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TECHNICAL PROGRAM & PARALLEL SESSIONS

(UPDATED 25/08/2025)



ICA 2025

The 9th International Conference on Instrumentation, Control and Automation (ICA) 2025

Wednesday – Friday, 27 – 29 August 2025

Holiday Inn Bandung Pasteur, Indonesia



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TECHNICAL PROGRAM

Day 1 (Wed, Aug 27, 2025) @ Holiday Inn Bandung Pasteur		
Time (WIB)	Activity	Location
09.00 – 15.00	Workshop in Medical Instrumentation “From Brainwaves to Neurotherapy: Advancing QEEG Neurofeedback Through Science, Innovation, and Collaboration “	Imperium 1
09.00 – 16.00	Workshop Series on Instrumentation, Control, and Automation for Future Indonesian Scientists and Engineers “Series #2: Western Archipelago”	Imperium 3
14.00 – 16.30	Welcoming and Registration for ICA Participants	Corridor

Day 2 (Thu, Aug 28, 2025) @ Holiday Inn Bandung Pasteur		
Time (WIB)	Activity	Location
07.15 – 08.00	Registration for those who have not registered on the Day 1	Ballroom
08.00 – 08.20	Opening Ceremony Rector of ITB Speech: Prof. Dr. Ir. Tatacipta Dirgantara, M.T. Dean Speech: Prof. Tirto Prakoso, S.T., M.Eng., Ph.D. General Chair Report: Dr. Ayu Gareta Risangtuni, S.T., M.T.	Ballroom
08.20 – 09.00	Plenary Talks 1 Prof. Dr. Mustafa Hani Khammash "Engineering Life: Designing Genetic Control Systems for Cell Therapy"	Ballroom
09.00 – 09.40	Plenary Talks 2 Prof. Ir. Dr. Rubita Sudirman "Implementation of Bio-Signal Monitoring Devices for Human Cognitive Function Evaluation"	Ballroom
09.40 – 09.55	COFFEE BREAK	Corridor
09.55 – 10.35	Plenary Talks 3 Prof. Karl Henrik Johansson "Observer Synthesis for Nonlinear Systems via Physics-Informed Learning"	Ballroom
10.35 – 11.15	Plenary Talks 4 Augie Widyotriatmo, S.T, M.T, Ph.D "Toward Robust Autonomous Systems: Sensing, Controls, State Estimation, Digital Twins, Cyber-Resilience, and Complex Interactions"	Ballroom
11.15 – 12.30	LUNCH BREAK	Restaurant

12.30 – 14.30	ICA Parallel Session A	Ballroom, Imperium 1, 2, 3
14.30 – 14.45	COFFEE BREAK	Corridor
14.45 – 16.45	ICA Parallel Session B	Ballroom, Imperium 1, 2, 3
16.45 – 17.45	Closing Ceremony and Awarding	Ballroom
17.45 – 19.45		
19.45 – 20.00	Gala Dinner General Chair Report: Dr. Ayu Gareta Risangtuni, S.T., M.T. Performance Medley Tari Tradisional	Ballroom
20.00 – 21.30	Dinner and Entertainment	Ballroom

Day 3 (Fri, Aug 29, 2025) @ Holiday Inn Bandung Pasteur		
Time (WIB)	Activity	Location
08.00 – 15.00	Social event: city sightseeing	Meeting and drop off point: Lobby

PARALLEL SESSIONS

Parallel Session A Room Imperium 1 (Automation)

Thu, Aug 28, 2025, 12.30 – 14.30 WIB

Time	Title	Authors
12.30 – 12.45	Estimating the Weekly of Tomatoes Using Robot Arm with Distributed Tactile Information	Alfa Noora Fithria; Muhammad Fidel Bintang Marich; Farah Aulia Sahirah; Leonardo Fajar Mardika; Rian Putra Pratama; Aris Munandar; Oka Mahendra; Amila Sofiah; Ananta Adhi Wardana; Muhammad Arifin
12.45 – 13.00	Smart Study Period Estimator Using Fuzzy Logic and GPA Data	Pin Panji Yapius; Selvi Lukman; Karenina Wong; Vincentius Cristian Zelda; Steven Jonathan; Jimmy Agustian Loekito
13.00 – 13.15	Gesture Matters: Pedestrian Gesture Recognition for AVs Through Skeleton Pose Evaluation	Alif Rizqullah Mahdi; Mahdi Rezaei; Natasha Merat
13.15 – 13.30	Landmark Point-Based Mobile Robot System with IoT Communication for Warehouse Environments	Intan Saragih; Eduardus Arjuna Herwian; Reinald Mariel; Rifqi Fathin Syiraz; Azam Zamhuri Fuadi; Angga Rusdinar

13.30 – 13.45	Rapid Changing Robotic Arm System Using Unmanned Vehicle and Fault Detection in Manufacturing Industry	Anarga Paritrana Widhi; Zulfikar Firmanto; Rimba Harits Hartanto
13.45 – 14.00	On the Use of Artificial Intelligent with Large Language Model as a Tool for Evaluating Quality of Hazard and Operability Study	Darmawan Ahmad Mukharro
14.00 – 14.15	Implementation of Joint Segmentation Semantic Understanding Method to Develop Autonomous Vehicle Driving Perception	Fauzand Mestakindo Erizal; Yul Yunazwin Nazaruddin; Vebi Nadhira; Aulia Rahma Jumardi
14.15 – 14.30	Autonomous Unmanned Aerial Vehicle (UAV) Navigation Using Soft Actor-Critic (SAC) Algorithm with a Deep Reinforcement Learning	Anggra Anwari; Prapto Tri Supriyo; Mohamad Khoirun Najib

Parallel Session A Room Imperium 2 (Instrumentation)

Thu, Aug 28, 2025, 12.30 – 14.30 WIB

Time	Title	Authors
12.30 – 12.45	Gender Differences in Muscle Endurance in Wall Climbing Activities: Analysis of Surface Electromyography (sEMG) Signals in Time Domain	Latifa Majesta Saputra; Hesty Susanti; Muhammad Hablul Barri; Liana Nafisa Saftari; Salsabila Aurellia; Annisa Rayina Putri
12.45 – 13.00	Muscle Fatigue and Blood Lactate Response to Running Speeds: a Frequency-Domain Surface Electromyography (sEMG) Analysis	Ashila Ghaitza Azzahra; Hesty Susanti; Liana Nafisa Saftari; Salsabila Aurellia; Sekar Ajeng Wihastuti Santoso
13.00 – 13.15	Camera Based Motion Tracking System with Perspective Correction for Treadmill Running: a Preliminary Study	Talita Sri Indrayuni; Hesty Susanti; Auralius Manurung
13.15 – 13.30	FPGA Based Ultrasonic System for Water Flow Detection	Lalu Febrian Wiranata; Narendra K Putra; Deddy Kuriniadi
13.30 – 13.45	Adaptive Thresholding-Based Computational Analysis of Porosity in SEM Images of Poly(methyl methacrylate)	Mutiara Rahmannisa; Laily Ade Oktaviana; Fathur Rahman; Maulid Purnawan; Dita Puspitasari
13.45 – 14.00	Comparative Analysis of Image Segmentation Methods for Porosity Evaluation of Wound Dressings Using Python and ImageJ	Thaffira Auli Putri Prasetyo; Laily Ade Oktaviana; Fathur Rahman; Rezicha Maulana Azazi; Dita Puspitasari

14.00 – 14.15	A Comparative Study of AI-Based SEM Image Processing for Automated Microstructure Analysis of Medical Electrode Materials Using U-Net, K-Means, and Otsu	Tivasha Keiko Nurliam; Laily Ade Oktaviana; Dita Puspitasari; Fathur Rahman
14.15 – 14.30	A Low-Cost Magnetic Flux Leakage Instrumentation on Industrial Pipes	Sisdarmanto Adinandra

Parallel Session A Room Imperium 3 (Instrumentation)

Thu, Aug 28, 2025, 12.30 – 14.30 WIB

Time	Title	Authors
12.30 – 12.45	Deep Learning-Based Segmentation for Porosity Analysis of PMMA from SEM Images	Ghefira Shofa Imriane; Laily Ade Oktaviana; Fathur Rahman; Maulid Purnawan; Dita Puspitasari
12.45 – 13.00	Quality Assurance of Field Temperature Data from Weather Stations: A Case Study of MissForest Imputation	Irvan Budiawan; Haryas Subyantara Wicaksana; Estiyanti Ekawati; Deddy Kurniadi
13.00 – 13.15	The Application of Ecological Acoustic Indices to Identify the Dominant Sound Components in Soundscape Recording	Anugrah Sabdono Sudarsono; Sentagi Utami; Peni Tyas Widyati; Miranti Indar Mandasari
13.15 – 13.30	An Experiment on Ultrasonic Vortex Flowmeter for Estimation of Air Flow Rate in Pipe	Irsan Ferdian Agung Sudrajat; Lalu Febrian Wiranata; Narendra K Putra; Deddy Kurniadi
13.30 – 13.45	Application of Surface Electromyography for Measuring Muscle Fatigue in Gliding Athletes	Ghazi Satriando Humaid Junior; Rengganis Ridwan Heru Santoso; Nia Sri Ramanian; Narendra K Putra
13.45 – 14.00	Design of the s-Priso Tool for SF ₆ Gas Refilling at ULTG Garut	Akhmad Fauzi Ikhsan; Hasan Sopian; Helfy Susilawati; Ginaldi Ari; Ayub Subandi; Rifki Nurpalah Nurpalah
14.00 – 14.15	A Shallow Semantic Segmentation Network for Forest Fire Detection Based on Unmanned Aerial Vehicle Imagery	Mohd Asyraf Zulkifley; Akhyar Akhyar; Siti Raihanah Abdani
14.15 – 14.30	Design of a Voltage Control System for a Microcontroller-Based Reconfigurable Metasurface Prototype	Hendrikus Valentino Nariyari; Ashif Aminulloh Fathnan; Muhammad Zakiyullah Romdlony; Basith Abdurrohman Asy'ari; Heru Syah Putra; Eko Pristianto

Parallel Session A Room Ballroom (Instrumentation)

Thu, Aug 28, 2025, 12.30 – 14.30 WIB

Time	Title	Authors
12.30 – 12.45	On-Site Fluid Pressure Measurement Device for Vascular Flow Evaluation	Fara Azzahra Dinata; Hadyan Fawwaz Anshori; Muhammad Salman Al Farisi; Muhammad Iqbal; Narendra K Putra
12.45 – 13.00	Electric Vehicle Battery Balancing Based on Battery Management Analysis and Driving Dynamics	Mairizwan Mairizwan; Endra Joelianto
13.00 – 13.15	Development of Image Analysis Methods for Quantifying Wrinkles on the Face Due to Changes in Expression	Vebi Nadhira; Rahmat Ilahi Siregar; Suprijanto Suprijanto
13.15 – 13.30	EEG Signal Classification of Hand Grasping States as Part of the Development of an Open Device Brain-Computer Interface	Azalea Jedidah Lambe; Suprijanto Suprijanto; Ayu Gareta Risangtuni
13.30 – 13.45	Effects of Load Positioning on Muscle Fatigue During Hiking: Electromyography and Lactate Response Analysis	Muhammad Anugra Rizky Rambe; Hesty Susanti; Liana Nafisa Saftari; Salsabila Aurellia; Adinda Shal Sabillah Kuncahyo; Aydin Muhammad Hafizh
13.45 – 14.00	ECG Arrhythmia Detection Using Complete Ensemble Empirical Mode Decomposition with Adaptive Noise (CEEMDAN)	Grace Amelia; Annisa Humairani; Tito Waluyo Purboyo; Dziban Naufal
14.00 – 14.15	Neuropsychology of Attention and Emotion Based on EEG Signals Using Graph Convolutional Networks and Gated Recurrent Units	Firda Rahmasari; Esmeralda Contessa Djamal; Melina Melina
14.15 – 14.30	Efficient Short-Term Weather Forecasting with Random Forests: a Study on Limited Dataset	Selvi Lukman; Jimmy Agustian Loekito; Donny Stefanus Pelupessy; Shin Min Cheol; Zefanya Yulius Kurnia; Muhammad Nabil

Parallel Session B Room Imperium 1 (Control)

Thu, Aug 28, 2025, 14.45 – 16.45 WIB

Time	Title	Authors
14.45 – 15.00	Robust Consensus-Based Formation Control with Safety Guarantee	Siti Fanisa; Harry Septanto; Muhammad Zakiyullah Romdlony; Bambang Riyanto

		Trilaksono; Djati Wibowo Djamari
15.00 – 15.15	A Machine Learning Approach to PID Tuning in Gantry Crane Simulations Using Support Vector Regression	Beautysya M. E. Kountul; Winda Astuti; Lita Lidyawati Lita
15.15 – 15.30	Challenges and Issues for Integrated Internet of Things (IoT) of Emotional Awareness Through Chat GPT Effectiveness: Review Paper	Tutun Juhana; Selvi Lukman; Ushik Shrestha Khwakhali
15.30 – 15.45	Predictive Modelling of Boiler Feed Pump Scoop Tube Opening Using ANN: a Comparative Study of LSTM, MLP and NARX	Matius Nata Pakpahan; Subhan Hasisi; Anton Hidayat; Anugrah Agung Saputra
15.45 – 16.00	Evaluation of Cohen-Coon and Ziegler-Nichols PID Tuning in Sensorless Speed Control of Induction Motors	Christian V Halim; Katherin Indriawati
16.00 – 16.15	Forklift Operational State Clustering Using Smartphone Accelerometry, Fast Fourier Transform, and Unsupervised Machine Learning	Dafa Rezy Pratama; Farhan Fadhlurrahman; Surojo Surojo; Handoko Handoko; Septian Arif Firdaus; Azizan As'ary; Agustinus Winarno; Irfan Bahiuddin
16.15 – 16.30	Implementation of Unscented Kalman Filter Using Indoor Positioning System for Automated Guided Vehicle	Muhammad Tristan Syazwana El Syaff; Muhammad Zakiyullah Romdlony; Arif Abdul Aziz; Muhammad Azhar Ismail; Fitri Yakub
16.30 – 16.45	Trajectory Tracking and Point Stabilization for Package Delivery Using a Quadrotor with Nonlinear Model Predictive Control	Luthfi Adi Nugraha Nugraha; Sulthan Naufal Affan; Sami Fauzan Ramadhan; Augie Widyotriatmo

Parallel Session B Room Imperium 2 (Control)

Thu, Aug 28, 2025, 14.45 – 16.45 WIB

Time	Title	Authors
14.45 – 15.00	Comparative Analysis of Machine Learning Algorithms for Traffic Prediction in Intelligent Transportation Systems	Peri Turnip; Endra Joelianto; Faqihza Mukhlis; Vebi Nadhira; Arjon Turnip; Azka Muji Burohman
15.00 – 15.15	Digital Twin of Autonomous Vehicle Using Time-Varying Vehicle Parameters Estimation	Shinta Rohmatika Kosmaga; Augie Widyotriatmo; Estiko Rijanto

15.15 – 15.30	Explainable Machine Learning for Predicting Shear Stress Behavior in Magnetorheological Fluids	Farhan Fadhlurrahman; Raihan Nur Fadhila; Kasma Diana Saharuddin; Norhiwani Mohd Hapipi; Saiful Amri Mazlan; Irfan Bahiuddin
15.30 – 15.45	Vision-Based Quadrotor Tracking Control with Horizontal Field-of-View Constraint Using Lyapunov-Barrier Function	Javier Dustin Tambunan; Naufan Aurezan Mulyawan; Wilbert Ivander Nioman; Augie Widyotriatmo
15.45 – 16.00	Collision-Free Navigation and Formation Control of Multi-Agent System with Improved Artificial Potential Field	Pramoda Prabaswara; Izma Alhazmi Herdian; Estiyanti Ekawati; Faqihza Mukhlis
16.00 – 16.15	EMG-Based Hand Gesture Recognition for the Soft Robotic Glove Command	Taufik Syahputra, Ayu Gareta Risangtuni; Suprijanto
16.15 – 16.30	Analysis of the Steering Motor Current Characteristics in Micro-Electric Vehicles Under Different Road Conditions	Diky Zakaria; Diana Eka Putri; Taufik Ibnu Salim; Bambang Wahono
16.30 – 16.45	Adaptive PID Speed Control for BLDC Motors in Autonomous Electric Vehicles	Dewi Indriati Hadi Putri; Tiara Yusti Dinanti; Diky Zakaria; Taufik Ibnu Salim; Bambang Wahono

Parallel Session B Room Imperium 3 (Control)

Thu, Aug 28, 2025, 14.45 – 16.45 WIB

Time	Title	Authors
14.45 – 15.00	An Integrated Feedforward-Feedback Exposure Control System for Robust Lane Detection	Sulthan Naufal Affan; Fathih Dhiya Az Zhafran; Marvin Gideon Purba; Augie Widyotriatmo
15.00 – 15.15	Robust Control for Constant-Current Discharge Under Li-Ion Battery Degradation	Muhamad Arya Arya Saputra; Mohammad Ilham Hazetra; Reza Fauzi Iskandar; Endra Joelianto; Thomas Budiarto
15.15 – 15.30	Design of Resilience Control System Against Cyber-Attacks on a Three Tank System with Lyapunov Krasovskii Approach	Wibisana Wisnu Putra Nugroho; Bintang Adra Sapardiman; Kemal Fathurrahman; Endra Joelianto
15.30 – 15.45	Attention-Based LSTM for Remaining Useful Life Estimation in Electric BLDC Motors with Stator Inter-Turn Faults	Sumastriendi Arifar Sindapati; Imron Rosyadi; Yul Yunazwin Nazaruddin; Azka Muji Burohman

15.45 – 16.00	Modelling and Controller Design Using NARX and Nonlinear MPC Based on Genetic Algorithm for Drum-Boiler Level Control System	Raul Raditya Muhammad; Yul Yunazwin Nazaruddin; Azka Muji Burohman
16.00 – 16.15	Data-Driven Model Reduction for MIMO Wind Farm Systems via Right-Tangential Interpolation	Azka Muji Burohman; Aulia Rahma Jumardi; Yul Yunazwin Nazaruddin
16.15 – 16.30	Control Design for BLDC Motors Under Unbalanced Load Conditions	Carlitos Eryan; Imron Rosyadi; Yul Yunazwin Nazaruddin; Azka Muji Burohman

Parallel Session B Room Ballroom (Control)

Thu, Aug 28, 2025, 14.45 – 16.30 WIB

Time	Title	Authors
14.45 – 15.00	Implementation of Type-1 Fuzzy Logic Based Temperature Controller for Heat Exchanger	Mohd Ismail Yusof; Noor Azzah Abdul Manap; Mohd Aliff Afira Sani; Azavitra Zainal; Mohd Zulkhairi Mohd Zan; Narendra K Putra
15.00 – 15.15	Safety Control Design for Non-Holonomic Mobile Robot Navigation Using Control Lyapunov-Barrier Function with a Path Prediction Algorithm	Ariq Shaquille Baswara; Muhammad Zakiyullah Romdlony; Harry Septanto; Norhaliza Abdul Wahab; Muhammad Azhar Ismail
15.15 – 15.30	Embedded System for Early Sleep Apnea Detection Based on Mel-Frequency Cepstral Coefficient (MFCC) and Deep Learning Technique	Teresa Tendeas; Charles Chrisstianto; Valerie Liang Alianto; Muhammad Nurul Puji; Syarifah Diana Permai; Rahmi Yulia Ningsih
15.30 – 15.45	Robust Weighted Mixed-Sensitivity Control to Mitigate Intermittency and Partial Shading Condition in a Stand-Alone Photovoltaic System	Nayaka Zahran Raeswara; Dandy Arif Rahmadi; Wilbert Ivander Nioman; Reza Fauzi Iskandar; Endra Joelianto; Vebi Nadhira
15.45 – 16.00	Model Predictive Control with Safety Guarantee for Moving Obstacle Avoidance of Mobile Robots	Michael Andrianto Gunarso; Tua Agustinus Tamba
16.00 – 16.15	Performance Evaluation of Deep Learning Super Resolution Using ESRGAN on TEM Waffle Grating Standard Samples	Jazuli Rahmat; Damar Rastri Adhika; Suprijanto Suprijanto
16.15 – 16.30	Markov-Based Degradation-Aware Predictive Control on Subsea Safety System	Muhammad Hilmi; Jørn Vatn; Mary Ann Lundteigen