



2nd International Conference on Innovations in Mechanical, Robotics, Computing and Biomedical Engineering
ICIMRBE' 26
(Hybrid)

IEEE Kerala Section

4, 5, 6 August 2026 | Adi Shankara Institute of Engineering and Technology, Kalady, Ernakulam

Track:	Healthcare & Biomedical Systems			
DAY 1 - ONLINE				
Date	Venue	Time	Paper ID	Paper Title
4th August 2026	Online	1:00 PM – 1:15 PM	168	Mitigating Power-Line Interference and Motion Artifacts in Surface EMG Diagnostics: A Robust Random Forest Pipeline for Neuromuscular Disorder Classification
		1:15 PM – 1:30 PM	228	Vision-Driven Assistive Communication and Control Using Electrooculography (EOG)
		1:30 PM – 1:45 PM	247	Hierarchical Feature Fusion of Pretrained DenseNet Architectures with Machine Learning Framework for Acute Lymphoblastic Leukemia Classification
		1:45 PM – 2:00 PM	296	A Multimodal Approach to Parkinson’s Disease Classification Using Handwriting Dynamics
		2:00 PM – 2:15 PM	301	Signal Processing Techniques For Erg-Based Retinal Disorder Diagnosis: A Comparative Analysis
		2:30 PM – 2:45 PM	482	From Heart Sounds to Clinical Insights: Multimodal Cardiovascular AI for Early Prediction and Healthcare Decision Support
		2:45 PM – 3:00 PM	487	Comparison of Attention-Based and Spatio-Temporal Models for Contactless Heart Rate and Stress Estimation
		3:00 PM – 3:15 PM	748	Employ Edge and Cloud Computing for Low-Latency Multimedia Streaming: Architecture for Real-Time Video Delivery
		3:15 PM – 3:30 PM	582	Unveiling Identity with Siamese Network: Ear- biometrics for Person Identification
		3:30 PM – 3:45 PM	490	Design Optimization of an HSG Cannula for Improved Contrast Flow Stability
DAY 2 - OFFLINE				
Date	Venue	Time	Paper ID	Paper Title
5th August 2026	Mini Seminar Hall (ECE)	1:30 PM - 1:45 PM	124	Chest Motion Artifact Suppression in Unshielded Magnetocardiography Using Magneto-Impedance Sensors and Accelerometer-Based Adaptive Filtering
		1:45 PM - 2:00 PM	140	Benchmarking Quantum Kernel Methods Against Classical Machine Learning for Multi-Morbidity Risk Prediction
		2:00 PM - 2:15 PM	123	Adaptive EMG Signal Denoising Using Gray Wolf Optimized Variational Mode Decomposition
		2:15 PM - 2:30 PM	30	Lightweight CBAM-U-Net with Residual Concatenation for Left Ventricular Segmentation in Echocardiography: A Comparison with DeepLabv3 and FCN
		2:30 PM - 2:45 PM	351	Hydrafit- A portable smart bottle for real-time liquid quality monitoring and sterilization for safe baby feeding application.
		2:45 PM - 3:00 PM	445	A Comprehensive Review on the Scope of Eye Tracking on Early Autism Detection
		3:00 PM - 3:15 PM	471	Enhancing Fall Detection Accuracy Using Fine-Tuned Pretrained Models and Data Resampling Techniques
DAY 2 - ONLINE				
Date	Venue	Time	Paper ID	Paper Title
5th August 2026	Online	1:00 PM – 1:15 PM	501	A Real-Time IoT-Enabled Wearable System for Knee Rehabilitation Using IMU-Based Angle Estimation and Force Sensor Analytics
		1:15 PM – 1:30 PM	517	3D Printed Optoelectronic Device for Sweat Uric Acid Measurement
		1:30 PM – 1:45 PM	518	Item Response Theory Model For Determination Of Diabetic Kidney Function Using Skin Parameter
		1:45 PM – 2:00 PM	523	Iron Oxide Nanoparticles based Strip for Heavy Metal Detection
		2:00 PM – 2:15 PM	530	Zinc Oxide Nanoparticle Synthesis using Plant Extract for Enhanced Antimicrobial Efficacy
		2:15 PM – 2:30 PM	534	Fall Detection System for Elderly Patients
		2:30 PM – 2:45 PM	605	BioPerspiration - A Wearable Sweat-Based Biosensing Platform for Physiological Monitoring
		2:45 PM – 3:00 PM	683	SimDNA: A Software-Based Simulation Framework for DNA Computing and Molecular Logic Systems
		3:00 PM – 3:15 PM	447	Ocular Disease Recognition Using Few-Shot Prototypical Networks with Explainable AI
		3:15 PM – 3:30 PM	650	A Smart Insole for Early Detection of Diabetic Foot Risk Using Pressure and Thermal Analysis

DAY 3 - OFFLINE				
Date	Venue	Time	Paper ID	Paper Title
6th August 2026	Mini Seminar Hall (ECE)	9:30 AM - 9:45 AM	489	Improving Low-Light Colonoscopy Image Quality with MIRNet for Enhanced Diagnostic Accuracy
		9:45 AM - 10:00 AM	558	CCL Primary Compensation Topology with High Efficiency Inductive Power Transfer Recharging System for Cardiac Pacemakers
		10:00 AM - 10:15 AM	585	Exploring Quartered Spectral Envelope as an Acoustic Biomarker for Classifying Asthmatic and Healthy Individuals
		10:15 AM - 10:30 AM	602	A Novel CBAM-Integrated EfficientNet-B5 with FPN for Improved Skin Lesion Classification
		10:30 AM - 10:45 AM	162	EEG-Based Imagined Speech Classification Using Statistical Features and Machine Learning Models
		10:45 AM - 11:00 AM	756	Skin Lesion Image Classification Using Transformers and Meta Data Fusion Approach
		11:00 AM - 11:15 AM	599	EEG-Based Affective State Classification Using Autoencoder-Driven Feature Reduction
		11:15 AM - 11:30AM	645	Automated Acute Lymphoblastic Lukemia Detection And Classification Using Deep Learning And Clinical Integration
		11:30 AM - 11:45 AM	23	Endoscopic Colorectal Polyp Detection Using a Directed Acyclic Graph Convolutional Neural Network
DAY 3 - ONLINE				
Date	Venue	Time	Paper ID	Paper Title
6th August 2026	Online	9:30 AM – 9:45 AM	653	A Compact Patch Antenna with modified ground structure for wideband operation
		9:45 AM – 10:00 AM	659	Hybrid Predictive Analytics Framework for Student Stress Monitoring and Dropout Prevention in Higher Education
		10:00 AM – 10:15 AM	662	Early Cancer Detection Based on Environmental Pollution Factors Using a Graph Neural Network–LSTM Hybrid Model
		10:15 AM – 10:30 AM	667	NeuroCARE: Pilot Study on Customized Sole Therapeutic Device for Peripheral Neuropathy with Vibration Acupressure, Photo Biomodulation, and Oxygen Enrichment
		10:30 AM – 10:45 AM	676	Quantum Contrastive Representation Learning Model for Label Efficient Medical Image Classification
		10:45 AM – 11:00 AM	677	Bio Inspired Spiking Transformer Network for Energy Efficient Medical Image Feature Encoding
		11:00 AM – 11:15 AM	690	Advancing ASD Diagnosis with Deep Neural Networks: Challenges in Multimodal Data Fusion and Clinical Interpretability
		11:15 AM – 11:30 AM	739	Simulation Based Personalized Pancreatic Digital Twin for Type 1 Diabetes Management Using Machine Learning
		11:30 AM – 11:45 AM	689	Deep Learning–Driven Autism Spectrum Disorder Detection: Addressing Data Scarcity, Bias, and Model Generalization Challenges
		11:45 AM – 12:00 AM	135	An Adaptive Deep Learning Framework for Early Seizure Forecasting from EEG Signals

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 IEEE Kerala Section				
Track	Dynamics, Control, Automation & Intelligent Robotics			
DAY 1- OFFLINE				
Date	Venue	Time	Paper ID	Paper Title
4th August 2026	Robotics Seminar Hall	1:30 PM - 1:45 PM	260	Automatic Garbage Compaction: An IoT-Enabled Smart Waste Compression System
		1:45 PM - 2:00 PM	535	Machine Learning Based Firewall for Real-Time Intrusion Detection in IoT Networks using FPGA
		2:00 PM - 2:15 PM	531	AI-Driven DDoS Detection and Explainable Response System
		2:15 PM - 2:30 PM	573	Accident Alert System: An Edge AI-Based Explainable Mobile System for Real-Time Accident Detection and Emergency Response
		2:30 PM - 2:45 PM	595	ROBOFARMGRID: INTELLIGENT MULTI-ROBOT SYSTEM FOR TARGETED CROP CARE AND HARVESTING
		2:45 PM - 3:00 PM	608	Development of a Distributed 26-DoF Realistic Humanoid Facial Robot
		3:00 PM - 3:15 PM	632	LUMI: A Full-Stack Social Robotics Framework Integrating Distributed Dual-Controller Processing with Generative AI and Dynamic Facial UI
		3:15 PM - 3:30 PM	321	NitPhoKal Agro Sense Nexus Prime: a system to aid agriculture through AI, Embedded and IoT technologies
		3:30 PM-3:45 PM	271	IntrusionTrace: Hybrid Intrusion Detection System for Wireless Sensor Networks
		3:45 PM - 4:00 PM	52	Coordinated Multi-AgriBot Architecture with Real-Time Data Sharing for Precision Chilli Crop Automation
DAY 2-OFFLINE				
Date	Venue	Time	Paper ID	Paper Title
5th August 2026	Robotics Seminar Hall	9:30 AM - 9:45 AM	758	A Reduced-Switch Asymmetrical Cascaded Multilevel Inverter for Practical 51-Level and 81-Level Renewable Energy Systems
		9:45 AM - 10:00 AM	693	LiDAR-Based Autonomous Surveillance Robot with Selective Authorization Logging Mechanism (SALM)
		10:00 AM - 10:15 AM	694	Guide Lab Assistance Droid(G.L.A.D)
		10:15 AM - 10:30 AM	697	Versa Nova: A Modular 6-DOF Underwater ROV with Dynamic Buoyancy Control for Inspection and Emergency Applications
		10:30 AM - 10:45 AM	674	AgriTwin: A Multi-Agent Digital Twin Framework with Deep Reinforcement Learning for Resource-Aware Precision Agriculture
		10:45 AM - 11:00 AM	682	DELIVERO BOT: A ROS2-Based Autonomous Indoor Delivery Robot Using LiDAR and SLAM for Campus Environments
		11:00 AM - 11:15 AM	695	Design and Development of a Micro-ROS Based Semi-Autonomous Quadruped Robot
		11:15 AM - 11:30 AM	692	A Voice-Assisted Wearable Navigation System Using LiDAR and Ultrasonic Sensors for Visually Challenged Users
		11:30 AM - 11: 45 AM	87	AOSP-Based Infotainment Systems on Embedded Platforms: A Review
		11:45 AM - 12:00 PM	83	Autonomous Industrial Safety Surveillance Rover for Real-Time Fire and Gas Hazard Detection
DAY 2- ONLINE				
Date	Venue	Time	Paper ID	Paper Title
5th August 2026	Online	9:30 AM - 9:45 AM	243	IoT-ENABLED ALERT AND THREAT MONITORING SYSTEM (I-ATM)
		9:45 AM - 10:00 AM	281	FedDroneRL Algorithm for Intelligent Drone Environmental Monitoring
		10:00 AM - 10:15 AM	359	Predictive Energy-Aware Path Planning for Autonomous Robots Using Deep Reinforcement Learning
		10:15 AM - 10:30 AM	381	A Sustainability-Aware Self-Supervised Contrastive Learning Framework for Low-Annotation Remote Sensing Image Analysis
		10:30 AM - 10:45 AM	527	Occlusion-Avoidant Visual Servoing Using Reinforcement Learning Based Integral Terminal Sliding Mode Control for a 5-DOF Robotic Manipulator
		10:45 AM - 11:00 AM	505	Smart Cattle Management: An Automated Monitoring and Control System with IoT Integration
		11:00 AM - 11:15 AM	525	Safe and Robust Human-Robot Collaboration via Reinforcement Learning and Fixed-Time Sliding Mode Control
		11:15 AM - 11:30 AM	499	EMG Signal Gesture Recognition Using Deep Learning: Leveraging Conv1D, Bi-directional GRU, and Self-Attention Mechanisms
		11:30 AM - 11:45 AM	655	Multi-Agent Monte Carlo Tree Search for Cooperative UAV Exploration

DAY 3- ONLINE				
Date	Venue	Time	Paper ID	Paper Title
6th August 2026	Online	9:30 AM - 9:45 AM	564	A Dual-Representation Consistency Framework for Reliable EEG-Based Emotion Recognition
		9:45 AM - 10:00 AM	596	Sustainable Smart Irrigation Using Hybrid Machine Learning Models and IOT-Based Soil Moisture Monitoring
		10:00 AM - 10:15 AM	603	Designof High performance Voltage and Current Reference circuit for Intelligent Sensor applications
		10:15 AM - 10:30 AM	606	Geo-Adaptive Dynamic Pricing Framework for Real-Time Road Usage Charging
		10:30 AM - 10:45 AM	685	Bio Inspired Swarm Quantum Optimization Framework for Large Scale Internet of Things Coordination
		10:45 AM - 11:00 AM	743	Enhancement of 5G Wireless Communication Networks: Integrating Machine Learning to Optimize Power Consumption and Network Performance
		11:00 AM - 11:15 AM	392	VITALBEAT-SAFEGUARD: A MACHINE LEARNING–DRIVEN REAL TIME FITNESS HEALTH MONITORING AND EMERGENCY DETECTION SYSTEM
		11:15 AM - 11:30 AM	686	Digital Twin Assisted Self Healing Architecture for Resilient Industrial Internet of Things Systems

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Track:	Data Science, Machine Learning & AI Applications				
DAY 1- OFFLINE					
Date	Venue	Time	Paper ID	Paper Title	
4th August 2026	EEE Seminar Hall	11:00 AM - 11:15 AM	186	SmartAgri AI: An IoT-Enabled Framework for Crop and Fertilizer Recommendation	
		11:15 AM - 11:30 AM	193	Autonomous Multi-Agent CloudOps for Real-Time Health, Storage and Cost Optimization	
		11:30 AM - 11:45 AM	432	GlucoFusion: An AI-Powered Non-Invasive Glucose Monitoring System Using Multi-Modal Sensor Fusion	
		11:45 AM - 12:00 PM	540	Hybrid Recommender Framework with Adaptive Temporal Modeling Using Bayesian Optimization on Bibliographic Data Clusters	
		12:00 PM - 12:15 PM	639	An NLP-Based Chatbot System for Automated Grievance Classification and Management	
		12:15 PM - 12:30 PM	643	POS Data Analytics System for Sales Trend Analysis and Inventory Optimization Using MQTT, MapReduce, and PySpark	
		12:30 PM - 12:45 PM	757	HalluChain: Measuring and Controlling Cascade Hallucination Propagation in Multi-Agent LLM Pipelines	
		12:45 PM - 1:00 PM	636	Smart Neonatal Incubator Monitoring System Using AI and IoT for Enhanced Infant Care	
DAY 1- ONLINE					
Date	Venue	Time	Paper ID	Paper Title	
4th August 2026	Online	11:00 AM - 11:15 AM	77	Ensemble Learning-Based Approach for Proactive Hypoxia Detection in Critical Care Settings	
		11:15 AM - 11:30 AM	146	Structured Deep Neural Architectures for Large-Scale Datasets in Heart Disease Prediction	
		11:30 AM - 11:45 AM	153	Attention-based Inception V3 for Identification of Sulphur Fumigation in Copra	
		11:45 AM - 12:00 PM	154	MF-MobileNetV2: Efficient Facial Expression Recognition using multi-fidelity Hyperparameter Optimization	
		12:00 PM - 12:15 PM	159	Med-AI Nexus: An Intelligent Healthcare Appointment Scheduling and Medicine Availability Optimization System	
		12:15 PM - 12:30 PM	166	Federated Radiomics Learning for Privacy-Preserving Differentiation of Duchenne vs Becker Muscular Dystrophy on Multi-Center MRI: Comparison with Centralized CNNs and SVM	
		12:30 PM - 12:45PM	160	Panic Pin-Enabled ATM Security System with Real-Time Silent Alerts	
		12:45 PM - 1:00PM	408	A Comparative Study of Monolithic and Hybrid Architectures for Secure Natural Language–Driven Data Visualization	
DAY 2- OFFLINE					
Date	Venue	Time	Paper ID	Paper Title	
5th August 2026	EEE Seminar Hall	9:30 AM – 9:45 AM	151	A Hybrid Feature Selection Framework for High-Dimensional Data Using Embedded and Deep Learning Techniques	
		9:45 AM – 10:00 AM	169	Cross-Attention Fusion Based Multimodal Vital Signal Anomaly Detection Using Deep Learning	
		10:00 AM – 10:15 AM	187	Smart Campus Navigation Using Augmented Reality Based on Wi-Fi Fingerprinting	
		10:15 AM – 10:30 AM	201	Materna: AI-Driven Maternal Risk Stratification and Clinical Decision Support System	
		10:30 AM – 10:45 AM	438	A YOLOv8n-LSTM-Based Spatiotemporal Computer Vision Framework for Rehabilitation Movement Assessment	
		10:45 AM– 11:00 AM	304	An Ontology-Driven Semantic Framework for Knowledge Representation and Retrieval in Vrikshayurveda	
		11:00 AM – 11:15 AM	764	Secure, Intelligent, and Sustainable AI-Driven Frameworks for Cyber-Physical Systems in Healthcare, Cloud, and IoT Environments	
		AFTERNOON SESSION			
		1:30 PM – 1:45 PM	129	An AI-Driven Smart Medication Adherence Monitoring System with IoT Validation and Caregiver-Aware Predictive Analytics	
		1:45 PM – 2:00 PM	206	SPARC- Substation Safety System with PPE Enforcement and Enhanced Safety Mechanisms	
		2:00 PM – 2:15 PM	456	Image Dense Description Using Multimodal Transformers: A Survey and Analysis	
		2:15 PM – 2:30 PM	463	Threat Modelling Awareness and Compliance Practices in AI-Driven FinTech Systems: An Empirical Analysis	
		2:30 PM – 2:45 PM	570	Automated Leaf Detection and Segmentation for Plant Phenotyping with PlantCV	
		2:45 PM – 3:00 PM	696	Context-Aware Sign Language Interpreter using Multimodal Deep Learning and Real-Time Feature Fusion	
		3:00 PM – 3:15 PM	701	Confidence-Calibrated Span-Level Spoiler Detection for Movie Reviews	
		3:15 PM – 3:30 PM	702	Explainable AI for Multi-Disease Detection using Medical Images	
		3:30 PM – 3:45 PM	776	An Explainable Federated Domain Adaptation Framework for Transparent Non-IID Learning	

DAY 2- ONLINE				
Date	Venue	Time	Paper ID	Paper Title
5th August 2026	Online	1:30 PM - 1:45 PM	317	Convergence in Controlled Environments: A Multi-Modal Framework Integrating Deep Learning, Bio-Sensing, and IoT-Cloud Systems for Autonomous Plant Care
		2:00 PM - 2:15 PM	418	A Cross-Chain Interoperable Blockchain Framework for IIoT: Designing Tamper-Proof Architectures to Ensure Industrial Data Integrity and Security
		2:15 PM - 2:30 PM	439	Real-Time Personal Protective Equipment Recognition in Work Environments Using YOLO
		2:30 PM - 2:45PM	576	AUTOMATED BRAIN TUMOR DETECTION & CLASSIFICATION FROM MRI USING FINE-TUNED EFFICIENTNET-B2 CNN
		2:45 PM - 3:00PM	623	Flood Susceptibility Mapping Using Deep Spatio-Temporal Networks
		3:00 PM - 3:15 PM	762	A Cross Vision Transformer Model for Multi-Class Kidney Tumor Classification Using Medical Imaging
		3:15 PM - 3:30 PM	577	HCT-Med: A Cross-Attention Based CNN–Transformer Framework for Multi-Modal Medical Image Analysis
		3:30 PM - 3:45 PM	209	A Content-Aware Intelligent Safety Framework for Automatic Emergency Alerting
DAY 3- ONLINE				
Date	Venue	Time	Paper ID	Paper Title
6th August 2026	Online	9:30 AM - 9:45 AM	32	Navigating Urbanization: Microeconomic Household Decisions and Predictive Modeling in Slum Formation
		9:45 AM - 10:00 AM	33	Ancient Networks in Flux: Environmental Rhythms and Human Connectivity in Arid Landscapes
		10:00 AM - 10:15 AM	35	Community-Centric Waste Governance Analytics: Assessing Socio-Environmental Externalities from Built-Environment Residual Streams
		10:15 AM - 10:30 AM	302	Efficient Machine Learning-Based Backorder Prediction Using Optimized Feature Selection in Supply Chain Management
		10:30 AM - 10:45 AM	649	NeuroStore: An Intelligent Framework for Efficient Multimedia Data Storage and Retrieval
		10:45 AM - 11:00 AM	763	A Hybrid CNN-ViT Model for Intelligent Supply Chain Network Optimization and Demand Forecasting
		11:05 AM - 11:15 AM	14	ElevateU: A Personalized Digital Learning and Career Guidance Platform
		11:15 AM - 11:30 AM	616	Blockchain-Integrated Smart Ration Distribution and Leak Detection Framework

Track:	Cybersecurity, Privacy & Trust in CPS/AI Systems			
DAY 2- ONLINE				
Date	Venue	Time	Paper ID	Paper Title
5th August 2026	Online	9:30 AM - 9:45 AM	102	Recall-Prioritized Anomaly Detection in Cloud Microservices using Unsupervised Transformer Autoencoders
		9:45 AM - 10:00 AM	229	WaveChat: A Hybrid Protocol-Based Framework for Infrastructure-Free Offline Communication
		10:15 AM - 10:30 AM	415	Hybrid Deep Learning for Cardiovascular Disease Prediction Using SMOTE, CNN, and Transformer Architectures
		10:30 AM - 10:45 AM	545	CRYPTORIDEX- Secure Blockchain-Based Framework for Vehicular Accident Data Verification and Insurance Claim Management
		10:45 AM - 11:00 AM	587	Blockchain Integrated Intrusion Detection System for Advanced Cyber Physical Networks
		11:15 AM - 11:30 AM	592	Financial Fraud Prevention in Online Payment Systems Using a Graph Neural Network–LSTM Hybrid Model
		11:30 AM - 11:45 AM	741	Enhancement for Autonomous Vehicle Navigation Systems and Real-Time Image Processing by the Machine Learning algorithms
		11:45 AM - 12:00 PM	745	Industrial Automation Applications of 3D Image Processing using Stereo Vision Technology: Improving Robotic Manipulation Capabilities