anything Model for Integrated Circuit Image Analysis

*Yong Jian Ng, Yee Yang Tee and Deruo Cheng (Nanyang Technological University, Singapore);
Bah Hwee Gwee (NTU, Singapore)*

Session ID: M-4-3.2 **Time:** 1615–1630 hrs **Paper ID:** 1571034195

ScamDetector: Leveraging Fine-Tuned Language Models for Improved Fraudulent Call Detection

*Poh Yi Jie Nicholas (University of Glasgow Singapore, Singapore);
Pai Chet Ng (Singapore Institute of Technology, Singapore)*

Session ID: M-4-3.3 **Time:** 1630–1645 hrs **Paper ID:** 1571042812

Q-Learning and Double Q-Learning With Sliding Mode Control to Stabilize a Ball-And-Beam System

*Ratchapol Pichittanakorn (University of California, Los Angeles, USA);
Kasit Pacharatam (Waseda University, Thailand);
Xavier J Blake (Asian Institute of Technology & STEAM Kiddee Lab Skills Enhancement School, Thailand);
Narong Aphiratsakun (STEAM Kiddee Lab Skills Enhancement School, Thailand)*

Session ID: M-4-3.4 **Time:** 1645–1700 hrs **Paper ID:** 1571049125

LVIG-SAM: LiDAR-Vision-Inertial Odometry With Ground-Constraints via Smoothing and Mapping

Wenhui Zhao, Feng Yang and Yanbo Wang (Northwestern Polytechnical University, China)

Session ID: M-4-3.5 **Time:** 1700–1715 hrs **Paper ID:** 1571039426

Learning Media Advancement Using Virtual Reality Technology for Heavy Equipment Safety in Indonesian Vocational Schools

*Shofiyul Anam Al Mubarak (Institut Teknologi Sepuluh Nopember, Indonesia);
Supeno Mardi Susiki Nugroho (Sepuluh Nopember Institute Of Technology, Indonesia);
Feby Artwodini Muqtadiroh (Institut Teknologi Sepuluh Nopember, Indonesia);
Surya Sumpeno (Institut Teknologi Sepuluh Nopember (ITS), Indonesia);
Mauridhi Hery Purnomo (Institut of Technology Sepuluh Nopember, Indonesia)*

Session ID: M-4-3.6 **Time:** 1715–1730 hrs **Paper ID:** 1571042073

Integrating Virtual Reality and AI Avatars for Sustainable Urban Development: Transforming Kanyakumari

*Ashmi S and Raksha J (Anna University, India);
Ankayarkanni R (Formcept, India);
Darwin Jose Raju (Anna University, India)*

Session	M-5-3 Special Session on Advanced Nanotech for Chiplets towards AI century [Parallel]
Date/Day	Monday, 2 December 2024
Room	Orchid Jr 4311
Chair(s)	Lin Fujiang

████████ **Session ID:** M-5-3.1 **Time:** 1600–1610 hrs **Paper ID:** 1571049028

Research on Integration of Photonic and Electronic Chips Based on Glass Interposer

*Wanyi Yan, Dan Zhang and Daquan Yu (Xiamen University, China);
 Jin Zhao (Beijing University of Technology, China);
 Yongjian Chen and Zhuliang Lin (Xiamen University, China)*

████████ **Session ID:** M-5-3.2 **Time:** 1610–1620 hrs **Paper ID:** 1571049733

A 25Gbps Single-Ended to Differential Low-Noise Transimpedance Amplifier in 45nm SOI for High-Speed Optical Transceivers

*Juncheng Deng, Luyao Yuan, Zeyu Zhou and Jinfeng Xie (University of Science and Technology of China, China);
 Ahmed Wahba (Zagazig University, Egypt);
 Ping Ma and Yizhe Hu (University of Science and Technology of China, China);
 Fujiang Lin (USTC, China);
 Patrick Yue (The Hong Kong University of Science and Technology, Hong Kong);
 Liheng Lou (University of Science and Technology of China, China)*

████████ **Session ID:** M-5-3.3 **Time:** 1620–1630 hrs **Paper ID:** 1571048546

Radio-Frequency GaN-On-Si HEMT Technology for Future Communication Applications

*Geok Ing Ng (Agency for Science, Technology and Research, Singapore);
 Hanlin Xie (Institute of Microelectronics ASTAR, Singapore);
 Hanchao Li (Nanyang Technological University, Singapore)*

████████ **Session ID:** M-5-3.4 **Time:** 1630–1640 hrs **Paper ID:** 1571049740

β -Ga₂O₃-On-SiC RF MOSFETs

*Min Zhou (Xidian University, China);
 Hong Zhou (Xidian University, Xi'an, China);
 Jincheng Zhang and Hao Yue (Xidian University, China)*

████████ **Session ID:** M-5-3.5 **Time:** 1640–1650 hrs **Paper ID:** 9999999999

CMOS Compatible Visible Band Grating and Ultraviolet Avalanche Photodiode on Silicon Photonics Platform

NO Author

████████ **Session ID:** M-5-3.7 **Time:** 1700–1710 hrs **Paper ID:** 1571050818

Characterization of Dynamic RON on GaN HEMTs

*Shu Yang, Ph. D. and Jiahong Du (University of Science and Technology of China, China);
 Shaocheng Li (Zhejiang University, China)*

Session	M-6-3 Special Session on AI in Acoustic and Speech 2	[Parallel]
Date/Day	Monday, 2 December 2024	
Room	Orchid Jr 4312	
Chair(s)	Kim Noori	

Session ID: M-6-3.1 **Time:** 1600–1615 hrs **Paper ID:** 1571049985

Gender Difference in Hearing Health in the United States: A Spatiotemporal Analysis

Tianle Duan, Qingchun Li and Noori Kim (Purdue University, USA)

Session ID: M-6-3.2 **Time:** 1615–1630 hrs **Paper ID:** 1571034671

Linear Phase FIR Filter Design for Digital Hearing Aids Using a Neural Network-Based Optimization

Sorawat Chivapreecha (King Mongkuts Institute of Technology Ladkrabang, Thailand);

Poonna Yospanya (Kasetsart University, Thailand)

Session ID: M-6-3.3 **Time:** 1630–1645 hrs **Paper ID:** 1571034636

DisfluencySpeech - Single-Speaker Conversational Speech Dataset With Paralanguage

Kyra Wang (Singapore University of Technology and Design, Singapore);

Dorien Herremans (Singapore University of Technology and Design (SUTD), Singapore)

Session ID: M-6-3.4 **Time:** 1645–1700 hrs **Paper ID:** 1571033918

Accent Conversion in Text-To-Speech Using Multi-Level VAE and Adversarial Training

Jan Melechovsky (Singapore University of Technology and Design, Singapore);

Ambuj Mehrish (Singapore Institute of Technology and Design, Singapore);

Berrak Sisman (The University of Texas at Dallas, USA);

Dorien Herremans (Singapore University of Technology and Design (SUTD), Singapore)

Session ID: M-6-3.5 **Time:** 1700–1715 hrs **Paper ID:** 1571033008

Adaptive Variational Mode Decomposition Based Parkinson Disease Detection With Entropy-Based Features

Ramesh Chandra Pola (Sardar Vallabhbhai National Institute of Technology, Surat, India);

Pankaj Warule (Sardar Vallabhbhai National Institute of Technology Surat, India & Pravara Rural Engineering College Loni, India);

Siba Prasad Mishra (Sardar Vallabhbhai National Institute of Technology Surat, India);

Suman Deb (Sardar Vallabhbhai National Institute of Technology, Surat, India);

Sunandita Debnath (Indian Institute of Information Technology Vadodara, India)

Session ID: M-6-3.6 **Time:** 1715–1730 hrs **Paper ID:** 1571032424

Automatic Detection of Parkinson’s Disease Using Continuous Wavelet Transform-Based Time-Frequency Domain Analysis of Speech Signals

Pankaj Warule (Sardar Vallabhbhai National Institute of Technology Surat, India & Pravara Rural Engineering College Loni, India);

Siba Prasad Mishra (Sardar Vallabhbhai National Institute of Technology Surat, India);

Suman Deb (Sardar Vallabhbhai National Institute of Technology, Surat, India)

1730 hrs

End of Day 1

Day 2: 3 December 2024, Tuesday

Session	T-1-1 AI in Sensors
Date/Day	Tuesday, 3 December 2024
Room	Melati Jr 4011
Chair(s)	Taniza Roy

Session ID: T-1-1.1 **Time:** 0900–0915 hrs **Paper ID:** 1571042002

Hydrowatch: An IoT-Based in Situ Sensor System for Remote Water Quality Monitoring With Chlorophyll-a and Phosphate Concentration Measurement Capabilities

Julian Dominic O Abonal, Marion Joseph L Uy and Jaybie A de Guzman (University of the Philippines Diliman, Philippines);
 Mayzonee Ligaray (University of the Philippines, Philippines);
 M Cayetano (University of the Philippines Diliman)

Session ID: T-1-1.2 **Time:** 0915–0930 hrs **Paper ID:** 1571060809

Enhancing the Performance and Reliability of IoT Systems Using Predictive Route Recovery Mechanism

Mohammad M. Kadhum (Algonquin College & Queen's University, Canada)

Session ID: T-1-1.3 **Time:** 0930–0945 hrs **Paper ID:** 1571046884

A Meta Surface Material Based Patch Antenna for Future Wireless Sensor Space Craft 5G Systems

Vanitha Rani Rentapalli (VIT- AP University, India);
 Bappaditya Roy (VIT-AP University, Amaravati, India);
 Sambhudutta Nanda (VIT AP University, India)

Session ID: T-1-1.4 **Time:** 0945–1000 hrs **Paper ID:** 1571034028

A Cognitive Approach for Transmit Waveform Generation for Active Phased Array Multifunction Radars

Taniza Roy (Scientist, India)

Session ID: T-1-1.5 **Time:** 1000–1015 hrs **Paper ID:** 1571034352

Advancing EEG Analysis for Confusion Detection in Educational Settings Using BiLSTM Deep Learning Techniques

Aditya Oza (International Institute of Information Technology Naya Raipur, India & No, India);
 Vandita Diwan (International Institute of Information Technology Naya Raipur, India);
 Sanskriti Patel (International Institute of Information Technology, Naya Raipur, India);
 Bhavesh S Gyanchandani (IIITNR, India);
 Abhinav Roy (IIIT NR, India);
 Santosh Kumar (International Institute of Information Technology, Naya Raipur, India);
 Abhishek Shrivastava (IIIT Naya Raipur, India)

Session	T-2-1 Electronics 4	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Melati Jr 4111	
Chair(s)	Chinnaiah Mangali	

Session ID: T-2-1.1 Time: 0900–0915 hrs Paper ID: 1571034332

Kalasag: Development of Smartfoam for an Arnis Electronic Scoring System

*Alfred Jason Reinares Abanto (University of the Philippines, Diliman, Philippines);
Jaybie A de Guzman (University of the Philippines Diliman, Philippines)*

Session ID: T-2-1.2 Time: 0915–0930 hrs Paper ID: 1571033243

Low-Power Hamming Distance Detection Circuit Using Cross-Coupled Electronic Neuron

Daishi Nishiguchi, Masaaki Fukuhara, Mitsutoshi Yahara and Kuniaki Fujimoto (Tokai University, Japan)

Session ID: T-2-1.3 Time: 0930–0945 hrs Paper ID: 1571033599

A TENG Finger Sensor Enabled Human-Machine Interface for VR Applications

Chuyang Wu and Zhongda Sun (National University of Singapore, Singapore)

Session ID: T-2-1.4 Time: 0945–1000 hrs Paper ID: 1571026755

Enhancing the Readout Speed of NP-H-CAM Using Clocked CMOS Inverters

*Hisaya Sawada, Hirotaka Furukawa, Naruaki Hokari and Daishi Nishiguchi (Tokai University, Japan);
Yujiro Harada (National Institute of Technology, Kurume College, Japan);
Masaaki Fukuhara (Tokai University, Japan)*

Session ID: T-2-1.5 Time: 1000–1015 hrs Paper ID: 1571041254

Hydrogen Sensing Properties of the Pt Caped Ag Doped Gallium Oxide Nanomaterials

Md Mayen Uddin, Mohammad Ariful Islam Bhuyan and Hyeon Cheol Kim (University of Ulsan, Korea (South))

Session ID: T-2-1.6 Time: 1015–1030 hrs Paper ID: 1571041430

Failure Mode Classification of Wind Turbine Gearbox Utilizing Machine Learning Algorithms

*Muhammad Zacky Asy'ari (University of Indonesia, Indonesia);
Hapsoro Agung Nugroho (School of Meteorology, Climatology and Geophysics & Instrumentation Research Group, Indonesia);
Benyamin Kusumoputro (Universitas Indonesi, Indonesia)*

Session	T-3-1 Information 4	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4211	
Chair(s)	Sumit Bhowmik	

Session ID: T-3-1.1 **Time:** 0900–0915 hrs **Paper ID:** 1571047102

Analyzing the Accuracy of Mapping Paddy Rice Using Polarimetric Decomposition Parameters and Backscatter Intensity

*Robert Martin C Santiago (De La Salle University, Philippines);
Eduardo Jimmy Quilang (Philippine Rice Research Institute, Philippines);
Edwin Sybingco (De La Salle University, Philippines)*

Session ID: T-3-1.2 **Time:** 0915–0930 hrs **Paper ID:** 1571041881

Segmenting Growing and Dying Woody Roots in a Forest Using Deep Learning-Based Software

*Takuto Yamagata (University of Hyogo, Japan);
Hidetoshi Ikeno (The University of Fukuchiyama, Japan);
Toshifumi Kimura (University of Hyogo, Japan);
Teijiro Isokawa (Graduate School of Engineering, University of Hyogo, Japan);
Tatsuro Nakaji (Hokkaido University, Japan);
Mizue Ohashi (University of Hyogo, Japan)*

Session ID: T-3-1.3 **Time:** 0930–0945 hrs **Paper ID:** 1571041778

Score Calculation With Local and Global Features for Visual Place Recognition

Iori Ikeda, Miho Adachi and Ryusuke Miyamoto (Meiji University, Japan)

Session ID: T-3-1.4 **Time:** 0945–1000 hrs **Paper ID:** 1571033391

Historical Ice Velocity Mapping of Pine Island Glacier, West Antarctica, Using Landsat and KH-9 Hexagon Data

Peng Zhang, Lu An and Rongxing Li (Tongji University, China)

Session ID: T-3-1.5 **Time:** 1000–1015 hrs **Paper ID:** 1571042077

Numerical Analysis of the Thermal Properties of Beeswax Based Phase Change Materials for Thermal Energy Storage Applications in Comparison to Paraffin

*Sahidul Alam, Jintu Das and Ananya Kalita (National Institute of Technology Silchar, India);
Sumit Bhowmik (National Institute of Technology Silchar, India & NIT Silchar, India)*

Session ID: T-3-1.6 **Time:** 1015–1030 hrs **Paper ID:** 1571042035

Walkable Southeast Asia: A Comparative Study Between Phnom Penh and Ho Chi Minh City

*Francisco Benita and Padmapriya Srinivasan (Singapore University of Technology and Design, Singapore);
Rayner Ng Zheng Hao, Tan Yan Zuo and Guo Yatian (Temasek Junior College, Singapore)*

Session	T-4-1 Emerging Topics 4	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4211	
Chair(s)	Zann Koh	

Session ID: T-4-1.1 **Time:** 0900–0915 hrs **Paper ID:** 1571034197

Uf-PromptGAN: A Nighttime Flare Removal Network Using Learnable Prompts

Aniruth Sundararajan, Levin M S and Jiji C V (Shiv Nadar University Chennai, India)

Session ID: T-4-1.2 **Time:** 0915–0930 hrs **Paper ID:** 1571034977

EEG-Based 3D Input Convolutional Neural Network for Stress Detection During Arithmetic Task

Rahul Kumar Vijay, Aditi Sharma, Khushi Sharma, Mahak Garg and Monika Hooda (Banasthali Vidyapith, India)

Session ID: T-4-1.3 **Time:** 0930–0945 hrs **Paper ID:** 1571050493

Large Language Models for Video Surveillance Applications

Ulindu Pabasara De Silva and Kurukulasuriya Nicholas Adrian Leon Fernando (University of Moratuwa, Sri Lanka); Billy Pik Lik Lau, Zann Koh, Sam Conrad Joyce and Belinda Yuen (Singapore University of Technology and Design, Singapore); Chau Yuen (Nanyang Technological University, Singapore)

Session ID: T-4-1.4 **Time:** 0945–1000 hrs **Paper ID:** 1571034018

Hamstring Muscle Activity Characterization Using IMU and sEMG Sensors During Leg Squats

Jehiel D. Santos, Samuel Ryan M. Orianza, Bianca M. Dimaano, Joshua James Y. Oliva, Josias Miguel F. Santiago, Mark Kevin G. Torre, Jazzmine Gale S. Flores, Justine B. Duran, Elaine Nicole S. Bulseco, Reil Vinard S. Espino, Ma. Belinda C. Fidel, Angelito Silverio, Seigfred V. Prado, Ma. Madecheen S Pangaliman and Consuelo B. Gonzalez-Suarez (University of Santo Tomas, Philippines)

Session ID: T-4-1.5 **Time:** 1000–1015 hrs **Paper ID:** 1571028734

Cell-Stitching for Analog Neuromorphic Computing

Pengfei Sun (Ghent University, Belgium); Wenyu Jiang (Institute for Infocomm Research, Singapore); Dick Botteldooren (Ghent University, Belgium)

Session ID: T-4-1.6 **Time:** 1015–1030 hrs **Paper ID:** 1571033968

Identification of Tokyo Disney Resort Heavy Users on Twitter

Manami Suzuki and Ayumi Ogawa (University of Meiji, Japan); Yoshitaka Sakurai (Meiji University, Japan)

Session	T-5-1 Power and Energy 1	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4311	
Chair(s)	Billy Pik Lik Lau	

■ Session ID: T-5-1.1 Time: 0900–0915 hrs Paper ID: 1571050233

Design Optimization of PMASynRM Using Kriging Surrogate Modeling and NSGA-II Integrated With Taguchi Method

*Naga Sampath Kumar (IIT MADRAS, India);
Srirama Srinivas (Indian Institute of Technology Madras, India)*

■ Session ID: T-5-1.2 Time: 0915–0930 hrs Paper ID: 1571034400

Multiplexed Model Predictive Control of Energy Storage Systems in Distribution Networks

Bei Shi Li, Anshuman Singh, Hung Dinh Nguyen and Keck Voon Ling (Nanyang Technological University, Singapore)

■ Session ID: T-5-1.3 Time: 0930–0945 hrs Paper ID: 1571040172

Research on Ridge-Enhanced Flatted Grating Folded Waveguide SWS for G-Band TWT

*Jingrui Duan, Zhigang Lu and Peng Gao (University of Electronic Science and Technology of China, China);
Jingyu Guo, Yang Dong and Shaomeng Wang (UESTC, China);
Huarong Gong (University of Electronic Science and Technology of China, China);
Zhanliang Wang and Yubin Gong (UESTC, China);
Caidong Xiong (University of Electronics Science and Technology of China, China)*

■ Session ID: T-5-1.4 Time: 0945–1000 hrs Paper ID: 1571037552

Blockchain-Enabled Game Theory Approach for Distributed Generation

Shlok Kamat, Sandeep Kumar Soni and Himanshu Sekhar Sahu (Shiv Nadar University, India)

■ Session ID: T-5-1.5 Time: 1000–1015 hrs Paper ID: 1571051264

Adaptive Stator Resistance Estimation for Sensorless Direct Torque Control of Synchronous Reluctance Motors With MTPA

Asif Khan Kayamkhani and Srirama Srinivas (Indian Institute of Technology Madras, India)

■ Session ID: T-5-1.6 Time: 1015–1030 hrs Paper ID: 1571050604

Control of Transient Touch Voltages During Switching

Peter Stepien (ResTech Pty Ltd, Australia)

Session	T-6-1 Special Session on AI in Clinical Technologies: Present and Future 1 [Parallel]
Date/Day	Tuesday, 3 December 2024
Room	Orchid Jr 4311
Chair(s)	Emily Hao

Session ID: T-6-1.1 **Time:** 0900–0915 hrs **Paper ID:** 1571042067

Identifying Suitable Anatomical Planes in 3D MRI for AD Classification by Employing ViT Pipeline

Chandita Barman and Shovan Barma (Indian Institute of Information Technology Guwahati, India)

Session ID: T-6-1.2 **Time:** 0915–0930 hrs **Paper ID:** 1571041807

Improved Medical Image Captioning Using Vision Transformers and Graph Networks

B Sanjay, Themozhi J and P Vijayalakshmi (SSN College of Engineering, India)

Session ID: T-6-1.3 **Time:** 0930–0945 hrs **Paper ID:** 1571050059

Effects of Movement Speed and Analysis Window Characteristics on Finger Movement Classifications: An EEG Study

Tatsuya Otake (Yamagata University Graduate School, Japan);

Tadanori Fukami (Yamagata University Graduate School)

Session ID: T-6-1.4 **Time:** 0945–1000 hrs **Paper ID:** 1571050446

Transfer Learning for Dysphagia Detection

An An Chia and Stacy Lum (SengKang General Hospital, Singapore);

Michelle Boo (Singapore University of Technology and Design, Singapore);

Rex Xiao Tan (Aevice Health Pte Ltd, Singapore);

Balamurali Nair and Jer-Ming Chen (Singapore University of Technology and Design, Singapore)

Session ID: T-6-1.5 **Time:** 1000–1015 hrs **Paper ID:** 1571048574

Pain Screening in Orthopedics Using Machine Learning

Satoshi Suzuki, Kazuyoshi Nakanishi, Noriaki Yoshikai and Shun-ichi Kurino (Nihon University, Japan)

Session ID: T-6-1.6 **Time:** 1015–1030 hrs **Paper ID:** 1571032414

A Source-Drain Engineering Di-Electrically Modulated Double Gate TFET Based Label-Free Biosensor

Ayan Bhattacharya (Jadavpur University, India);

Bijoy Goswami (Assam Engineering College, India);

Nalin B Dev Choudhury (National Institute of Technology Silchar, India)

1030 – 1100 hrs	Tea Break (Orchid Main Ballroom, Level 4)
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Session	T-1-2 Communications 3	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Melati Jr 4011	
Chair(s)	Shilpa Manandhar	

Session ID: T-1-2.1 **Time:** 1100–1115 hrs **Paper ID:** 1571034263

Identification of DDoS Attacks Through SHAP-Based Feature Analysis and Transformer Models: A Multivariate Time Series Data Approach

Drixter Velayo Hernandez, Meng-Ting Chen and Yu-Kuen Lai (Chung Yuan Christian University, Taiwan)

Session ID: T-1-2.2 **Time:** 1115–1130 hrs **Paper ID:** 1571050241

DNN-Based Speech Re-Reverb for VR Rooms

*Ian McLoughlin (Singapore Institute of Technology, Singapore);
 Jeannie SA Lee (Georgia Institute of Technology, USA);
 Indriyati Atmosukarto (Singapore Institute of Technology, Singapore);
 Zhongqiang Ding (Unknown, Singapore)*

Session ID: T-1-2.3 **Time:** 1130–1145 hrs **Paper ID:** 1571049667

Detection of Neurological Disorders Using Advanced AI Techniques

*K R Anudeep Laxmikanth (National Institute of Technology, India);
 Kishore T (NIT Warangal, India)*

Session ID: T-1-2.4 **Time:** 1145–1200 hrs **Paper ID:** 1571056218

Quantum Key Distribution Optimization: Reducing Communication Overhead in Post-Processing Steps

*Ashutosh Bhatia (Birla Institute of Technology and Science, Pilani, India);
 Sainath Bitragunta (Birla Institute of Technology and Science Pilani, Rajasthan, India);
 Kamlesh Tiwari (BITS Pilani, India)*

Session ID: T-1-2.5 **Time:** 1200 -1215 hrs **Paper ID:** 1571034367

Design of an RFID-Based Smart Queueing System Integrated With Computer Vision Utilizing Dynamic Source Routing Algorithm

Cazandra Joyce C Paraiso, Mark Joshua A Mejia, Meinard Deniel P Pagatpatan, Christiana Kayla A Remo and Joesmart Apan (Technological Institute of the Philippines, Philippines)

Session ID: T-1-2.6 **Time:** 1215–1230 hrs **Paper ID:** 1571033755

Enhancing Address Information Legitimacy in MANET With Blockchain

*Shota Imoto (Hitotsubashi university, Japan);
 Yoshito Watanabe (Solid Surface Inc., Japan);
 Ryohei Banno (Hitotsubashi University, Japan)*

Session	T-2-2 Electronics 5	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Melati Jr 4111	
Chair(s)	Anderson Ngap Chai Kho	

Session ID: T-2-2.1 **Time:** 1100–1115 hrs **Paper ID:** 1571034631

Emission Gating of Sheet Electron Beam for High-Power Gridless Inductive Output Tube

Muhammad Khawar Nadeem (University of Electronic Science and Technology, China);
 Shaomeng Wang (UESTC, China);
 Atif Jameel, Jibrán Latif and Bilawal Ali (University of Electronic Science and Technology, China);
 Longfei Dang (Government, China);
 Yubin Gong (UESTC, China)

Session ID: T-2-2.2 **Time:** 1115–1130 hrs **Paper ID:** 1571058043

Quasi-Reflectionless BPF and BSF for ISM Band With Enhanced Out-Of-Band Characteristics

Asish Nayak (Indian Institute of Technology, Tirupati, India);
 Abhishek Jha (IIT Tirupati, India)

Session ID: T-2-2.3 **Time:** 1130–1145 hrs **Paper ID:** 1571034688

Mitigating Drift in Extraction of Joint Angle Measurements From Inertial Measurement Unit (IMU) Data

Jascha Ramar A. Castillo, Neftali Karl I. De Guzman, Jandre M. Jacinto, Jomel Miles M. Romero, Gabrielle Angelo P. Sales, Jazzmine Gale S. Flores, Justine B. Duran, Elaine Nicole S. Bulseco, Reil Vinard S. Espino, Ma. Belinda C. Fidel, Angelito Silverio, Seigfred V. Prado, Jehiel D. Santos, Consuelo B. Gonzalez-Suarez and Ma. Madecheen S Pangaliman (University of Santo Tomas, Philippines)

Session ID: T-2-2.4 **Time:** 1145–1200 hrs **Paper ID:** 1571035768

Generative Pixelated Microstrip Millimeter-Wave Circuit Components Design

Zaifeng Yang (Institute of High Performance Computing, Astar, Singapore);
 Chuan Ge (Institute of Microelectronics, Singapore);
 Kevin Chai Tshun Chuan (Scientist, Singapore);
 Viet Phuong Bui (Institute of High Performance Computing, Singapore);
 Ching Eng Png (A*STAR Institute of High Performance Computing, Singapore)

Session ID: T-2-2.5 **Time:** 1200 -1215 hrs **Paper ID:** 1571050648

Parametric Study of the Microstrip U-Slot Patch Antenna for Concrete Strength Monitoring

Anderson Ngap Chai Kho (Swinburne University of Technology Sarawak Campus, Malaysia);
 Yi Lung Then and Dyg Norkhairunnisa Abang Zaidel (Universiti Malaysia Sarawak, Malaysia);
 Chee Khoon Ng (Unimas, Malaysia);
 You Kok Yeow (Universiti Teknologi Malaysia, Malaysia)

Session ID: T-2-2.6 **Time:** 1215–1230 hrs **Paper ID:** 1571041446

W-Band Backward Wave Oscillator Utilizing a Diverging Radial Sheet Electron Beam

Atif Jameel (University of Electronic Science and Technology, China);
 Zhanliang Wang (UESTC, China);
 Jibrán Latif and Muhammad Khawar Nadeem (University of Electronic Science and Technology, China);
 Khalil Ud Din (University of Electronic Science and Technology of China, China);
 Bilawal Ali (University of Electronic Science and Technology, China);
 Shaomeng Wang and Yubin Gong (UESTC, China)

Session	T-3-2 Information 5	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4211	
Chair(s)	Michael Ong	

■ Session ID: T-3-2.1 Time: 1100–1115 hrs Paper ID: 1571039815

Identifying Nephrotoxicity of Small Molecules Using Machine Learning

Thanh-Hoang Nguyen-Vo (Wellington Institute of Technology, New Zealand);

Linh Bui (Ho Chi Minh City Open University, Vietnam);

Trang Thi Thu Do (Wellington Institute of Technology, New Zealand & Ho Chi Minh City Open University, Vietnam);

Susanto Rahardja (Northwestern Polytechnical University, Singapore & Singapore Institute of Technology, Singapore);

Binh P. Nguyen (Victoria University of Wellington, New Zealand)

■ Session ID: T-3-2.2 Time: 1115–1130 hrs Paper ID: 1571039244

Comparative Analysis of Oversampling Techniques and Deep Learning for Imbalanced Tabular Data

Alex X. Wang, Colin R. Simpson and Binh P. Nguyen (Victoria University of Wellington, New Zealand)

■ Session ID: T-3-2.3 Time: 1130–1145 hrs Paper ID: 1571041756

Detection of Esophageal Wall via Deep Learning-Based Object Detection With Ultrasound System

Matsuyama Rikuto, Yutaka Suzuki and Shuya Shida (Toyo University, Japan);

Motoki Arakawa (University of Yamanashi Hospital, Japan)

■ Session ID: T-3-2.4 Time: 1145–1200 hrs Paper ID: 1571034043

Guided Machine Learning for Mobile User Interface Design Through HCI Principles

Chaminda Jagath Wickramaratne and Nuwan Kodagoda (Sri Lanka Institute of Information Technology, Sri Lanka);

Devanshi Jilka Marie Ganegoda (SLIIT, Sri Lanka)

■ Session ID: T-3-2.5 Time: 1200–1215 hrs Paper ID: 1571050454

A Novel Approach to Generative AI Translation

Ravi Kishore Kodali, Yatendra Prasad Upreti and Lakshmi Boppana (National Institute of Technology, Warangal, India)

■ Session ID: T-3-2.6 Time: 1215–1230 hrs Paper ID: 1571038346

Enhancing the Forecasting Performance With the Hybrid Machine Learning Techniques for Online Shopping Channels: A Case Study of Electronic Products in Thailand

Anirut Kantasa-ard (Burapha University, Thailand);

Maroua Nouiri (University of Nantes, France)

Session	T-4-2 Emerging Topics 5	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4212	
Chair(s)	Aishwarya Bandla	

████████ **Session ID:** T-4-2.1 **Time:** 1100–1115 hrs **Paper ID:** 1571041701

Self-Learning Robot Manipulator Controller Using Reinforcement Learning

Hudyjaya Siswoyo Jo and Yu Xhin Ong (Swinburne University of Technology Sarawak Campus, Malaysia)

████████ **Session ID:** T-4-2.2 **Time:** 1115–1130 hrs **Paper ID:** 1571034678

ML-Based Classification of Hamstring Strain Injury From Nonlinear Features of Surface Electromyography Signals

Gian Angelo A. Calumpang, Mary Chie S. Lazatin, Miguel D. Mendoza, Kristan T. Ruiz, Lanz Miguel A. Vivero, Justine B. Duran, Jazzmine Gale S. Flores, Elaine Nicole S. Bulseco, Ma. Belinda C. Fidel, Seigfred V. Prado, Reil Vinard S. Espino, Angelito Silverio, Jehiel D. Santos, Consuelo B. Gonzalez-Suarez and Ma. Madecheen S Pangaliman (University of Santo Tomas, Philippines)

████████ **Session ID:** T-4-2.3 **Time:** 1130–1145 hrs **Paper ID:** 1571034592

Mitigation of Noise on Surface Electromyography (sEMG) Signals Through Signal Filtering Algorithms

Denisse V. Cunanan, Regina Rose B. Magpantay, James Andrew M. Roxas, John Earl Patrick H. Sandoval, Akira Ryodji P. Tagura, Jazzmine Gale S. Flores, Justine B. Duran, Elaine Nicole S. Bulseco, Reil Vinard S. Espino, Ma. Belinda C. Fidel, Angelito Silverio, Seigfred V. Prado, Jehiel D. Santos, Consuelo B. Gonzalez-Suarez and Ma. Madecheen S Pangaliman (University of Santo Tomas, Philippines)

████████ **Session ID:** T-4-2.4 **Time:** 1145–1200 hrs **Paper ID:** 1571041260

Design and Development of IoT-Enabled Semi-Autonomous Medicine Dispensing Mobile Robot With Obstacle-Detection Capabilities

Maria Victoria T. Ching, Margaret J. Dionisio, Stephen Gabriel F. Garbo, Jann Carlo N. Red, Vince M. Salloman, Dino Ligutan and Alexander Co Abad (De La Salle University, Philippines)

████████ **Session ID:** T-4-2.5 **Time:** 1200 -1215 hrs **Paper ID:** 1571034560

Design of Control System for Adult Ventilator

*Glen D Espeña (Department of Science and Technology, Philippines);
 Godfreyson J Nardo (Metals Industry Research and Development Center, Philippines);
 Franz Joseph D Libao (Department of Science and Technology - Metals Industry Research and Development, Philippines)*

████████ **Session ID:** T-4-2.6 **Time:** 1215 -1230 hrs **Paper ID:** 1571034406

Safe and Trustworthy AI Framework (STAIF): Addressing Uncertainty in AI-Based Models for Real-World Deployment

*Soja Salim (APJ Abdul Kalam Technological University, India & Sree Chitra Thirunal College of Engineering, India);
 Jayasudha J. S (Central University of Kerala Kasargod, India);
 Soniya B. (APJ Abdul Kalam Technological University, India)*

Session	T-5-2 Power and Energy 2	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4311	
Chair(s)	Christopher Lee	

Session ID: T-5-2.1 **Time:** 1100–1115 hrs **Paper ID:** 1571029491

Optimization of Deactivation Time in Synthetic Inertia Control of Wind Turbine Using System Frequency Model Including Rotor Dynamics

Subin Im and Minhan Yoon (Kwangwoon University, Korea (South))

Session ID: T-5-2.2 **Time:** 1115–1130 hrs **Paper ID:** 1571049610

Criteria Setting of Earthfault Relay Coordination for Bhutan Substation Considering the Interconnected Indian Grid Influence

Cheten Tshering (Bhutan Power Corporation Ltd., Bhutan);

Wijarn Wangdee and Sompol Chumnanvanichkul (Chulalongkorn University, Thailand)

Session ID: T-5-2.3 **Time:** 1130–1145 hrs **Paper ID:** 1571041986

Detection of Series Arc Faults in Photovoltaic System Based on Wavelet Filter Evaluation

Bagus Septianto (Institut Teknologi Sepuluh Nopember, Indonesia);

Dimas Anton Asfani (INSTITUT TEKNOLOGI SEPULUH NOPEMBER, Indonesia);

I Made Yulistya Negara (ITS, Indonesia);

Arief Ksatria, Daniar Fahmi and Adams Tryas Alfian (Institut Teknologi Sepuluh Nopember, Indonesia);

Ibrahim Sefik (Capgemini Engineering, Germany)

Session ID: T-5-2.4 **Time:** 1145–1200 hrs **Paper ID:** 1571049614

Fault Location, Isolation and Service Restoration Through Advanced Distribution Management System

Cheten Tshering (Bhutan Power Corporation Ltd., Bhutan);

Thinley Gyeltshen (Bhutan Power Corporation, Bhutan)

Session ID: T-5-2.5 **Time:** 1200 -1215 hrs **Paper ID:** 1571050486

An Intelligent Fault Detection Scheme for AC Microgrid: Based on Multilayer Perceptron

Nityananda Giri (Siksha O Anushandhan Deemed to be University, India);

Ranjan K. Mallick (SOA University, India);

Pravati Nayak (S 'O'A University, India);

Sairam Mishra (Siksha O Anushandhan Deemed to Be University, India);

Gayadhar Panda (NIT Meghalaya, India);

Mrutyunjay Biswal (Odisha Power Transmission Corporation Limited, India)

Session ID: T-5-2.6 **Time:** 1215–1230 hrs **Paper ID:** 1571050853

Assessment Mapping Strategies for Competency-Based Computing Education

Nicholas H L Wong (Singapore Institute of Technology, Singapore)

Session	T-6-2 Special Session on AI in Clinical Technologies: Present and Future 2 [Parallel]
Date/Day	Tuesday, 3 December 2024
Room	Orchid Jr 4312
Chair(s)	Aishwarya Bandla

████████ **Session ID:** T-6-2.1 **Time:** 1100–1115 hrs **Paper ID:** 1571041262

Neural Hierarchical Interpolation for Glucose Time Series Forecasting in Artificial Pancreas With Integration of Physical Activity

Deepjyoti Kalita, Hrishita Sharma and Mirza Khalid Baig (National Institute of Technology, Rourkela, India)

████████ **Session ID:** T-6-2.2 **Time:** 1115–1130 hrs **Paper ID:** 1571041990

2D Ultrasound to 3D CT Image Registration for Liver Ablation Surgery

Mokeeshan Vathanakumar, Poogitha Jegakumaran, Nifla Nasvi, Lakshika Sivakumar and Nuwan D Nanayakkara (University of Moratuwa, Sri Lanka);

Chinthaka Appuhamy and Rohan Siriwardena (University of Kelaniya, Sri Lanka);

Rukshani Liyanaarachchi (University of Moratuwa, Sri Lanka)

████████ **Session ID:** T-6-2.3 **Time:** 1130–1145 hrs **Paper ID:** 1571050261

Advancing Early Detection of Congestive Heart Failure Using BiLSTM Networks: A Robust Clinical Framework

Aditya Oza (International Institute of Information Technology Naya Raipur, India & No, India);

Sanskriti Patel (International Institute of Information Technology, Naya Raipur, India);

Bhavesh S Gyanchandani (IIITNR, India);

Abhinav Roy (IIIT NR, India);

Santosh Kumar (International Institute of Information Technology, Naya Raipur, India)

████████ **Session ID:** T-6-2.4 **Time:** 1145–1200 hrs **Paper ID:** 1571042070

DINOv2 Distilled ViT Model With Focal Loss for Justified Referral Glaucoma Screening

Jiji C V (Shiv Nadar University Chennai, India);

Hrishikesh P S (Founding Minds Software, Kochi, India)

████████ **Session ID:** T-6-2.5 **Time:** 1200 -1215 hrs **Paper ID:** 1571050505

Skin Disease Detection With Deep Learning

Md. Arifur Rahman Akib, Jannatul Ferdous and Fariah Mahzabeen (North South University, Bangladesh)

████████ **Session ID:** T-6-2.6 **Time:** 1215–1230 hrs **Paper ID:** 1571033241

A Novel Non-Invasive Cuff-Less Method for Continuous Blood Pressure Estimation Using Machine Learning and Photoplethysmography

Ren Xiang Yak, Zi Heng Ng, Zhi Qing Looi and Wei Wang (Singapore Polytechnic, Singapore)

1230 –1400 hrs Lunch, Exhibition & Interactive Forum II (Orchid Main Ballroom, Level 4)

T-1-3 & T-1-4 hrs NO SESSIONS

Session	T-2-3 Electronics 6	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Melati Jr 4111	
Chair(s)	Arif Hussain	

Session ID: T-2-3.1 **Time:** 1400–1415 hrs **Paper ID:** 1571033387

Stixu: An Open-Source Idea for Planning Integrated Circuit Layouts Efficiently

Nicholas Overacker (Kitami Institute of Technology, Japan);
James E Stine (Oklahoma State University, USA);
Michal Ptaszynski and Shingo Yoshizawa (Kitami Institute of Technology, Japan);
Miho Kobayashi (Independent UI Designer, Japan)

Session ID: T-2-3.2 **Time:** 1415–1430 hrs **Paper ID:** 1571047435

CMOS Design of Reconfigurable Data-Panning Algorithm Based Sorter for 8-Input, 8-Bit Digital Data Using the 0.35um Library

Anthony S. Tolentino (Don Honorio Ventura State University, Philippines);
Roderick Yap (De La Salle University, Philippines)

Session ID: T-2-3.3 **Time:** 1430–1445 hrs **Paper ID:** 1571048403

Printed Circuit Board Defect Detection Using YOLOv8s and TensorRT

Guillaume Keifer U. Arenas, Mystro Yushi P. Fujii, Anastine Beatrice B. Josue, Vincent Andrew Mikeael C. Mataragnon, Jason Española, Kate G Francisco, Jose Martin Z Maningo, Argel Bandala and Ryan Rhay P. Vicerra (De La Salle University, Philippines);
Elmer P. Dadios (Philippines, Philippines)

Session ID: T-2-3.4 **Time:** 1445–1500 hrs **Paper ID:** 1571041871

Dual Mode Output Capacitorless Low Dropout With Low Quiescent Current for Hearing Aid Applications

Nieva Mapula (MSU-Iligan Institute of Technology, Philippines);
Gene Fe P Palencia and Harreez Villaruz (Mindanao State University - Iligan Institute of Technology, Philippines);
Dale Matthew Legaspi, Neil Mora and Emrys Leowhel Oling (MSU-Iligan Institute of Technology, Philippines);
Rochelle M. Sabarillo (Mindanao State University - Iligan Institute of Technology, Philippines);
Kevin Maglinte and Thesa L. Vergara (MSU-Iligan Institute of Technology, Philippines)

Session ID: T-2-3.5 **Time:** 1500–1515 hrs **Paper ID:** 1571051845

A 9.94dBm IIP3 Inductorless Differential Low Noise Amplifier for Geofencing Applications

Jefferson A. Hora (MSU-Iligan Institute of Technology, Philippines);
Gene Fe P Palencia (Mindanao State University - Iligan Institute of Technology, Philippines);
Xi Zhu (University of Technology Sydney, Australia);
Raf Rohan Villacarlos and Chris Miguel Retorta (Mindanao State University-Iligan Institute of Technology, Philippines)

Session ID: T-2-3.6 **Time:** 1515–1530 hrs **Paper ID:** 1571057918

Optimizing Multithreaded Access to Global Variables in SPM Through Compiler-Enhanced Dependency Analysis

Gihyeon Jeon (Kyungpook National University, Korea (South));
Daejin Park (Kyungpook National University (KNU), Korea (South))

Session	T-3-3 Information 6	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4211	
Chair(s)	Shilpa Manandhar	

Session ID: T-3-3.1 **Time:** 1400–1415 hrs **Paper ID:** 1571034415

The What, So What, and What Now of the AI Landscape in Emerging Economies

Val Anthony Borines, Abeba Nigussie Turi and Paul Hedru (University Canada West, Canada)

Session ID: T-3-3.2 **Time:** 1415–1430 hrs **Paper ID:** 1571034375

A Hue Preserving Image Enhancement Based on Multiple Parametric Sigmoid Functions in Each RGB Component

Manaka Yamaguchi and Ayaka Fujita (Yamaguchi University, Japan);

Mashiho Mukaida (Kagoshima University, Japan);

Noriaki Suetake (Yamaguchi University, Japan)

Session ID: T-3-3.3 **Time:** 1430–1445 hrs **Paper ID:** 1571034317

Lightness and Saturation Modification in RGB Color Space for Dichromats

Ayaka Fujita (Yamaguchi University, Japan);

Mashiho Mukaida (Kagoshima University, Japan);

Tadahiro Azetsu (Yamaguchi Prefectural University, Japan);

Noriaki Suetake (Yamaguchi University, Japan)

Session ID: T-3-3.4 **Time:** 1445–1500 hrs **Paper ID:** 1571032652

Empirical Wavelet Transform for Image Fusion: Elevating Visual and Structural Quality

Ankan Banerjee and Dipti Patra (National Institute of Technology Rourkela, India);

Pradipta Roy (Defence Research and Development Organization, India)

Session ID: T-3-3.5 **Time:** 1500–1515 hrs **Paper ID:** 1571033952

Deep Learning for Automatic Classification of Carotenoid Associated Color Pigmentation

Kasidit Ruaydee, Worapan Kusakunniran and Warangkana Srichamnong (Mahidol University, Thailand)

Session ID: T-3-3.6 **Time:** 1515–1530 hrs **Paper ID:** 1571041873

Cyber Threat Analysis Through Densified Causal Knowledge Graph

Debdeep Paul, Jeffery Chen, Yongning Yin, Chandra Wijaya, Sahim Yamaura and Siddharth Kumar (Panasonic Holdings Corporation, Singapore);

Koji Miura (Panasonic Holdings Corporation, Japan);

Yosuke Tajika (Panasonic Corporation, Japan);

Satoru Higuchi (Panasonic Holdings Corporation, Japan)

Session	T-4-3 Emerging Topics 6	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4212	
Chair(s)	Sahoo Sanjib Kumar	

Session ID: T-4-3.1 **Time:** 1400–1415 hrs **Paper ID:** 1571041457

Medical Image Encryption With Fractional Discrete Cosine Transform, Arnold Transform and AES

*Gaurav Sundaram and Snehan Shourya (IIT Patna, India);
Ayush Kumar (TCS Smart Machine, India);
Rajib Kumar Jha (IIT Patna, India);
Rashmi Ranjan Maharana (Parala Maharaja Engineering College, Berhampur, India);
Sumit Kumar (Indian Institute of Technology PATNA, India)*

Session ID: T-4-3.2 **Time:** 1415–1430 hrs **Paper ID:** 1571034142

Enhanced Feature Detection in Non-Proliferative Diabetic Retinopathy via RGB Channel Separation

*Senal Inovin Fernando, Mithara Sathmi Induwara and Nimshan Isuranga (University of Sri Jayawardenepura, Sri Lanka);
Uditha L. Wijewardhana (University of Sri Jayawardenepura & Faculty of Engineering, Sri Lanka);
M. Maduwanthi Dissanayake (University of Colombo, Sri Lanka);
Umaya Bhashini Balagalla (University of Sri Jayawardenepura, Sri Lanka)*

Session ID: T-4-3.3 **Time:** 1430–1445 hrs **Paper ID:** 1571044350

Lot Quality Prediction in Semiconductor Manufacturing Final Test Using Multilayer Perceptron

Ranzel V. Dimaculangan and Robert G. de Luna (Polytechnic University of the Philippines, Philippines)

Session ID: T-4-3.4 **Time:** 1445–1500 hrs **Paper ID:** 1571038188

Indoor Navigation Glasses for the Visually Impaired With Deep Learning and Audio Guidance Using Google Coral Edge TPU

Pocholo James Loresco (De La Salle University, Manila & Far Eastern University Institute of Technology, Philippines)

Session ID: T-4-3.5 **Time:** 1500–1515 hrs **Paper ID:** 1571041934

Understanding the Effects of Naturalistic Music Listening in Brain Circuit Dynamics Using Neural Manifold Learning in Patients With Alzheimer’s Disease

Samuel John A. Ocenar, Liana Mae A. Fabay, Lance Aron O. Cadiz, Jeirel V. Santos, Arielle Lois R. Umali, Wally Enrico M Ingco and Seigfred V. Prado (University of Santo Tomas, Philippines)

Session ID: T-4-3.6 **Time:** 1515–1530 hrs **Paper ID:** 1571027045

Deadtime Compensation-Based Approximate Decoupling Control Approach for Multivariable Processes

Suresh Aldhandi and Ketan Detroja (Indian Institute of Technology Hyderabad, India)

Session	T-5-3 Power and Energy 3	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4311	
Chair(s)	Arvin Fernando	

Session ID: T-5-3.1 **Time:** 1400–1415 hrs **Paper ID:** 1571048424

Optimal Dispatch for Large-Scale Renewable Energy Bases Without Conventional Power Support

Kunpeng Zhang, Tianhao Liu and Yutian Liu (Shandong University, China)

Session ID: T-5-3.2 **Time:** 1415–1430 hrs **Paper ID:** 1571039833

Similarity-Based Label Propagation for Electric Vehicle Network Representation Learning

*Runlin Hou (City University of Hong Kong, China);
Chee Wei Tan (Nanyang Technological University, Singapore)*

Session ID: T-5-3.3 **Time:** 1430–1445 hrs **Paper ID:** 1571042260

Simulation and Analysis of a Rain-Powered Pelton Turbine

Arvin Fernando, Marielet A. Guillermo and Archie Maglaya (De La Salle University, Philippines)

Session ID: T-5-3.4 **Time:** 1445–1500 hrs **Paper ID:** 1571041647

Transfer Learning-Based State of Health Estimation for Lithium-Ion Battery at Varying Temperatures

*Qingyue Huang and Jiang Liu (Chongqing University, China);
Wei Dai (China University of Mining and Technology, China);
Chao Li (Zhejiang University, China);
Wenbin Qian and Yujuan Wang (Chongqing University, China);
Kai Zhao (National University of Singapore, China);
Yan Qin (Chongqing University, China)*

Session ID: T-5-3.5 **Time:** 1500–1515 hrs **Paper ID:** 1571042226

Effect of Gap Variation on DC Series Arcing Characteristics in PV Farms Using Fast Fourier Transform Method

*Namira Jannah (Institut Teknologi Sepuluh Nopember, Indonesia);
Dimas Anton Asfani (Institut Teknologi Sepuluh Nopember, Indonesia);
I Made Yulistya Negara (ITS, Indonesia);
I Gusti Ngurah Satriyadi, Arief Ksatria and Gustav Galvani Choliq (Institut Teknologi Sepuluh Nopember, Indonesia)*

Session ID: T-5-3.6 **Time:** 1515–1530 hrs **Paper ID:** 1571050386

LSTM Based Forecasting of Power Consumption

Ravi Kishore Kodali, Deepika Sai Achanta and Lakshmi Boppana (National Institute of Technology, Warangal, India)

Session	T-6-3 Communication Networks 1	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4312	
Chair(s)	A Alphones	

Session ID: T-6-3.1 **Time:** 1400–1415 hrs **Paper ID:** 1571050502

RuralCasting–A Non-Internet Based Distribution System for Digital Resources in the Philippines

*John Chris Kwong (Ateneo de Manila University & DOST-ASTI, Philippines);
 Julian III Eballa (Department of Science and Technology - Advanced Science and Technology Institute, Philippines);
 Wilbur Isaac Lapada (University of the Philippines, Philippines);
 Miguel D Asido, Jermaine Audrey Reyes and Ulysis Kenn Castellano (Department of Science and Technology - Advanced Science and Technology Institute, Philippines);
 Jan Daryl M San Juan (DOST - ASTI & DOST -ASTI, Philippines);
 John Vincent Portugal and John Emil Sebastian (Department of Science and Technology - Advanced Science and Technology Institute, Philippines);
 Paul Symone Raralio (Advanced Science and Technology Institute, Philippines);
 Philip A. Martinez (Advanced Science and Technology Institute, Philippines & Electrical and Electronics Engineering Institute, University of the Philippines, Philippines);
 Peter Antonio B Banzon (Department of Science and Technology - Advanced Science and Technology Institute, Philippines)*

Session ID: T-6-3.2 **Time:** 1415–1430 hrs **Paper ID:** 1571034385

Efficient Routing for QKD Network Using Novel Quantum Optimization Approach

*Aaryav Mishra (BITS Pilani, India);
 Sainath Bitragunta (Birla Institute of Technology and Science Pilani, Rajasthan, India);
 Ashutosh Bhatia (Birla Institute of Technology and Science, Pilani, India)*

Session ID: T-6-3.3 **Time:** 1430–1445 hrs **Paper ID:** 1571040496

Building Touch-Less Trust in IoT Devices

Steve Kerrison (James Cook University, Singapore)

Session ID: T-6-3.4 **Time:** 1445–1500 hrs **Paper ID:** 1571056215

Privacy-Preserving Password-Based Authentication Using Zero-Knowledge Proofs

*Aayush Jain and Adwait Gondhalekar (Birla Institute of Technology and Science, Pilani, India);
 Ankit Agrawal (BITS Pilani, India);
 Ashutosh Bhatia (Birla Institute of Technology and Science, Pilani, India);
 Kamlesh Tiwari (BITS Pilani, India)*

Session ID: T-6-3.5 **Time:** 1500–1515 hrs **Paper ID:** 1571041741

Enhancing Train Transportation in Sri Lanka: A Smart IOT Based Multi-Subsystem Approach Using MQTT

Dhanushka S Balasingham, Sadeesha Samarathunga, Presadini Bandara, Gayantha Godakanda Arachchige, Narmada Gamage and Jaliya Lakshan Wijayaraja (Sri Lanka Institute of Information Technology, Sri Lanka)

Session ID: T-6-3.6 **Time:** 1515–1530 hrs **Paper ID:** 1571057289

Time Efficiency of BATS Coding on Wireless Relay Network With Overhearing

Hoover H. F. Yin (The Chinese University of Hong Kong, Hong Kong)

1530 – 1600 hrs	Tea Break (Orchid Main Ballroom, Level 4)
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Day 2: 3 December 2024, Tuesday

Session	T-2-4 AI in Healthcare	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Melati Jr 4111	
Chair(s)	Marielet Guillermo	

Session ID: T-2-4.1 **Time:** 1600–1615 hrs **Paper ID:** 1571040984

HAR-CLET: A Novel Conv-LSTM With Extra Tree Classifier for Human Activity Recognition

Nurul Amin Choudhury and Badal Soni (National Institute of Technology Silchar, India)

Session ID: T-2-4.2 **Time:** 1615–1630 hrs **Paper ID:** 1571043346

Adaptive Spectral Correlation Convolutional Neural Network for EEG-Based Emotion Recognition: A Study on the SEED Dataset

Aditya Oza (International Institute of Information Technology Naya Raipur, India & No, India);
Sanskriti Patel (International Institute of Information Technology, Naya Raipur, India);
Jay Padia (IIITNR, India);
Santosh Kumar (International Institute of Information Technology, Naya Raipur, India)

Session ID: T-2-4.3 **Time:** 1630–1645 hrs **Paper ID:** 1571049668

ConvKAN: A Convolutional KAN for Brain Tumor MRI Classification

Abhinav Roy (IIIT NR, India);
Bhavesh S Gyanchandani (IIITNR, India);
Aditya Oza (International Institute of Information Technology Naya Raipur, India & No, India);
Anurag Singh (IIIT Naya Raipur, India)

Session ID: T-2-4.4 **Time:** 1645–1700 hrs **Paper ID:** 1571042433

A Machine Learning Approach for Automated Classification of Skin Fungal Infections

Pragya Gupta (Somaiya Vidyavihar University, India & KJ Somaiya College of Engineering, Vidyavihar, India);
Jagannath Nirmal and Ninad Mehendale (KJ Somaiya College of Engineering, India)

Session ID: T-2-4.5 **Time:** 1700–1715 hrs **Paper ID:** 1571057914

Knee Joint Health Care Monitoring System Using AI-Classification Approach

Manoj Kumar M (National Institute of Technology Warangal, India);
Kishore T (NIT Warangal, India)

Session ID: T-2-4.6 **Time:** 1715–1730 hrs **Paper ID:** 1571041927

Symbiotic Insights Prediction on a Multi-Cooperative Modular Mobile Robot Using Machine Learning

Arvin Fernando, Marielet A. Guillermo and Argel Bandala (De La Salle University, Philippines)

Session	T-3-4 Information 7	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4211	
Chair(s)	Kevin Hung King Fai	

Session ID: T-3-4.1 **Time:** 1600–1615 hrs **Paper ID:** 1571041950

Development of a Pupillary Plant Model for Investigating the Effects of Range Nonlinearity on Pupil Size Variability Signal

Kevin Hung (Hong Kong Metropolitan University, Hong Kong);
 Bingo Wing-Kuen Ling (Guangzhou, China);
 Daniel Hung-kay Chow (The Education University of Hong Kong, China);
 Sio Hang Pun (University of Macao, Macao);
 Gary Man-Tat Man (Hong Kong Metropolitan University, Hong Kong)

Session ID: T-3-4.2 **Time:** 1615–1630 hrs **Paper ID:** 1571034502

State Estimation of Nonlinear Oscillatory Chaotic System: Application to Aircraft Wing Rock Using Cubature Particle Filtering

Venu Gopal Yamalakonda (IIT Indore, India);
 Ram Bilas Pachori and Appina Balasubramanyam (Indian Institute of Technology Indore, India);
 Abhinoy Kumar Singh (IIT Patna, India)

Session ID: T-3-4.3 **Time:** 1630–1645 hrs **Paper ID:** 1571041938

A Novel Select Method Based on the Sparseness as Acquiring Appropriate Data for the Data Interpolation of Accelerated Nuclear Magnetic Resonance Spectroscopy

Yuho Tanaka (National Institute of Technology, Tsuruoka College, Japan)

Session ID: T-3-4.4 **Time:** 1645–1700 hrs **Paper ID:** 1571041637

A Cebuano Parts-of-Speech(POS) Tagger Using Hidden Markov Model(HMM) Applied to News Text Genre

Jeneffer A Sabonsolin (FEU-Institute of Technology, Philippines);
 Shaneth C. Ambat and Ace Lagman (FEU Institute of Technology, Philippines)

Session ID: T-3-4.5 **Time:** 1700–1715 hrs **Paper ID:** 1571034669

Tunable 1st Order IIR Phase Shifter Design and Implementation

Sorawat Chivapreecha (King Mongkuts Institute of Technology Ladkrabang, Thailand);
 Thitaphan Jongsataporn (King Mongkut's University of Technology North Bangkok, Thailand)

Session ID: T-3-4.6 **Time:** 1700–1715 hrs **Paper ID:** 1571063182

A Multi-Modal AI Inspection System for Laser Labels

Min Sik Byun, Malcolm Yoke Hean Low and Weidong Lin (Singapore Institute of Technology, Singapore)

Session	T-4-4 Emerging Topics 7	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4212	
Chair(s)	Arif Hussain	

Session ID: T-4-4.1 **Time:** 1600–1615 hrs **Paper ID:** 1571032362

Real-Time AI-Driven People Tracking and Counting Using Overhead Cameras

Mohamed Irfan Ishrath Ahamed, Chamith Ranathunga and Dinuka Sandun Udayantha (University of Moratuwa, Sri Lanka);
 Benny Kai Kiat Ng (Singapore University of Technology and Design, Singapore);
 Chau Yuen (Nanyang Technological University, Singapore)

Session ID: T-4-4.2 **Time:** 1615–1630 hrs **Paper ID:** 1571041355

SENYAS: A Filipino Sign Language Recognition System Using MediaPipe and CNN-LSTM

Antoine Ross Oropesa, Gallen Leslei Felicen and Jaybie A de Guzman (University of the Philippines Diliman, Philippines)

Session ID: T-4-4.3 **Time:** 1630–1645 hrs **Paper ID:** 1571050513

Detecting Eggs of Invasive Apple Snails on Rice Fields Using YOLOv8 Algorithm

Sienna Ross Tariman (Mapúa University, Philippines);
 Jocelyn Villaverde (Mapua University, Philippines)

Session ID: T-4-4.4 **Time:** 1645–1700 hrs **Paper ID:** 1571035580

Ethical and Critical AI-Assisted Conversations in Writing Literature Reviews

Chien Ching Lee (SIT, Singapore)

Session ID: T-4-4.5 **Time:** 1700–1715 hrs **Paper ID:** 1571042675

An Open Framework for Smart Retrofitting of Legacy Industrial Machines Towards Industry 4.0

Deep Patel (IIITDM Kancheepuram, India);
 Sreekumar Muthuswamy (IIITD&M Kancheepuram, India)

Session ID: T-4-4.6 **Time:** 1715–1730 hrs **Paper ID:** 1571034679

Non-Contact Measurement of Temperature Using RGB Facial Images

Trisha Arakambakkam Venkatakrishnan, Shivapriya S, B Sanjeeth and Vijay Jeyakumar (Sri Sivasubramaniya Nadar College of Engineering, India);
 M Lakshmi (Sri Ramachandra University, India)

Session	T-5-4 Power and Energy 4	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4311	
Chair(s)	Sahoo Sanjib Kumar	

Session ID: T-5-4.1 **Time:** 1600–1615 hrs **Paper ID:** 1571034538

Prototype Development of a Multilevel Solar Dryer for Agriculture

Gian Carlo C. Fernandez, Jed Matthew A San Luis, Robert Alfie S. Peña and Erees Queen B. Macabebe (Ateneo de Manila University, Philippines)

Session ID: T-5-4.2 **Time:** 1615–1630 hrs **Paper ID:** 1571056873

Machine Learning Based Control of Integrated Drive and Charge Mode Bi-Modular Power Converter for PV Assisted Light Electric Vehicle

*Kishore Yadlapati (JNTU Kakinada, India);
Srungaram Ravi Teja (K L University, India);
Tripura Pidikiti (R V R and J C College of Engineering, India);
V. B. Murali Krishna (National Institute of Technology, Andhra Pradesh, India);
ILB Sowjanya (JNTU Kakinada, India)*

Session ID: T-5-4.3 **Time:** 1630–1645 hrs **Paper ID:** 1571029342

Hybrid Digital Twin-P & O Photovoltaic Controller for Partial Shading Conditions

*Ying-Yi Hong and Francisco I. Alano (Chung Yuan Christian University, Taiwan);
Chia-Yu Han, Chin-Chan Cheng and Yih-Der Lee (National Atomic Research Institute, Taiwan)*

Session ID: T-5-4.4 **Time:** 1645–1700 hrs **Paper ID:** 1571038091

Managing Interconnection of Electricity Generation, Transmission and Distribution: A Dynamic Collaborative Solution

*David Yeung (Hong Kong Shue Yan University, Hong Kong);
Leon A. Petrosyan (St Petersburg State University, Russia);
Yingxuan Zhang (Hong Kong Shue Yan University, Hong Kong)*

Session ID: T-5-4.5 **Time:** 1700–1715 hrs **Paper ID:** 1571050683

Implementing Agrivoltaics in Suburban Small Farms: A Solar Tree Prototype

*Chi Chung Lee, Shu Yi Wang, Man Yee Chu and Siu Kei Lam (Hong Kong Metropolitan University, Hong Kong);
Shu Lun Mak (Vocational Training Council, Hong Kong);
Chun Yin Li (Hong Kong Metropolitan University, Hong Kong)*

Session ID: T-5-4.6 **Time:** 1715–1730 hrs **Paper ID:** 1571042121

Maximizing Output Power of a PV Array Under Non-Uniform Solar Irradiation Conditions

Himanshu Sekhar Sahu and Sandeep Kumar Soni (Shiv Nadar University, India)

Session	T-6-4 AI in Signal Processing 1	[Parallel]
Date/Day	Tuesday, 3 December 2024	
Room	Orchid Jr 4312	
Chair(s)	Emily Hao	

■ Session ID: T-6-4.1 Time: 1600–1615 hrs Paper ID: 1571050813

Wi-Con: Wi-Fi Channel State Information for Sensing in Confined Environments

Ragavan Ravichandran, Prarthanan Sothyrajah, Nerththiga Neminathan, Dilagshan Gunasekaran, Dileeka Dias and Hewa Halpage Samiru Gayan (University of Moratuwa, Sri Lanka)

■ Session ID: T-6-4.2 Time: 1615–1630 hrs Paper ID: 1571049113

Custom ANN: An Approach for Efficient Modulation Classification

Varun Kumar and Deepika Gupta (Indian Institute of Information Technology Vadodara, India)

■ Session ID: T-6-4.3 Time: 1630–1645 hrs Paper ID: 1571045953

Performance Evaluation of Domain Isolation Algorithm Using Mininet-WIFI

Dino Budi Prakoso and Riri Fitri Sari (University of Indonesia, Indonesia);
Muhammad Salman (Universitas Indonesia, Indonesia)

■ Session ID: T-6-4.4 Time: 1645–1700 hrs Paper ID: 1571057414

Packet Aggregation May Harm Batched Network Coding

Hoover H. F. Yin (The Chinese University of Hong Kong, Hong Kong)

■ Session ID: T-6-4.5 Time: 1700–1715 hrs Paper ID: 1571033683

Novel Estimation Problems in Non-Gaussian Noise Models: Maximum Likelihood Approach

Sainath Bitragunta (Birla Institute of Technology and Science Pilani, Rajasthan, India)

■ Session ID: T-6-4.6 Time: 1715–1730 hrs Paper ID: 1571034539

Filipino Sign Language Recognition Using Wi-Fi Channel State Information

Jiuseppe Minh Elijah Galino Baldeo, Julian Angelo Perez Canlas, Kyle Danise Castro Clata, John Jewel Doctolero Surot, Daniel Cedrick Cruz Flores and Josyl Mariela Rocamora Reyes (University of Santo Tomas, Philippines)

1900 – 2200 hrs Conference Dinner (Melati Main Ballroom, Level 4)

Day 3: 4 December 2024, Wednesday

Session	W-1-1 Power and Energy 5
Date/Day	Wednesday, 4 December 2024
Room	Lotus 4A&4B
Chair(s)	Tan Yen Kheng

Session ID: W-1-1.1 **Time:** 0900–0915 hrs **Paper ID:** 1571041849

Optimal Configuration of Offshore Vertical-Axis Wind Turbine Farms

Jiayi Xu and Dinh Hoa Nguyen (Kyushu University, Japan)

Session ID: W-1-1.2 **Time:** 0915–0930 hrs **Paper ID:** 1571042861

Advancements in Efficient and Sustainable Wireless Charging for Electric Vehicles

*Abu Shufian and Md. Tanvir Rahman (American International University-Bangladesh, Bangladesh);
Sowrov Komar Shib (American International University-Bangladesh, Bangladesh);
Mehrab Islam Omi and Saniat Rahman Zishan (American International University-Bangladesh, Bangladesh);
Shaikh Anowarul Fattah (BUET, Bangladesh);
Mohammad Saquib (UniversityTexas Dallas, USA)*

Session ID: W-1-1.3 **Time:** 0930–0945 hrs **Paper ID:** 1571033203

Power-Sharing Mechanism for a Modular Robot Using Power Packet Technology

Kotaro Sanada, Nobuo Satoh and Hiroshi Arai (Chiba Institute of Technology, Japan)

Session ID: W-1-1.4 **Time:** 0945–1000 hrs **Paper ID:** 1571044206

Enhanced Battery Degradation-Aware Scheduling for Distribution Network With Electric Vehicle Load

*Vijay Babu Pamshetti (SIT & CBIT, Singapore);
Wei Zhang (Singapore Institute of Technology (SIT), Singapore);
Andy Andy (ASTAR, Singapore);
Qingyu Yan (Nanyang Technological University, Singapore);
Kuan Tak Tan (Singapore Institute of Technology, Singapore)*

Session ID: W-1-1.5 **Time:** 1000–1015 hrs **Paper ID:** 1571050089

Optimal Sizing of Hybrid PEMFC/Lithium-Ion Battery Power Systems Using Rule-Based Cycle Charging Algorithm for Telecommunication Base Stations

*Arvin D Escultero (University of the Philippines, Philippines & UP Diliman, Philippines);
Joey Ocon and Carl Michael F. Odulio (University of the Philippines, Philippines)*

Session ID: W-1-1.6 **Time:** 1015–1030 hrs **Paper ID:** 1571049627

Research on AI Energy Management of Ultra-Speed Magnetic Levitation Flywheel Energy Storage

*Shi Xiao and Zhiyuan Tang (CRRC Qingdao Sifang Co., Ltd., China);
Jie Ren (Beijing Jiaotong University, China)*

Session	W-2-1 Communication Networks 2	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Melati Jr 4111	
Chair(s)	Taniza Roy	

Session ID: W-2-1.1 **Time:** 0900–0915 hrs **Paper ID:** 1571034332

Kalasag: Development of Smartfoam for an Arnis Electronic Scoring System

Alfred Jason Reinares Abanto, Jaybie A de Guzman (University of the Philippines, Diliman, Philippines)

Session ID: W-2-1.2 **Time:** 0915–0930 hrs **Paper ID:** 1571033243

Low-Power Hamming Distance Detection Circuit Using Cross-Coupled Electronic Neuron

Daishi Nishiguchi, Masaaki Fukuhara, Mitsutoshi Yahara, Kuniaki Fujimoto (Tokai University, Japan)

Session ID: W-2-1.3 **Time:** 0930–0945 hrs **Paper ID:** 1571033902

Teaching the Internet With AR and Toy Bricks

Steve Kerrison and Jusak Jusak (James Cook University, Singapore)

Session ID: W-2-1.4 **Time:** 0945–1000 hrs **Paper ID:** 1571041949

Cooperative Localisation System Using Ultra-Wide Band and GPS

Pratham Gowtham (RV College of Engineering, India);

Uttarakumari M (R V College of Engineering, Bangaore, India);

Pavan Kumar C Banasode, Shreyas Shashidhar and Pradyumna S Athreya (RV College of Engineering, India)

Session ID: W-2-1.5 **Time:** 1000–1015 hrs **Paper ID:** 1571038223

Optical Twist Sensor Based on Femtosecond Laser Inscribed In-Fiber Micro-Structure

Xuewen Shu (Huazhong University of Science and Technology, China)

Session ID: W-2-1.6 **Time:** 1015–1030 hrs **Paper ID:** 1571049843

Enhancing Music Source Separation Using U-Net and Generative Adversarial Network

Vinitha George E (Model Engineering College, Cochin University of Science and Technology, Kochi, Kerala);

Abhiram Ambadi S, Anantha Krishnan D, Fathima Farheen and Ravishankar K R (Model Engineering College, KTU, India);

Devassia V P (St. Joseph's College of Engg. And Tech., Palai, Kerala, India)

Session	W-3-1 Information 8	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Orchid Jr 4211	
Chair(s)	A Alphones	

Session ID: W-3-1.1 **Time:** 0900–0915 hrs **Paper ID:** 1571041894

Development of an RAG-Based LLM Chatbot for Enhancing Technical Support Service

*Ho-Chit Lee, Kevin Hung and Gary Man-Tat Man (Hong Kong Metropolitan University, Hong Kong);
Raymond Ho (OptiMicro Technologies Inc., Canada);
Monica Leung (Hong Kong Metropolitan University, Hong Kong)*

Session ID: W-3-1.2 **Time:** 0915–0930 hrs **Paper ID:** 1571041676

Window-Based Quaternion Principal Component Analysis of Eye Gaze Dynamics for Depression Severity Prediction

*Kevin Hung, Gary Man-Tat Man and Kwok Tai Chui (Hong Kong Metropolitan University, Hong Kong);
Daniel Hung-kay Chow (The Education University of Hong Kong, China);
Bingo Wing-Kuen Ling (Guangzhou, China);
Sio Hang Pun (University of Macao, Macao);
Tai-Wa Liu (Hong Kong Metropolitan University, Hong Kong)*

Session ID: W-3-1.3 **Time:** 0930–0945 hrs **Paper ID:** 1571050550

Preliminary Study of LLM-Based Wordlist Generation for Validating Broken Web Access Control

Kong Sum Ng, Fan Yan and Kevin Hung (Hong Kong Metropolitan University, Hong Kong)

Session ID: W-3-1.4 **Time:** 0945–1000 hrs **Paper ID:** 1571033254

Wi-Fi Based Human Activity Recognition Using BiLSTM With Kernel Ridge Regression

*Lu Zhang (Yonsei University, Korea (South));
Jaekwon Lee (School of Electrical and Electronic Engineering Yonsei University, Seoul, Republic of Korea, Korea (South));
Donghyun Kim and Kar-Ann Toh (Yonsei University, Korea (South))*

Session ID: W-3-1.5 **Time:** 1000–1015 hrs **Paper ID:** 1571040784

Human Activity Recognition Based on the GRU With Augmented Wi-Fi CSI Signals

Hari Kang, Donghyun Kim and Kar-Ann Toh (Yonsei University, Korea (South))

Session ID: W-3-1.6 **Time:** 1015–1030 hrs **Paper ID:** 1571039801

Machine Learning Algorithm for Handwritten Numerical Character Identification Using FPGA Based Custom IP Core

Shraman Biswas, Soumya Pandit and Arpita Das (University of Calcutta, India)

Session	W-4-1 Electronics 7	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Orchid Jr 4212	
Chair(s)	Chinnaiah Mangali	

Session ID: W-4-1.1 **Time:** 0900–0915 hrs **Paper ID:** 1571054596

Expanding I/O Pins of Microcontroller by Cascading Shift Registers

Raj Kumar Mishra (Indian Institute of Technology Bombay, India);
Mayuresh Pitale (Sardar Patel Institute of Technology, India)

Session ID: W-4-1.2 **Time:** 0915–0930 hrs **Paper ID:** 1571033667

Temperature Dependence of Photogenerated Carriers in GaN Layer of AlGaIn/GaN HEMT

Kento Kondo, Haruki Hayashi, Soichi Sano, Junya Takeda and Hirohisa Taguchi (Chukyo University, Japan)

Session ID: W-4-1.3 **Time:** 0930–0945 hrs **Paper ID:** 1571034474

Adaptive Step Length Estimation and GNSS Integration to Improve PDR Accuracy

Yixin CAO (Ritsumeikan University, Japan & None, Japan);
Soya Tezuka and Yukihiro Kubo (Ritsumeikan University, Japan)

Session ID: W-4-1.4 **Time:** 0945–1000 hrs **Paper ID:** 1571034476

NLOS Satellites Detection Method Applying Relative Positioning

Hayashi Ryuga and Yukihiro Kubo (Ritsumeikan University, Japan)

Session ID: W-4-1.5 **Time:** 1000–1015 hrs **Paper ID:** 1571041875

High Speed Low Power Dynamic CMOS Comparator for SAR ADCs

Jazzmyne Rona M. Agustin (MSU - Iligan Institute of Technology, Philippines);
Harreez Villaruz (Mindanao State University - Iligan Institute of Technology, Philippines);
Nieva Mapula (MSU-Iligan Institute of Technology, Philippines);
Gene Fe P Palencia (Mindanao State University - Iligan Institute of Technology, Philippines)

Session ID: W-4-1.6 **Time:** 1015–1030 hrs **Paper ID:** 1571034337

Advancements in Image Enhancement for Improved Knee Ultrasound Segmentation Towards Measurement of Lateral Patellar Tendon Displacement

Gabriel Rodnei M Geslani, Emmanuel Guevara, Antonio Miguel C Frias, Kyle Patrick Barce, Yannis Andrei Cruz, Darren Jan Medriano, Hoover Arabis, Jan Tyrone Cabrera, Consuelo B. Gonzalez-Suarez, Ivan Neil Gomez, Emily Rose D Nacpil, Jazzmine Gale S. Flores, Justine B. Duran, Elaine Nicole S. Bulseco, Angelo Dela Cruz, Seigfred V. Prado, Edison Roxas, Kanny Krizzy Serrano and Timothy Nazareno (University of Santo Tomas, Philippines)

Session ID: W-4-1.6 **Time:** 1015–1030 hrs **Paper ID:** 1571034611

Design and Implementation of a oneM2M-Based Remote Monitoring System for Water Supply in Water Distribution Networks

Hazel Mae D Gadiaza, Azis M. Agantal and Wynne Angelo B. Arcilla (University of the Philippines Diliman, Philippines);
Francis Glenn D. Hernandez (University of the Philippines, Diliman, Philippines);
Jaybie A de Guzman (University of the Philippines Diliman, Philippines)

Session	W-5-1 Special Session on Optical Wireless Communications	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Orchid Jr 4311	
Chair(s)	Wang Zixiong	

Session ID: W-5-1.1 **Time:** 0900–0915 hrs **Paper ID:** 1571057227

Joint Model and Data-Driven Coherent Transceiver Design in Laser Phase Noise–Dr Wang Qian

Qian Wang (Zhejiang University of Technology, China)

Session ID: W-5-1.2 **Time:** 0915–0930 hrs **Paper ID:** 1571057136

Nonlinear Impairments Mitigation in Visible Light Communication Systems–Dr Li Xiang

Xiang Li (China University of Geoscience (Wuhan), China)

Session ID: W-5-1.3 **Time:** 0930–0945 hrs **Paper ID:** 1571057069

Transceiver Impairments Estimation by Number Theoretic Optimization–Dr Du Xinwei

Xinwei Du (BNU-HKBU United International College, China)

Session ID: W-5-1.4 **Time:** 0945–1000 hrs **Paper ID:** 1571057001

Retroreflective Optical ISAC Using OFDM and Corner Cube Reflector–Dr Chen Chen

Chen Chen (Chongqing University, China);

Pengfei Du (Singapore Institute of Manufacturing Technology, Agency of Science Technology and Research, Singapore)

Session ID: W-5-1.5 **Time:** 1000–1015 hrs **Paper ID:** 9999999999

Recent Progress on Visible Light Communications -Dr Shen Chao

Junchu Huang and Yan Song (Research Institute of China Telecom Corporation Ltd, China)

Session ID: W-5-1.6 **Time:** 1015–1030 hrs **Paper ID:** 1571035687

Simulation and Experimental Validation of Optical Camera Communication

Srivathsan Chakaravarthi Narasimman and Arokiaswami Alphones (Nanyang Technological University, Singapore)

Day 2: 3 December 2024, Tuesday

Session	W-6-1 Special Session on AI in Clinical Technologies: Present and Future 3 [Parallel]
Date/Day	Wednesday, 4 December 2024
Room	Orchid Jr 4312
Chair(s)	A Alphones

Session ID: W-6-1.1 **Time:** 0915–0930 hrs **Paper ID:** 1571042001

Vision-Based Model for Continuous Monitoring and Evaluation of Multiple Digital Screen Exposure

Gabriel Rodnei M Geslani, Edison Roxas, Joseph Den T Amores, Rondem Dominic M Bandiola, Allyana R Deveza, Jacqueline D Ong and Aaliah Nicole Brillante (University of Santo Tomas, Philippines)

Session ID: W-6-1.2 **Time:** 0930–0945 hrs **Paper ID:** 1571041707

Remote Blood Pressure Measurement Through Facial PPG Signals

*Arulselvi R (Mepco Schlenk Engineering College, India);
Vijay Jeyakumar (Sri Sivasubramaniya Nadar College of Engineering, India);
Gowri Vidya N (St. Josephs Institute of Technology, India);
Gurucharan Marthi Krishna Kumar (McGill University, Canada);
M Lakshmi (Sri Ramachandra University, India)*

Session ID: W-6-1.3 **Time:** 0945–1000 hrs **Paper ID:** 1571043942

TriSpectralLSTM for COPD Detection via Lung Sound Analysis

*Abhinav Roy (IIIT NR, India);
Bhavesh S Gyanchandani (IIITNR, India);
Aditya Oza (International Institute of Information Technology Naya Raipur, India & No, India);
Aadi Krishna Vikram (IIIT NR, India);
Anurag Singh (IIIT Naya Raipur, India)*

Session ID: W-6-1.4 **Time:** 1000–1015 hrs **Paper ID:** 1571025214

WENN-4: Weighted Ensemble for Enhanced Diabetic Retinopathy Detection

*Aadi Krishna Vikram and Abhinav Roy (IIIT NR, India);
Bhavesh S Gyanchandani (IIITNR, India);
Aditya Oza (International Institute of Information Technology Naya Raipur, India & No, India);
Santosh Kumar (International Institute of Information Technology, Naya Raipur, India)*

Session ID: W-6-1.5 **Time:** 0900–0915 hrs **Paper ID:** 1571041960

Speaker Recognition Using Deep Learning Techniques

*Maninder Maan and Kabir Kapur (Thapar Institute of Engineering and Technology, Patiala, India);
Arun Pundir (Indian Institute of Technology, Roorkee, India)*

Session ID: W-6-1.6 **Time:** 0915–0930 hrs **Paper ID:** 1571034123

Speech Emotion Recognition With DNN and Combination of CNN-LSTM

*Ponna Dinesh (Sardar Vallabhbhai National Institute of Technology, Surat, India);
Siba Prasad Mishra (Sardar Vallabhbhai National Institute of Technology Surat, India);
Pankaj Warule (Sardar Vallabhbhai National Institute of Technology Surat, India & Pravara Rural Engineering College Loni, India);
Suman Deb (Sardar Vallabhbhai National Institute of Technology, Surat, India)*

1030 – 1100 hrs Tea Break

Session	W-1-2 Power and Energy 6	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Lotus 4A&4B	
Chair(s)	Christopher Lee	

Session ID: W-1-2.1 **Time:** 1015–1030 hrs **Paper ID:** 1571034615

Towards Achieving Singapore’s Carbon Emission Reduction Goals by Means of Electricity Imports

Shwe Sin Han and Anurag Chidire (Chair of Renewable and Sustainable Energy Systems, Technical University of Munich, Germany & TUMCREATE Ltd., Singapore);

Tobias Massier (TUMCREATE Ltd., Singapore);

Thomas Hamacher (Chair of Renewable and Sustainable Energy Systems, Technical University of Munich, Germany)

Session ID: W-1-2.2 **Time:** 1100–1115 hrs **Paper ID:** 1571049911

Data Interpolation for Mitigating False Data Injection Attacks in Smart Grids

MD Jainul Abudin (National Institute of Technology Meghalaya, India);

Surmila Thokchom and Gayadhar Panda (NIT Meghalaya, India)

Session ID: W-1-2.3 **Time:** 1115–1130 hrs **Paper ID:** 1571034294

Adaptive PV Systems: Using Genetic Algorithm and Random Forest Classifier to Mitigate the Effects of Partial Shading on Solar Photovoltaic Systems

Ivan Perry M. Cabanayan, Adrian Enrico D. Rodriguez, Robert Alfie S. Peña and Erees Queen B. Macabebe (Ateneo de Manila University, Philippines)

Session ID: W-1-2.4 **Time:** 1130–1145 hrs **Paper ID:** 1571043833

Detecting and Localizing Electricity Pilferage Using Deep Neural Networks in a Low Voltage Distribution Network With Both Smart and Traditional Meters

Eduardo O. Bautista, Michael Angelo D Casama and Daniel D. Nepomuceno (University of the Philippines, Philippines);

Michael Angelo Pedrasa (University of the Philippines Diliman, Philippines)

Session ID: W-1-2.5 **Time:** 1145–1200 hrs **Paper ID:** 1571034478

Optimization of the Operating Point of Multi-Reactive Power Compensation Equipment Considering Facility Characteristics

Ji-Woong Choi (Kwangwoon University, Korea(South));

Ho-Jun Lee (Kwangwoon University, Korea (South));

HyunKeun Ku (Korea Electric Power Corporation, Korea (South));

Minhan Yoon (Kwangwoon University, Korea (South))

Session ID: W-1-2.6 **Time:** 1145–1200 hrs **Paper ID:** 1571039402

ELECTRIFAI: An AI-Driven Solution for Enhancing Electricity Distribution Efficiency and Preventing Unauthorized Power Tapping in the Philippines

Gerhard P. Tan (Polytechnic University of the Philippines & De La Salle University, Philippines);

Daniel S Caparro (Polytechnic University of the Philippines & Academia, Philippines);

Justine Rey Y Daquis, Clarence Jay M Fetalino, Mc Allen G Fradejas and Raeselyn C. Macorol (Polytechnic University of the Philippines, Philippines)

Session	W-2-2 AI in Signal Processing 2	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Melati Jr 4111	
Chair(s)	Luo Bin	

Session ID: W-2-2.1 **Time:** 1100–1115 hrs **Paper ID:** 1571041288

IMU-Based Model for Precise Toothbrush Stroke and Orientation Tracking

Mohammad Ariful Islam Bhuyan, Md Mayen Uddin and Hyeon Cheol Kim (University of Ulsan, Korea (South))

Session ID: W-2-2.2 **Time:** 1115–1130 hrs **Paper ID:** 1571034722

Significance of Corpus Quality for Direct Speech-To-Text Translation Systems

*Tonmoy Rajkhowa (IIT BHU, Varanasi, India);
Amartya Roy Chowdhury and Lokesh Kumar (Indian Institute of Technology, Dharwad, India)*

Session ID: W-2-2.3 **Time:** 1130–1145 hrs **Paper ID:** 1571034566

Targeted Influence Maximization Using Centrality and Diminishing Weight

Khanjan Changmai Baruah and Rohit Tripathi (Indian Institute of Information Technology Guwahati, India)

Session ID: W-2-2.4 **Time:** 1145–1200 hrs **Paper ID:** 1571050421

Extraction of Heart Rate From Photoplethysmography Signals on Multiple Sites for Wearable Heart Monitoring Systems

*Ghesette Mae F. Punay, Reynaldo P Guieb III and Carl Timothy S. Tolentino (University of the Philippines Diliman, Philippines);
Marc Rosales (University of the Philippines, Philippines);
Paul Jason Co and John Richard Hizon (University of the Philippines Diliman, Philippines)*

Session ID: W-2-2.5 **Time:** 1200 -1215 hrs **Paper ID:** 1571044975

Heart and Respiratory Rate Extraction From a Single Audio-Based Monitoring System Using Wavelet and Hilbert Transforms

*Gabriel Daren L. Monasterial, Ned Jairus A Tilos, Daniel R. Vicho and Paul Jason Co (University of the Philippines Diliman, Philippines);
Marc Rosales (University of the Philippines, Philippines);
John Richard Hizon and Carl Timothy S. Tolentino (University of the Philippines Diliman, Philippines)*

Session ID: W-2-2.6 **Time:** 1215–1230 hrs **Paper ID:** 1571041758

EEG Changes During Carbonated-Beverages Swallowing

Rui Takahashi, Yutaka Suzuki, Shuya Shida and Kyoko Yamazaki (Toyo University, Japan)

Session	W-3-2 Information 9	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Orchid Jr 4211	
Chair(s)	Michael Ong	

■ **Session ID:** W-3-2.1 **Time:** 1100–1115 hrs **Paper ID:** 1571038348

High Speed Small Item Production Line Tracking Using Computer Vision and Cloud Computing

Marielet A. Guillermo, Arvin Fernando, Athena Rosz Ann R. Pascua, Neil Oliver Velasco and Kate G Francisco (De La Salle University, Philippines)

■ **Session ID:** W-3-2.2 **Time:** 1115–1130 hrs **Paper ID:** 1571041603

Development of a Web-Based Outcomes-Based Education (OBE) Management System With Drill Down Analysis for Tracking Competency-Based Learning for Tertiary Students

Geliza Marie I Alcober, Teodoro F Revano, Jr, Rossana T. Adao, Christian Blair Lopez, Andrei Joseph Garcia and Ace Lagman (FEU Institute of Technology, Philippines)

■ **Session ID:** W-3-2.3 **Time:** 1130–1145 hrs **Paper ID:** 1571041681

Image Encryption Using Chaotic Map

Amutha R (SSN College of Engineering, India)

■ **Session ID:** W-3-2.4 **Time:** 1145–1200 hrs **Paper ID:** 1571041983

Evaluating Classifier Performance in Mapping Paddy Rice Fields Using Multi-Temporal SAR Data on Google Earth Engine

*Robert Martin C Santiago (De La Salle University, Philippines);
Eduardo Jimmy Quilang (Philippine Rice Research Institute, Philippines);
Edwin Sybingco (De La Salle University, Philippines)*

■ **Session ID:** W-3-2.5 **Time:** 1200 -1215 hrs **Paper ID:** 1571042973

Sign Language Gesture Recognition Using YOLOv9 for Medical Attention of Hard of Hearing Population

*Pranjal Gogoi, Bhumika Karsh and Ram Karsh (National Institute of Technology Silchar, India);
Rabul Laskar (NIT SILCHAR, India);
Manas Kamal Bhuyan (IIT Guwahati, India)*

■ **Session ID:** W-3-2.6 **Time:** 1215–1230 hrs **Paper ID:** 1571042062

AttV19Net: Attention Based VGG 19 Network for Hand Gesture Recognition With a Prototype

*Bhumika Karsh (National Institute of Technology Silchar, India);
Rabul Laskar (NIT SILCHAR, India);
Ram Karsh (National Institute of Technology Silchar, India);
Manas Kamal Bhuyan (IIT Guwahati, India)*

Session	W-4-2- Emerging Topics 8	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Orchid Jr 4212	
Chair(s)	Aishwarya Bandla	

■ **Session ID:** W-4-2.1 **Time:** 1100–1115 hrs **Paper ID:** 1571033621

Image Comparative Index (ICI): A Pixel-Wise Image Similarity Metric for Computational Super-Resolution (SR) Microscopy

*Shiraz S Kaderuppan and Anurag Sharma (Newcastle University, Singapore);
 Muhammad Ramadan Saifuddin (Newcastle University in Singapore, Singapore);
 Eugene W L Wong (Singapore Institute of Technology, Singapore);
 Wai Lok Woo (Northumbria University & Newcastle University, United Kingdom (Great Britain))*

■ **Session ID:** W-4-2.2 **Time:** 1115–1130 hrs **Paper ID:** 1571026943

Validating Pseudo-Label Dataset for Japanese Hate Speech Detection

Taisei Kajiwara and Yoshitaka Sakurai (Meiji University, Japan)

■ **Session ID:** W-4-2.3 **Time:** 1130–1145 hrs **Paper ID:** 1571049147

Intelligent Management System for Industrial Sugar Hoppers in Food Manufacturing Using IoT

*Earl Jewel M. Arel, Jenica Charlyze L. Chua, Matthew Joseph C. Dionela, Martina A. Fortuna, Alrick Wynton T. Lim, Jason Española, Dino Ligutan, Argel Bandala and Ryan Rhay P. Vicerra (De La Salle University, Philippines);
 Elmer P. Dadios (Philippines, Philippines)*

■ **Session ID:** W-4-2.4 **Time:** 1145–1200 hrs **Paper ID:** 1571042011

Development of Microplastics Detector and Quantifier Utilizing Deep Learning Based Algorithm

Mark Angelo C Regoso, Melissa B Galang, John Elbert R Mendoza, Jhoana C Suelo, Sem B Jalotjot and Herbert V Villaruel (National University Philippines, Philippines)

■ **Session ID:** W-4-2.5 **Time:** 1200 -1215 hrs **Paper ID:** 1571041787

A Novel Two-Phase Social Network-Based Consensus Mechanism: Opinion Dynamics for Large-Scale Group Decision-Making

*Sangita Dutta and Susanta Chakraborty (Indian Institute of Engineering Science and Technology, India);
 Malay Kule (Indian Institute of Engineering Science and Technology, Shibpur, India)*

Session	M-5-2 Special Session on Energy-efficient Circuits, Systems and Algorithms for AI-embedded Mobile and Edge Devices [Parallel]
Date/Day	Wednesday, 4 December 2024
Room	Orchid Jr 4311
Chair(s)	Emily Hao

Session ID: W-5-2.1 **Time:** 1100–1115 hrs **Paper ID:** 1571043326

Investigation of the Effects of Variable Accuracy Approximate Units in Deep Neural Network Accelerators

D Shravan Narayana, Chandrak Jayakumar, Raghuram S, Suhas Y and Banu Prasad M (MSRIT, India)

Session ID: W-5-2.2 **Time:** 1115–1130 hrs **Paper ID:** 1571057962

Continual Learning Enabled Smart Industrial Edge Computing Platforms

Nikhil Singhal (ABV-Indian Institute of Information Technology and Management Gwalior, India);

K K Pattanaik (Indian Institute of Information Technology and Management, India);

Garima Nain (ABV-IIITM, Gwalior, India)

Session ID: W-5-2.3 **Time:** 1130–1145 hrs **Paper ID:** 1571042023

CCTV on Steroids: The Design and Implementation of BantAI, a Robbery Prediction System for Edge Devices

Charlene L Epilepsia and Jan Rhey B Lagaña (University of the Philippines - Diliman, Philippines);

Isabelita T Yano and Isabel Austria (University of the Philippines Diliman, Philippines)

Session ID: W-5-2.4 **Time:** 1145–1200 hrs **Paper ID:** 1571062977

A ResNet-Based DVFS Regulator for Heterogeneous Multi-Core Mobile Processors

Shibo Hu and Xinzi Xu (Shanghai Jiao Tong University, China);

Yuze Chen and Muyun Qin (Xiaomi Corporation, China);

Yong Lian (York University, Canada);

Yang Zhao (Shanghai Jiao Tong University, China)

Session ID: W-5-2.5 **Time:** 1200–1215 hrs **Paper ID:** 1571050868

An Interactive Web App Playbook With an AI Assistant for Improving Organizational Communication

Wen Yang Tan and Nicholas H L Wong (Singapore Institute of Technology, Singapore)

Session	W-6-2 Special Session on Bridging the Gap: Engineering Education Enhanced through Artificial Intelligence [Parallel]
Date/Day	Wednesday, 4 December 2024
Room	Orchid Jr 4312
Chair(s)	Kok Chiang Liang

Session ID: W-6-2.1 **Time:** 1100–1115 hrs **Paper ID:** 1571046833

Enhancing Accuracy and Stability in Standing Wave Acoustic Levitation Systems

Ding Kai Chen (The University of Newcastle Australia, Singapore); Yit Koh (University of Newcastle, Singapore); Chee Kit Ho (Singapore Institute of Technology, Singapore); Bofan Zhao (The University of Newcastle Australia, Singapore); T. Hui Teo (Singapore University of Technology and Design, Singapore); Chiang Liang Kok (University of Newcastle Australia, Singapore)

Session ID: W-6-2.2 **Time:** 1115–1130 hrs **Paper ID:** 1571039807

An Adaptive Neuro-Fuzzy Framework for Monitoring Student Outcomes With Individualized Dashboard in Outcome-Based Education

Pocholo James Loresco (De La Salle University, Manila & Far Eastern University Institute of Technology, Philippines); Nino Pilueta (FEU Institute of Technology, Philippines)

Session ID: W-6-2.3 **Time:** 1130–1145 hrs **Paper ID:** 1571041613

Criteria-Based Recommender Platform for Achieving Optimal Time-To-Graduation Using Backward Chaining Algorithm

John Heland Jasper Ortega, Roman M De Angel, Ace Lagman and Abigail Alix (FEU Institute of Technology, Philippines); Roland 'Jonas' A Calderon (SLSU, Philippines); Rolando Bacungan Barrameda (De La Salle University - Dasmartas & DLSU-D, Philippines)

Session ID: W-6-2.4 **Time:** 1145–1200 hrs **Paper ID:** 1571049065

Addressing Sustainability Challenges in AI Integration: Data Privacy, Accessibility, and Ethical Considerations

Chiang Liang Kok (University of Newcastle Australia, Singapore); Chee Kit Ho (Singapore Institute of Technology, Singapore); Charles Lee (The University of Newcastle Australia, Singapore); Bo Wen Heng (The University of Newcastle Australia, Australia); T. Hui Teo (Singapore University of Technology and Design, Singapore)

Session ID: W-6-2.5 **Time:** 1200 -1215 hrs **Paper ID:** 1571057365

A Comprehensive Study on AI Applications for Promoting Equity in Engineering Education

Chiang Liang Kok (University of Newcastle Australia, Singapore); Chee Kit Ho (Singapore Institute of Technology, Singapore); Bo Wen Heng (The University of Newcastle Australia, Australia); Yit Koh (University of Newcastle, Singapore); T. Hui Teo (Singapore University of Technology and Design, Singapore)

Session ID: W-6-2.6 **Time:** 1215 -1230 hrs **Paper ID:** 1571057861

Psychological Aspects of AI Enhanced Learning Experiences

Chiang Liang Kok (University of Newcastle Australia, Singapore); Chee Kit Ho (Singapore Institute of Technology, Singapore); Yit Koh (University of Newcastle, Singapore); Bo Wen Heng (The University of Newcastle Australia, Australia); T. Hui Teo (Singapore University of Technology and Design, Singapore)

1230 – 1400 hrs

Lunch, Exhibition & Interactive Forum III (Orchid Main Ballroom, Level 4)

Session	W-1-3 Power and Energy 7	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Lotus 4A & 4B	
Chair(s)	Y. V. Pavan Kumar	

Session ID: W-1-3.1 **Time:** 1400–1415 hrs **Paper ID:** 1571042006

A Study on New PWM Signal Generation and Control Methods Application in Power Electronics Control

Hai-Jiao Guo (Tohoku-Gakuin University, Japan)

Session ID: W-1-3.2 **Time:** 1415–1430 hrs **Paper ID:** 1571048887

Fuzzy Logic Based Model Predictive Current Control for Improved Power Quality in Microgrid Clusters

Pavan Kumar Y. V. (VIT-AP University, India);

S N V Bramaeswara Rao (Sir C R Reddy College of Engineering, Eluru, Andhra Pradesh, India);

Pradeep Reddy Gogulamudi (Manipal Institute of Technology, India)

Session ID: W-1-3.3 **Time:** 1430–1445 hrs **Paper ID:** 1571044700

RF-To-DC Conversion Circuit With Configurable Impedance Matching Circuit for RF Energy Harvesting in 65nm CMOS Technology

Nieva Joy Ubos, Ma. Ricalyn Zablan and Kirsten Daniella O Acas (Mindanao State University- Iligan Institute of Technology, Philippines);

Olga Joy Gerasta (Mindanao State University-Iligan Institute of Technology, Philippines);

Gene Fe P Palencia (Mindanao State University - Iligan Institute of Technology, Philippines);

Nieva Mapula and Kevin Maglante (MSU-Iligan Institute of Technology, Philippines);

Rochelle M. Sabarillo and Jessa Lee Salutes Balasa (Mindanao State University - Iligan Institute of Technology, Philippines)

Session ID: W-1-3.4 **Time:** 1445–1500 hrs **Paper ID:** 1571050478

Design of a Multi-Input Boost Converter for Hybrid Power Delivery

Wezen S. Labiste (University of the Philippines Diliman, Philippines);

Carl Michael F. Odulio (University of the Philippines, Philippines)

Session ID: W-1-3.5 **Time:** 1500–1515 hrs **Paper ID:** 1571042688

Current-Prediction Based Transient Control of a Dual-Active-Bridge Converter With Frequency Modulation

Chao Tang, RUI QI Ding, Chuan Sun and Xiaodong LI (Macau University of Science and Technology, Macao)

Session ID: W-1-3.6 **Time:** 1515–1530 hrs **Paper ID:** 1571050451

Optimal Harmonic Estimation in Renewable Integrated Power System Using Grasshopper Optimisation Algorithm and Recursive Least Square Approach

Ashok Bhoi (National Institute of Technology, Meghalay, India);

Ranjan K. Mallick (SOA University, India);

Pravati Nayak (S 'O'A University, India);

Sairam Mishra (Siksha O Anushandhan Deemed to Be University, India);

Gayadhar Panda (NIT Meghalaya, India);

Amaresh Gantayet (Siksha 'O' Anusandhan University, India)

Session	W-2-3 Renewable Energy and Energy Storage	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Melati Jr 4111	
Chair(s)	Arjin Numsomran	

Session ID: W-2-3.1 **Time:** 1400–1415 hrs **Paper ID:** 1571046386

Cuckoo Search Based MPPT With Quadra Tied Solar PV Array for Maximising Power Extraction Under Partial Shadows
Abhinav Bhattacharjee and Mikkili Suresh (National Institute of Technology Goa, India)

Session ID: W-2-3.2 **Time:** 1415–1430 hrs **Paper ID:** 1571050817

The Development of a Lithium-Ion Battery Analyzer for Data Driven Analysis of Battery Performance
*Arjin Numsomran and Kunanon Jaitrong (King Mongkut's Institute of Technology Ladkrabang, Thailand);
 Puvit Seetisarn (Ruamrudee International School, Thailand);
 Vittaya Tipsuwanporn and Jutarut Chaoraingern (King Mongkut's Institute of Technology Ladkrabang, Thailand)*

Session ID: W-2-3.3 **Time:** 1430–1445 hrs **Paper ID:** 1571032786

Chanced-Constrained Rolling-Horizon Optimization for the Green Hydrogen Microgrid System Operation
*Hayeong Cho, Minhan Yoon and Ho-Jun Lee (Kwangwoon University, Korea (South));
 Lee Jae-Hyung (Samsung C&T, Korea (South))*

Session ID: W-2-3.4 **Time:** 1445–1500 hrs **Paper ID:** 1571056758

Smart Solar Forecasting: Machine Learning Approaches for Predicting Solar Power
*Santanu Borgohain (National Institute of Technology Meghalaya, India);
 Madhav Kumar (Bijni Complex, Laitumkhrach & NIT Meghalaya, India);
 Surmila Thokchom and Gayadhar Panda (NIT Meghalaya, India);
 Kaibalya Prasad Panda (Pandit Deendayal Energy University, India)*

Session ID: W-2-3.5 **Time:** 1500–1515 hrs **Paper ID:** 1571035215

Life Cycle Cost Analysis for Solar Energy Harvesting and Storage Options
Hans Erjan P Green, Jaira Corrine E Velasco, Jeremi Victor G Velasco and Jaybie A de Guzman (University of the Philippines Diliman, Philippines)

Session ID: W-2-3.6 **Time:** 1515–1530 hrs **Paper ID:** 1571050333

Comparative Analysis of Capacitor-Based Active Cell Balancing Topologies for Lithium-Ion Battery Packs
*Angela Kaye D. Sotto (University of the Philippines Diliman, Philippines);
 Charles Matthew O. Tongohan (University of the Philippines - Diliman, Philippines);
 Spiridon C. Tsoukalas (University of the Philippines Diliman, Philippines);
 Carl Michael F. Odulio (University of the Philippines, Philippines)*

Session	W-3-3 Informaiton 10	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Orchid Jr 4211	
Chair(s)	Vijayalakshmi	

Session ID: W-3-3.1 **Time:** 1400–1415 hrs **Paper ID:** 1571041985

LiCT-Net: Lightweight Convolutional Transformer Network for Multiclass Breast Cancer Classification

Babita D and Deepak Ranjan Nayak (Malaviya National Institute of Technology Jaipur, India)

Session ID: W-3-3.2 **Time:** 1415–1430 hrs **Paper ID:** 1571041908

Quartered Chirp Spectral Envelope for Whispered Vs Normal Speech Classification

*Johanam Joysingh, S. (Vellore Institute of Technology, Chennai, India);
P Vijayalakshmi (Sri Sivasubramaniya Nadar College of Engineering, India);
Nagarajan T (Shiv Nadar University Chennai, India)*

Session ID: W-3-3.3 **Time:** 1430–1445 hrs **Paper ID:** 1571050629

Human-Centered Intention Refinement for LLM-Based Domain-Data Analysis Using Iterative Prompt Generation

*Daichi Ohnami and Rentaro Yoshioka (University of Aizu, Japan);
Takayuki Hoshino (BIPROGY Inc., Japan)*

Session ID: W-3-3.4 **Time:** 1445–1500 hrs **Paper ID:** 1571041428

Performance Evaluation of KNIME Low Code Platform in Deep Learning Study and Optimal Hyperparameter Tuning

Pornpawee Thongkhome (Nagoya University, Japan)

Session ID: W-3-3.5 **Time:** 1500–1515 hrs **Paper ID:** 1571038021

Mobile Detection of Macronutrient Deficiencies in Lettuce Plants Using Convolutional Neural Network

*Julianne Clave, Kirk Patrick Formales, Gerard Steven Godoy and Alquea Pauline Macatangay (University of the Philippines, Diliman, Philippines);
Jhoanna I Pedrasa (University of the Philippines, Philippines)*

Session ID: W-3-3.6 **Time:** 1515–1530 hrs **Paper ID:** 1571056709

Optimizing Wheat Ear Head Detection and Yield Estimation Through UAV Based Imagery

*Aadi Krishna Vikram, Ashish Agrawal and Ankit Ranjan (IIIT NR, India);
Shubham Shinde and Swapnil Jalihale (Mahyco Private Limited, Maharashtra, India);
Anurag Singh (IIIT Naya Raipur, India);
Shrivishal Tripathi (DSPM IIIT Naya Raipur, India);
Smitha Kurup and Bharat Char (Mahyco Private Limited, Maharashtra, India)*

Session	W-4-3 Emerging Topics 9	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Orchid Jr 4212	
Chair(s)	Arif Hussain	

Session ID: W-4-3.1 **Time:** 1400–1415 hrs **Paper ID:** 1571047582

A Novel CNN Architecture for Herb Classification

*Sweety Kunjachan and Anjuru Muni Santhosh (IIITK, India);
Kala S (Indian Institute of Information Technology Kottayam, India)*

Session ID: W-4-3.2 **Time:** 1415–1430 hrs **Paper ID:** 1571050840

AI-Driven Prediction of Indian Criminal Case Outcomes

*Lakshmi Boppana (National Institute of Technology Warangal, India);
Harshith Ranga, Potnuri Sri Anjali Pravalika, Tanushka Thakre and Yellanki Lakshmi (National Institute of Technology, India)*

Session ID: W-4-3.3 **Time:** 1430–1445 hrs **Paper ID:** 1571049802

Integrating RAG With Face Recognition for Personalized Guest Services in Hotels

Munir Bin Rudy Herman, Pai Chet Ng, Malcolm Yoke Hean Low and Detlev Remy (Singapore Institute of Technology, Singapore)

Session ID: W-4-3.4 **Time:** 1445–1500 hrs **Paper ID:** 1571033746

Computer Vision Based Safety Inspection in Public Housing

Fikret Ercan and Asha Mathyalakan (Singapore Polytechnic, Singapore)

Session ID: W-4-3.5 **Time:** 1500–1515 hrs **Paper ID:** 1571041641

State Estimation of Jagged-Shape Chaotic Oscillator Using Noisy Sensor Measurements

*Abhinoy Kumar Singh (IIT Patna, India);
Venu Gopal Yamalakonda (IIT Indore, India);
Ram Bilas Pachori and Appina Balasubramanyam (Indian Institute of Technology Indore, India)*

Session	W-5-3 Special Session on Advancements in Beam Steering Antenna Systems for Next-Generation 5G/6G and Satellite Communications [Parallel]
Date/Day	Wednesday, 4 December 2024
Room	Orchid Jr 4311
Chair(s)	Nasimuddin

Session ID: W-5-3.1 **Time:** 1400–1415 hrs **Paper ID:** 1571034434

Millimeter-Wave Wide Angle Beam Scanning Composite Right/Left-Handed Leaky-Wave Antenna

Debabrata K. Karmokar (University of South Australia, Australia)

Session ID: W-5-3.2 **Time:** 1415–1430 hrs **Paper ID:** 1571049261

Enhanced Beam Steering Coverage of Grid Array Antenna Using Dielectric Radome (Invited Talk)

N Nasimuddin and Xianming Qing (Institute for Infocomm Research, Singapore);

Viet Phuong Bui and Zaw Zaw Oo (Institute of High Performance Computing, Singapore)

Session ID: W-5-3.3 **Time:** 1430–1445 hrs **Paper ID:** 1571049255

A Shared Aperture Hybrid DR Antenna for Dual-Band mmWave 5G Applications

Yu Junrui (Nanyang Technological University, Singapore);

N Nasimuddin (Institute for Infocomm Research, Singapore);

Arokiaswami Alphones (Nanyang Technological University, Singapore)

Session ID: W-5-3.4 **Time:** 1445–1500 hrs **Paper ID:** 1571035693

Broadband Single-Feed Metasurface-Based Circularly Polarized Antennas

N Nasimuddin and Xianming Qing (Institute for Infocomm Research, Singapore);

Zhi Ning Chen, Z. N. Chen (National University of Singapore, Singapore)

Session ID: W-5-3.5 **Time:** 1500–1515 hrs **Paper ID:** 1571033907

Optimum Design of Conformal Bandpass Frequency Selective Surface for X-Band RADAR Communications

Elango C (Madras Institute of Technology, Anna University, India);

Kannan M (Madras Institute of Technology, India)

Session ID: W-5-3.6 **Time:** 1515–1530 hrs **Paper ID:** 1571049753

Design of Inset Feed Microstrip Patch Antenna for Wi-Fi Band Application

Ruel Larañao Saranza (Mindanao State University- Iligan Institute of Technology, Philippines);

Olga Joy Gerasta (Mindanao State University-Iligan Institute of Technology, Philippines)

Session	W-6-3 Machine Learning in Condition Monitoring	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Orchid Jr 4312	
Chair(s)	Michael Ong	

Session ID: W-6-3.1 **Time:** 1430–1445 hrs **Paper ID:** 1571041055

A Novel Machine Learning Approach to Optimize Energy Forecasting in Industry

Venkat Subramanian Arumuga Perumal and June Tay (Singapore University of Social Sciences, Singapore)

Session ID: W-6-3.2 **Time:** 1445–1500 hrs **Paper ID:** 1571057858

Machine Condition Diagnosis Using Deep Learning and Gabor-Transformed Motor Current Signatures

Eduardo Jr Piedad (Advanced Science and Technology Institute & Universitat Polytechnica de Catalunya, Philippines);

Zherish Galvin Mayordo (Advanced Science and Technology Institute, Philippines);

Eduardo Prieto-Araujo (Technical University of Catalonia, Spain);

Oriol Gomis (UPC, Spain)

Session ID: W-6-3.3 **Time:** 1500–1515 hrs **Paper ID:** 1571033748

Machine Learning Approach for the Estimation of Optical Properties for a D-Shaped Photonic Crystal Fiber

Prajwal Suryavanshi, Shivani Sundriyal and Nishant Kumar (Indian Institute of Information Technology Allahabad, India);

Akhilesh Tiwari (IIIT Allahabad, India)

Session ID: W-6-3.4 **Time:** 1515–1530 hrs **Paper ID:** 1571041314

Machine Learning Approaches for Sensor Fault Mitigation

Kaythry Pandurangan (Anna University & SSN College of Engineering, India);

Vinu R (Dayananda Sagar University, Bengaluru, India);

Harini Shree V and Javed Roshan (Sri Sivasubramaniya Nadar College of Engineering, India)

Session ID: W-6-3.5 **Time:** 1530–1545 hrs **Paper ID:** 1571050512

Machine Learning in Laboratory Diagnosis

Ravi Kishore Kodali and Pradyum Venkata Mittadoddi (National Institute of Technology, Warangal, India);

Harshith Ranga (National Institute of Technology, India);

Lakshmi Boppana (National Institute of Technology, Warangal, India)

1530 – 1600 hrs Tea Break

W-1-4 & W-2-4 hrs NO SESSIONS

Session	W-3-4 Emerging Topics 13	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Orchid Jr 4211	
Chair(s)	Aishwarya Bandla	

Session ID: W-3-4.1 **Time:** 1600–1615 hrs **Paper ID:** 1571033723

A Study of Generating Exhaustive Cycles in Wireless Mesh Networks for Disaster Notification

*Takumi Matsumoto (Kogakuin University, Japan);
Masaaki Ohnishi (Nohmi Bosai, Japan);
Ryohei Banno (Hitotsubashi University, Japan);
Saneyasu Yamaguchi (Kogakuin University, Japan)*

Session ID: W-3-4.2 **Time:** 1615–1630 hrs **Paper ID:** 1571034485

Impact of Different Fading Scenario on TDMA-Hybrid NOMA

*Biswajit Ghosh (Indian Institute of Information Technology Kalyani, India);
Debasish Bera (IIIT Kalyani, Nadia & IIIT Kalyani, India)*

Session ID: W-3-4.3 **Time:** 1630–1645 hrs **Paper ID:** 1571033313

Optimized Power Allocation in Downlink NOMA With Imperfect Successive Interference Cancellation

*Soumik Biswas (Indian Institute of Information Technology Kalyani, India);
Debasish Bera (IIIT Kalyani, Nadia & IIIT Kalyani, India)*

Session ID: W-3-4.4 **Time:** 1645–1700 hrs **Paper ID:** 1571034329

Deep Q-Snake: An Intelligent Agent Mastering the Snake Game With Deep Reinforcement Learning

*Debjyoti Ray (Indian Institute of Information Technology, Allahabad & Indian Institute of Technology, Madras, India);
Arindam Ghosh and Muneendra Ojha (Indian Institute of Information Technology, Allahabad, India);
Krishna Pratap Singh (Indian Institute of Information Technology Allahabad, India)*

Day 2: 3 December 2024, Tuesday

Session	W-4-4 Emerging Topics 12	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Orchid Jr 4212	
Chair(s)	Lokesh Bheema Thiagarajan	

████████ **Session ID:** W-4-4.1 **Time:** 1600–1615 hrs **Paper ID:** 1571034522

Investigation of Bending Performance of Flexible Optoelectronic Synapse Based on ZnO

*Preeti Sakharam Lokhande (National Institute of Technology Calicut, India);
 Roshni Oommen (NIT CALICUT, India);
 Aswathi R Nair (National Institute of Technology Calicut, India)*

████████ **Session ID:** W-4-4.2 **Time:** 1615–1630 hrs **Paper ID:** 1571041832

N2N2N: A Clean Data Independent Speech Enhancement Approach With Modified cGAN

*Angkon Deb, Asaduzzaman NA, Rudra Roy, Asif Islam and Celia Shahnaz (Bangladesh University of Engineering and Technology, Bangladesh);
 Mohammad Saquib (UniversityTexas Dallas, USA)*

████████ **Session ID:** W-4-4.3 **Time:** 1630–1645 hrs **Paper ID:** 1571050728

Classical to Quantum Neural Network Transfer Learning Approach for Speech Emotion Recognition

*Sheikh Iftekhar Ahmed and Shaswata Mahernob Sarkar (Bangladesh University of Engineering and Technology, Bangladesh);
 Shaikh Anowarul Fattah (BUET, Bangladesh);
 Mohammad Saquib (UniversityTexas Dallas, USA)*

████████ **Session ID:** W-4-4.4 **Time:** 1645–1700 hrs **Paper ID:** 1571034325

Scientific and Technological Problems of Modeling Jointly Functioning Artificial and Bioenergy Agro-Ecological Systems

Viktor Gurieiev and Jiang Qin (Harbin Institute of Technology, China)

████████ **Session ID:** W-4-4.5 **Time:** 1700–1715 hrs **Paper ID:** 1571034468

An Evaluation of Machine Learning Algorithms for Predicting Closing Stock Prices in the Indian Stock Market

*Vivek Kumar Anand (NIIT University, India);
 Deeksha Chandawat (Karnavati University, India)*

Session	W-5-4 Emerging Topics 10	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Orchid Jr 4311	
Chair(s)	Aishwarya Bandla	

Session ID: W-5-4.1 **Time:** 1600–1615 hrs **Paper ID:** 1571048956

Translation of Air-Written Baybayin Using Optical Flow in Complex Background

Justine Angelo Ariel V. Villespin, Michael Joseph U. Magana and Cyrel O. Manlises (Mapua University, Philippines)

Session ID: W-5-4.2 **Time:** 1615–1630 hrs **Paper ID:** 1571041860

A Machine Learning-Based Integrated Energy and Water Management System for a Greenhouse

Honey Vhal Fiesta (University of the Philippines Diliman, Philippines);

Lew Andrew Tria (University of the Philippines - Diliman, Philippines)

Session ID: W-5-4.3 **Time:** 1630–1645 hrs **Paper ID:** 1571050805

Joint Angle and Rang Estimation With Low-Cost RIS-Assisted FDA Direction Finding System

Yuan Wang (Hainan University, China & School of Information and Communication Engineering, China);

Xianpeng Wang and Yuehao Guo (Hainan University, China)

Session ID: W-5-4.4 **Time:** 1645–1700 hrs **Paper ID:** 1571049820

Optimizing Network-Level Forensics With Optuna-Generated CNN Model

Wilson Lim Wee Shyan, Jason Yeo Joon Kiat, Buddy Ng Zheng Hao, Karen Goh Sian Mei, Alvin Ang Peng Chuan and Purnima Murali

Mohan (Singapore Institute of Technology, Singapore)

Session ID: W-5-4.5 **Time:** 1700–1715 hrs **Paper ID:** 1571038374

Swarm Intelligence Feature Selection and Possibilistic Fuzzy c-Means Approach for Enhancement of Classifier Performance in Detection of Diabetes From Microarray Gene

Dinesh Chellappan (KPR Institute of Engineering and Technology, India);

Harikumar Rajaguru (Bannari Amman Institute of Technology & ECE, India)

Day 2: 3 December 2024, Tuesday



Session	W-6-4 Emerging topics 11	[Parallel]
Date/Day	Wednesday, 4 December 2024	
Room	Orchid Jr 4312	
Chair(s)	Arif Hussain	

Session ID: W-6-4.1 **Time:** 1600–1615 hrs **Paper ID:** 1571054100

Scalable RFID-Based Automated Attendance Recording and Reporting System

Carmelo Diego Lopez and Jaybie A de Guzman (University of the Philippines Diliman, Philippines)

Session ID: W-6-4.2 **Time:** 1615–1630 hrs **Paper ID:** 1571041913

SigAuthUrdu: Signature Verification for Urdu Language

*Maninder Maan and Kabir Kapur (Thapar Institute of Engineering and Technology, Patiala, India);
Arun Pundir (Indian Institute of Technology, Roorkee, India)*

Session ID: W-6-4.3 **Time:** 1630–1645 hrs **Paper ID:** 1571034685

Sliding Window Gradient Sign Attack

Indrajeet Kumar Sinha, Naman Kapoor and Krishna Pratap Singh (Indian Institute of Information Technology Allahabad, India)

Session ID: W-6-4.4 **Time:** 1645–1700 hrs **Paper ID:** 1571048974

Smart Eyewear: African Lovebirds Classification Using Convolutional Neural Networks

*Jennifer J. Batacan (Mapua University, Philippines);
Vhal Pearson H. Chua (Mapua uuniversity, Philippines);
Cyrel O. Manlises (Mapua University, Philippines)*

Session ID: W-6-4.5 **Time:** 1700–1715 hrs **Paper ID:** 1571056269

RLTQC: Reinforcement Based Tabular Q-Learning for Cowry Game

*Harsha Putla (Indian Institute of Information Technology - Allahabad, India);
Krishna Pratap Singh (Indian Institute of Information Technology Allahabad, India);
P. Nagabhushan (Indian Institute of Information Technology, Allahabad, India)*

1730 hrs

End of TENCON 2024