# BRIEF PROGRAM SCHEDULE | IEEE CS BDC Summer Symposium 2025

## Day 01: 18th July, 2025

| Time | Event Description | Location |
|---|---|---|
| 8:45 AM - 10:30 AM | Parallel Technical Session (T1) | Online |
| 10:30 AM - 12:00 PM | Parallel Technical Session (T2) | |
| 2:00 PM - 6:00 PM | Registration | Jatiya Kabi Kazi Nazrul Islam Bhaban |
| 2:00 PM - 6:00 PM | Robotics Workshop | Jatiya Kabi Kazi Nazrul Islam Bhaban |
| 3:00 PM - 4:00 PM | Keynote 01: Dr. Md. Atiqur Rahman Ahad<br>Professor, Dept. of Computer Science and Digital Technology<br>University of East London, UK | Virtual Classroom, Jatiya Kabi Kazi Nazrul Islam Bhaban |
| 4:00 PM – 4:30 PM | Tea Break | Jatiya Kabi Kazi Nazrul Islam Bhaban |
| 4:30 PM - 6:00 PM | Parallel Technical Session (T3) | Jatiya Kabi Kazi Nazrul Islam Bhaban |

## Day 02: 19th July, 2025

| Time | Event Description | Location |
|---|---|---|
| 8:00 AM - 9:00 AM | Registration, Greeting Exchanges and Breakfast | Jatiya Kabi Kazi Nazrul Islam Bhaban and Dr. Kudrat-E-Khuda Building |
| 9:00 AM – 10:30 AM | Parallel Technical Session (T4) | |
| 10:30- 11:00 AM | Tea Break | |
| 11:00 AM – 12:15 PM | Inaugural Ceremony | Auditoriam-2 |
| 12:15 PM – 1:00 PM | Keynote 02: Prof. Dr. Mohammad Abu Yousuf<br>Vice Chancellor<br>Gazipur Digital University | |
| 1:00 PM – 2:00 PM | Lunch and Prayer Break | |
| 2:00 PM – 3:30 PM | Parallel Technical Session (T5) | Jatiya Kabi Kazi Nazrul Islam Bhaban and Dr. Kudrat-E-Khuda Building |

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|---|---|---|
| 3:45 PM – 4:30 PM | Keynote 03: Prof. Dr. A B M Shawkat Ali<br>Vice-Chancellor<br>Bangladesh University of Business and Technology (BUBT) | Auditoriam-2 |
| 4:30 PM – 5:15 PM | Keynote 04: Prof. Dr. Mohammad Shorif Uddin<br>Vice-Chancellor<br>Green University Bangladesh | |
| 5:30 PM – 6:30 PM | Closing Ceremony | |
| 7:00 PM – 9:00 PM | Gala Dinner | Friend's Square Restaurant |

## PROGRAM SCHEDULE FOR
# KEYNOTE SESSIONS | IEEE CS BDC Summer Symposium 2025

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|---|---|
| **Keynote 1**<br>Friday, July 18, 2025<br>3:00 PM – 4:00 PM<br>Venue: Virtual Classroom, Jatiya Kabi Kazi Nazrul Islam Bhaban | Keynote 01: AI in healthcare – What can we do?<br>**Dr. Md. Atiqur Rahman Ahad**<br>Professor, Dept. of Computer Science and Digital Technology, University of East London, UK |
| | **Session Chairs:** Prof. Dr. Mohammad Shamsul Arefin, CSE, CUET,<br>Prof. Dr. Md. Sipon Miah, Dept. of ICT, IU |
| **Keynote 2**<br>Saturday, July 19,2025<br>12:15 PM – 1:00 PM<br>Venue: Auditorium-2 | Keynote 02: Deep Learning for Biomedical Imaging: Some Recent Approaches<br>**Prof. Dr. Mohammad Abu Yousuf**<br>Vice Chancellor, Gazipur Digital University (GDU) |
| | **Session Chairs:** Prof. Dr. K. M. Azharul Hasan, Dept. of CSE, KUET,<br>Prof. Dr. Md. Abu Layek, Dept. of CSE, JnU |
| **Keynote 3**<br>Saturday, July 19,2025<br>03:45 PM – 4:30 PM<br>Venue: Auditorium-2 | Keynote 03: AIoT: Harnessing AI and IoT to Solve Real-World Problems<br>**Prof. Dr. A B M Shawkat Ali**<br>Vice Chancellor, Bangladesh University of Business and Technology (BUBT) |
| | **Session Chairs:** Prof. Dr. Md. Zahidul Islam, ICT, IU,<br>Dr. Tangina Sultana, Dept. of ECE, HSTU |
| **Keynote 4**<br>Saturday, July 19,2025<br>4:30 PM – 5:15 PM<br>Venue: Auditorium-2 | Keynote 04: Towards Data-Efficient and Interpretable Computer Vision: Advances in Few-Shot Learning and Explainable AI<br>**Prof. Dr. Mohammad Shorif Uddin**<br>Vice Chancellor, Green University of Bangladesh (GUB) |
| | **Session Chairs:** Prof. Dr. Md Ahsan Habib, Dept. of ICT, MBSTU,<br>Prof. Dr.Ashis Kumar Mandal, Dept. of CSE, HSTU |

## PROGRAM SCHEDULE FOR
## TECHNICAL SESSIONS | IEEE CS BDC Summer Symposium 2025

# Parallel Session (Day 1)

| Online Technical Session 1 (18 July, 2025 at 8:45 AM to 10:30 AM) | | |
|---|---|---|
| **Parallel Session (T1P1)** | | **Online** |
| **Subject Area: Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **22** | Scaling Sentiment Analysis: Unleashing Transformers with HTCondor, NFS, and DAGMan | ***Session Chairs:*** *Prof. Dr. Mohammad Shamsul Arefin, Department of CSE, CUET*<br><br>*Prof. Dr. Md Abdul Masud, Department of CSIT, PSTU* |
| **42** | Predicting Fear-Related Nightmares in Children Using Traditional Machine Learning Models | |
| **93** | Mapping and Explaining Urban Environmental Disamenities using Satellite Imagery and Explainable Vision Transformers | |
| **94** | Transformer-Based Classification of Protein Secondary Structures Using ProteinBERT | |
| **96** | Real-Time Intrusion Detection Using Adaptive Ensemble Learning for Cybersecurity Threat Mitigation | |
| **127** | Detecting Fake Product Reviews in E-Commerce Long Short-Term Memory Networks | |
| **178** | A Precision ML Approach for Early Detection and Intervention in Autism Spectrum Disorder | |
| **181** | Road Accident Severity Analysis and Prediction Using Different Machine Learning Algorithms | |
| **188** | High-Precision Fabric Defect Detection with Modified CNN Architecture | |

| Online Technical Session 1 (18 July, 2025 at 8:45 AM to 10:30 AM) | | |
|---|---|---|
| **Parallel Session (T1P2)** | | **Online** |
| **Subject Area: Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **196** | Deep Learning Techniques for Handwritten Mathematical Equation Recognition | ***Session Chairs:*** *Prof. Dr. Mostofa Kamal Nasir, Department of CSE, MBSTU*<br><br>*Prof. Dr. Md. Sipon Miah, Department of ICT, IU* |
| **206** | Predicting Song Popularity by Analyzing Audio Features of Spotify Bengali Tracks across Diverse Genres | |
| **207** | An optimized hybrid model for student mental health risk assessment | |
| **212** | From Translation to Classification: A Study on Assamese Toxicity Detection Using BERT | |

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| **217** | Depression Severity Classification among University Students | |
| **219** | Predicting Stock Price Movements of S&P 500 Companies Using Deep Feedforward Neural Networks | |
| **227** | Subspace-Ejection with Validated Rewind: Efficient Machine Unlearning Through Ejectable Parameter Subspaces | |
| **228** | Modeling the Sharing Behavior and Survival Analysis of Fake News on Social Media | |
| **231** | Interpretable Deep Learning with Entity Embeddings for Early Dengue Prediction in Bangladesh | |

| **Online Technical Session 1 (18 July, 2025 at 8:45 AM to 10:30 AM)** | | |
|---|---|---|
| **Parallel Session (T1P3)** | | **Online** |
| **Subject Area: Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **240** | Non-Invasive Estimation of Erythrocyte Sedimentation Rate (ESR) from Smartphone - Captured PPG signals Using Machine Learning | ***Session Chairs:*** *Prof. Dr. Anupam Kumar Bairagi, Department of CSE, Khulna University (KU)*<br><br>*Prof. Adiba Mahjabin Nitu, Department of CSE, HSTU* |
| **245** | GenABSA-T5: A Zero-Shot Generative Framework for Aspect-Based Sentiment Analysis | |
| **247** | Deep Learning-Based Ensemble Framework for Automated Pneumonia Detection Using Chest X-ray Imaging | |
| **271** | Assessing Deep Learning Models for Precise and Effective Diabetic Retinopathy Identification and Categorization | |
| **281** | Enhancing Small Object Detection in Aerial Images with Selective Fusion YOLO | |
| **302** | A Hybrid Approach to Islamophobia Detection in Indian Social Media Using Logistic Regression, SVM, and BERT | |
| **304** | A Context-Aware Multimodal Machine Learning Framework for Proactive Worker Safety Monitoring in Low-Resource Factories of Bangladesh | |
| **308** | Towards Machine Translation for Low-Resource Tribal Languages in Bangladesh | |
| **313** | The Hidden Filter: Utilizing Feed-Forward Networks to Clarify Vision Transformer Explanations | |

| Online Technical Session 1 (18 July, 2025 at 8:45 AM to 10:30 AM) | | |
|---|---|---|
| **Parallel Session (T1P4)** | | **Online** |
| **Subject Area: Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **357** | Cardiovascular Disease Identification using a Hybrid CNN-LSTM Model with Explainable AI | ***Session Chairs:*** *Prof. Dr. Md. Abu Layek, Department of CSE, JnU*<br><br>*Prof. Dr. Md. Arshad Ali, Department of CSE, HSTU* |
| **362** | Real-time Smart Air Quality Monitoring and Prediction for Urban Health in Bangladesh | |
| **366** | Hate Speech Detection in Code-Mixed data: A Comparative Evaluation of Large Language Models | |
| **369** | Medicine Recommendation System Using Machine Learning for Personalized Diagnosis | |
| **391** | Revolutionizing Waste Management in Dhaka: A ResNet-34-Based Low-cost Face Recognition System Powered by dlib for Hygienic and Secure Garbage Disposal | |
| **394** | Machine Learning-Driven Early Detection of Lung Cancer: A Comprehensive Framework with Visual Analytics | |
| **404** | A Comparative Study on Skin Disease Classification Using Pre-trained Models | |
| **415** | Aspect-Based Sentiment Analysis of Skincare Product Reviews | |
| **417** | Evaluating Multilingual LLMs for Mathematical Problem Solving in Bangla | |
| **423** | Enhancing Agricultural Productivity: Machine Learning-Based Recommendations Using NPK, Soil pH and Climate Data | |

| Online Technical Session 1 (18 July, 2025 at 8:45 AM to 10:30 AM) | | |
|---|---|---|
| **Parallel Session (T1P5)** | | **Online** |
| **Subject Area: Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **441** | Predicting Low and Normal Phosphorus Tolerance in Maize Using Advanced Ensemble Classifiers | ***Session Chairs:*** *Prof. Dr. Mohammad Mamunur Rashid, Department of CSE, BOU*<br><br>*Prof. Dr. Mehedi Hasan Talukder, Department of CSE, MBSTU* |
| **447** | Machine-learning-assisted computational modelling of hydrogen isotope retention and oxide layer dynamics in tungsten under fusion conditions of plasma exposure Show abstract | |
| **448** | Intelligent Detection of Speech Delay and Autism Traits Using Machine Learning: An Association Rule Mining Approach | |
| **450** | A CNN-Based Hybrid Approach for Citrus Fruit Disease Classification | |

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| **456** | Deep Learning-Based Detection of Potato Leaf Diseases Using Convolutional Neural Networks | |
| **457** | Eggplant Yield Prediction Utilizing 130 Locally Collected Genotypes and Machine Learning Models | |
| **461** | Credit Card Fraud Detection Using Machine Learning Techniques: A Comparison Study of Logistic Regression and XG Boost on the European Dataset | |
| **478** | Multi-Object Detection and Embedding-Based Similarity Analysis for Multi-Context Image Classification with Bangla Text Prompts | |
| **492** | Sentiment Analysis of Bangla Book Reviews: Exploring Cultural Trends and Sentiment Distribution in Bangladeshi Literature | |

| **Online Technical Session 1 (18 July, 2025 at 8:45 AM to 10:30 AM)** | | |
|---|---|---|
| **Parallel Session (T1P6)** | | **Online** |
| **Subject Area: Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **190** | Saliency-CLIP: Enhancing Vision-Language Alignment via Saliency-Guided Regional Attention and Token-Aware Text Weighting | |
| **194** | Automated Bengali News Categorization Using Advanced NLP Models | |
| **236** | Identification of Authentic Hilsa Fish in the Bangladeshi Market: a Hybrid Deep Learning Approach Using Machine Vision | |
| **237** | A Framework for Inclusive and Adaptive Learning: AI-Powered Intelligent Tutoring Systems for Learners with Special Educational Needs | ***Session Chairs:*** *Prof. Dr. Mst. Fateha Samad, Department of ETE, RUET* *Dr. Mohammad Amzad Hossain, Department of ICE, NSTU* |
| **319** | Data Imbalance Dealing to Enhance Cervical Cancer Prediction | |
| **329** | A MultiView Ensemble Approach to Epileptic Seizure Recognition using Deep Neural Networks | |
| **430** | Optimizing Multiclass Crime Classification: A Comparative Analysis of Keyframe Extraction and Stacking Ensemble Learning on the UCF-Crime Dataset. | |
| **431** | Advanced Machine Learning Approaches for Accurate Sugarcane Yield Prediction with Ensemble Techniques | |
| **507** | Data-Driven Fault Classification in Single-Phase Inverters Using Simulink and Machine Learning Techniques | |
| **511** | A Landscape of Artificial Intelligence (AI) Applications Within Health Monitoring Systems | |

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| **Online Technical Session 2 (18 July, 2025 at 10:30 AM to 12:00 PM)** | | |
| **Parallel Session (T2P1)** | | **Online** |
| **Subject Area: Artificial Intelligence, Machine Learning, and Data Analytics, Internet of Things (IoT) and Communication** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **179** | Cost Effective Dual Axis Solar Tracker with Integrated Weather Monitoring System | ***Session Chairs:*** *Prof. Dr. Md. Abdur Razzaque, Department of CSE, University of Dhaka*<br><br>*Dr. Tangina Sultana, Department of ECE, HSTU* |
| **220** | Design and Implementation of a Multi-Sensor IoT-Based Smart Home Automation System Using ESP8266 and Blynk | |
| **320** | ECG Based Real-time Arrhythmia Classification Using Hybrid CNN-LSTM-Attention Model within Federated Fog Computing Framework | |
| **440** | Securing Bangladesh's Medical Supply Chain Using Blockchain for Traceability and Counterfeit Prevention | |
| **535** | Towards A Machine Learning-Enabled Framework for Cybersecurity Threat Detection in Telesurgery | |
| **541** | An Explainable Ensemble Learning Approach for Gestational Diabetes Prediction | |
| **547** | Enhancing Retinal Disease Classification Using ResNet and EfficientNet: A Hybrid Deep Learning Approach | |
| **551** | Predicting Student GPA Using Supervised Regression Models Based on Academic and Behavioral Data | |
| **569** | A Two-Stage Machine Learning Framework for Predicting Survival and Staging in Hepatocellular Carcinoma | |
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| **Online Technical Session 2 (18 July, 2025 at 10:30 AM to 12:00 PM)** | | |
| **Parallel Session (T2P2)** | | **Online** |
| **Subject Area: Signal Processing, Computer Vision, and Robotics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **3** | NeuroEvoUNet: An Evolutionary NAS Based U-Net for Brain Tumor Segmentation | ***Session Chairs:*** *Prof. Dr. Mohammad Motiur Rahman, Department of CSE, MBSTU*<br><br>*Prof. Dr. Md. Sadek Ali,* |
| **39** | DriveGuard: Driver Expression Recognition Using Swin Transformer and CNN Variants to Enhance Road Safety | |
| **43** | Passive Optical Vibration Monitoring for Machine Health in Cyber-Physical Systems | |

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| **171** | Enhancing Classification Performance of ASSIRA Cats and Dogs Dataset Using Stacked Ensemble Learning Techniques | *Department of ICT, IU* |
| **172** | SheepFormers: Precise Identification of Sheep Breeds using Vision Transformer Approach | |
| **321** | Advancing Brain Tumor Diagnosis through Hybrid CNN Architectures and XAI | |
| **348** | Enhanced Medical Image Analysis:\\ Leveraging CUDA for Fast and Accurate Pneumonia Detection with Optimized Siamese Neural Networks | |
| **363** | Efficient Brain Tumor Classification Using CNN with Self-Attention Mechanisms | |
| **373** | Development of a Fire Detection and Extinguishing Robot Using Arduino and Flame Sensors | |
| **376** | Evaluating Acoustic Biomarkers for Hypernasality Detection in Cleft Palate Speech: Toward Low-Resource Clinical Assessment | |
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| **Online Technical Session 2 (18 July, 2025 at 10:30 AM to 12:00 PM)** | | |
| **Parallel Session (T2P3)** | | **Online** |
| **Subject Area: Signal Processing, Computer Vision, and Robotics, Control, Communication, and Signal Processing** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **215** | Design and analysis of K-Band Compound Spiral Antenna for Wireless Applications | ***Session Chairs:*** *Prof. Dr. Md. Mamun-Or-Rashid, Department of CSE, University of Dhaka*<br><br>*Prof. Dr. Md. Dulal Haque, Department of ECE, HSTU* |
| **334** | Smart Water Regulation for Irrigation | |
| **370** | A Compact mmWave Inset-Fed Rectangular Microstrip Patch Antenna for High-Efficiency Breast Tumor Detection | |
| **378** | Design of a Plant Leaf Disease Identification and Remedy Prescription System using Drone Technology | |
| **402** | Residual Fully ConvNet for Wafermap Defect Classification | |
| **424** | Vegetable Classification using Deep Learning: Insights from Transfer Learning Models | |
| **495** | Performance Analysis over Dual-hop Underwater Optical Wireless Communication Channels | |
| **519** | Analyzing Algorithms for Optimal Point-to-Point Trajectory Generation of a 3-DOF Manipulator | |
| **568** | Advanced Traffic Optimization and Toll Collection System Using Modified YOLO and ABTS API | |
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| **Online Technical Session 2 (18 July, 2025 at 10:30 AM to 12:00 PM)** | | |

| Parallel Session (T2P4) | | Online |
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| **Subject Area: Network and Security, Database Technologies and Software Engineering + Quantum Computing, DNA Computing, and Optics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **35** | Enhanced Privacy for Big Data: A Hybrid Approach Using K-Anonymity, L-Diversity, and DP-CTGAN | ***Session Chairs:*** *Prof. Dr. Md. Mijanur Rahman, Department of CSE, Jatiya Kabi Kazi Nazrul Islam University*<br><br>*Dr. Ashis Kumar Mandal, Department of CSE, HSTU* |
| **54** | Molecular-Quantum Integrated Framework Utilizing Binary Logic for Cache Memory System Design | |
| **264** | Performing Quantum Subroutine Using Cluster State | |
| **286** | Securing E-Voting with Zero-Knowledge Proofs: A Hybrid Framework for Trustless Elections | |
| **305** | Developing a Historical Database Platform to Combat Misinformation: A Digital History Research Archive for Bangladesh | |
| **307** | A Systematic Review of Zero-Day Attacks in Mobile Messaging Applications: Vulnerabilities, Detection, and Mitigation Strategies (2020–2025) | |
| **309** | A Comparative Analysis of Deep Learning Models for Network Intrusion Detection | |
| **343** | Counting and Enumerating Unique Neighborhood Networks | |
| **460** | Enhanced Fraud Detection in Credit Card Transactions With Data Balancing and XGBoost | |

**Online Technical Session 2 (18 July, 2025 at 10:30 AM to 12:00 PM)**

| Parallel Session (T2P5) | | Online |
|---|---|---|
| **Subject Area: Power Systems, Renewable Energy, and Smart Grid Technologies, Electronics, VLSI, and Embedded Systems** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **24** | Performance Analysis and Comparative Study of Multilevel Inverter Topologies for Solar PV-Based Applications | ***Session Chairs:***<br><br>*Prof. Dr. Tushar Kanti Saha, Department of CSE, Jatiya Kabi Kazi Nazrul Islam University*<br><br>*Prof. Dr. Md. Zamil Sultan, Department of EEE, HSTU* |
| **34** | FlexZK: A Configurable Hardware Framework for Multi-Protocol Zero-Knowledge Acceleration | |
| **87** | Real-Time Anomaly Detection in Smart Grids Using Federated Learning | |
| **169** | Innovative Use of Human Feces for Renewable Energy Production in Dhaka | |
| **258** | Analytical Modeling, Potential Profile Verification and Current Characteristics of a P-type Cylindrical Gate Junctionless Accumulation Mode MOSFET (CGJAMM) with and without Stack Oxide | |
| **280** | Design and Performance Simulation of a GeSnC-Based LED for Si/Ge-Compatible Photonics | |

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| **295** | Enhancing HID Functionality: A Comprehensive Approach to Implement Analog Inputs | |
| **342** | A Hybrid ABC-PSO Approach Based on Cascaded (1+PI)-PI-PID Controller for Load Frequency Control in Two Area Reheat Thermal-Hydro Power Systems | |
| **345** | Optimize Embedded CPU Performance Using RISC-V Architecture and Custom Assembler with Multicycle Approach | |
| **406** | Smart Temperature-Based Demand Response System for Energy Saving in AC Operation | |
| **432** | Design and Study of 2T Perovskite Tandem Solar Cell using (MA)2CuBr4 and CsSnGeI3 Through Optimization of Bandgap, Defect and Electron Affinity with 3D Color Map | |
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| **Offline Technical Session 3 (18 July, 2025 at 04:30 PM to 06:00 PM) , Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban** | | |
| **Parallel Session (T3P1)** | | **Room No.: 234** |
| **Subject Area: Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **23** | Enhancing Rheumatoid Arthritis Risk Prediction Using Machine Learning and Explainable AI | ***Session Chairs:*** *Prof. Dr. Mohammad Shamsul Arefin, Department of CSE, CUET* *Prof. Dr. Md. Sadek Ali, Department of ICT, IU* ***Session Co-Chair:*** *Md. Mizanur Rahman, Department of EEE, HSTU* |
| **118** | Stackomnia: Enhencing Classification of Sleep Disorders Using Machine Learning | |
| **129** | Enhancing Predictive Analysis of Wind Energy Potential Using Machine Learning | |
| **185** | Predicting Student Mental Health Scores Based on Social Media Usage Patterns Using Machine Learning | |
| **211** | Leveraging Machine Learning and Data Analytics for Predictive Modeling in Smart Agriculture: A Case Study from Northern Bangladesh | |
| **255** | Smarter Living or Greater Risk? An Evaluation of the Advantages and Limitations of AI in Domestic Appliances. | |
| **353** | Perceived vs Actual Intelligence in AI Chatbots: A User-Centric Analysis of Trust and Misconception | |
| **414** | AluViNet: Enhancing Potato Leaf Disease Classification through Transfer Learning and Ensemble Models | |
| **436** | FERINet: A Feature-Enriched Ensemble Deep Learning Framework for Accurate Multi-Crop Leaf Disease Detection | |
| **438** | Ensemble Deep Learning for High Precision Mango Leaf Disease Classification | |

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| **Offline Technical Session 3 (18 July, 2025 at 04:30 PM to 06:00 PM), Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban** | | |
| **Parallel Session (T3P2)** | | **Room No.: 201** |
| **Subject Area: Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **27** | Exploring Mental Health Trends Among Tech Employees Through Machine Learning and Explainable AI | ***Session Chairs:*** *Prof. Dr. K. M. Azharul Hasan, Department of CSE, KUET*<br><br>*Prof. Dr. Tarek Hasan Al Mahmud, Department of ICT, IU*<br><br>***Session Co-Chair:*** *Md. Safiqul Islam, Department of EEE, HSTU* |
| **442** | Improving Rice Grain Quality and Trade Efficiency with Transfer Learning-Based Deep Learning Classification | |
| **446** | Ensemble Learning-Based Real-Time Dengue Prediction from Hematological Features with XAI | |
| **458** | Reimagining COVID-19 Detection: A Smart Vital-Signs Approach Using Wearables and the MAX30102 Sensor | |
| **477** | Voice-based Parkinson's disease detection using boosting ensemble models: a comparative study | |
| **498** | Multimodal Prediction of Anxiety and Panic Episodes Using EEG and Heart Rate Variability: A Real-Time Monitoring Approach | |
| **504** | Flood Risk Prediction and Spatial Mapping in Bangladesh Using Machine Learning and Remote Sensing | |
| **508** | IoT-Based Health Monitoring for High-Risk Pregnancies in Bangladesh. | |
| **526** | A Machine Learning Based Approach for Specialist Doctor Domain Recommendation from Bangla and English Symptom Descriptions | |
| **544** | AI-Powered Monitoring and Optimization Framework for Next-Gen Fiber Optic Networks | |
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| **Offline Technical Session 3 (18 July, 2025 at 04:30 PM to 06:00 PM), Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban** | | |
| **Parallel Session (T3P3)** | | **Room No.: 202** |
| **Subject Area: Internet of Things (IoT) and Communication** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **177** | An IoT-Based Seismic Sensor Network for Earthquake Prediction and Early Warning | ***Session Chairs:*** *Prof. Dr. Md. Abu Layek, Department of CSE, JnU*<br><br>*Dr. Md. Khairul Islam, Department of* |
| **267** | DisasterX: An IoT-Based Robotic Rover with ESP32-CAM for Real-Time Disaster Intervention | |
| **269** | IoT-Based Noise Pollution Monitoring with Digital Displays | |

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| **469** | Development of an IoT-Based Smart Fan Control System with Temperature-Humidity Driven Dual-Mode Speed Regulation and Remote Environmental Monitoring | *Biomedical Engineering, IU*<br><br>***Session Co-Chair:***<br>*Rony Tota, Department of EEE, HSTU* |
| **501** | Air Pollution Monitoring System Based on IoT | |
| **514** | Motion-Activated Smart Surveillance System Using ESP32-CAM and Cloud Integration | |
| **525** | Gas Leakage Detection and Web-Based Alert System using Arduino and IoT | |
| **531** | A Hybrid Biometric-RFID Attendance Automation System Using Face Recognition and RFID Technologies | |
| **532** | Design and Implementation of an IoT-Based Smart Cold Storage System with Automated Environmental Control and Ventilation | |
| **542** | IoT based vehicle safety management system | |

**Offline Technical Session 3 (18 July, 2025 at 04:30 PM to 06:00 PM Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban**

| **Parallel Session (T3P4)** | | **Room No: 203** |
|---|---|---|
| **Subject Area: Internet of Things (IoT) and Communication, Control, Communication, and Signal Processing + Signal Processing, Computer Vision, and Robotics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **360** | Energy-Efficient Electric Vehicle Design for Urban Bangladesh | ***Session Chairs:***<br>*Prof. Dr. Mohammad Mamunur Rashid, Department of CSE, BOU*<br><br>*Prof. Dr. Ashis Kumar Mandal, Department of CSE, HSTU*<br><br>***Session Co-Chair:***<br>*Dr. A F M Shahab Uddin, Department of CSE, JUST* |
| **509** | Details performance analysis of WDM System under varying transmission conditions | |
| **512** | BER Performance Analysis of QPSK and 16-QAM Modulation in Optical Fiber Communication Using MATLAB | |
| **527** | Reducing Signal Loss in Long-Distance Fiber Optic Communication | |
| **540** | Performance Enhancement Using Single-Mode Fiber and Dispersion Compensating Fiber in Optical Communication Systems. | |
| **546** | Analysis and Mitigation of Chromatic and Modal Dispersion in Optical Fiber Communication Using Dispersion Compensating Fibers and Fiber Bragg Gratings: A MATLAB-Based Simulation Approach. | |
| **549** | High-Power Green Laser Delivery Over 300 Meters Using Low-Loss Hollow-Core Anti-Resonant Fibers with Dynamic Nonlinearity Suppression | |
| **553** | IoT -Based Aqua culture monitoring system | |
| **555** | Industrial Machine Monitoring System | |

| Offline Technical Session 3 (18 July, 2025 at 04:30 PM to 06:00 PM) , Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban | | |
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| **Parallel Session (T3P5)** | | **Room No: 204** |
| **Subject Area: Cognitive Science and Computational Biology, Electronics, VLSI, and Embedded Systems, Network and Security, Power Systems, Renewable Energy, and Smart Grid Technologies, Quantum Computing, DNA Computing, and Optics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **180** | DNA Computing for Early Detection of Crop Disorders in Bangladesh | ***Session Chairs:*** *Prof. Dr. Md. Sipon Miah, Department of ICT, IU*<br><br>*Prof. Dr. Md. Zamil Sultan, Department of EEE, HSTU*<br><br>***Session Co-Chair:*** *Dr. Md. Imran Hossain, Department of ICE, PUST* |
| **214** | Power Quality Improvement in Renewable Integrated Systems. | |
| **246** | Prototype Implementation and Conceptual Framework for Zero-Trust Security in Enterprise Networks | |
| **251** | Renewable Energy Solutions for Reliable Power Supply in Rural Bangladesh Flood-Affected Areas | |
| **351** | Comparative PVT Performance Analysis of Arithmetic Circuits in GDI and CMOS at 180nm and 45nm | |
| **364** | Unveiling the Complexities of AI and Human Emotion: Perceived Capabilities, Trust, and Responsible Adoption of Emotion Detection | |
| **474** | Arduino Based Digital Alarm Clock | |
| **491** | SoilTrack: Embedded System for Soil and Crop Monitoring. | |
| **562** | Temperature Controlled Fan using Microcontroller | |

## Parallel Session (Day 2)

| Offline Technical Session 4 (19 July, 2025 at 09:00 AM to 10:30 AM ), Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban | | |
|---|---|---|
| **Parallel Session (T4P1)** | | **Room No: 234** |
| **Subject area: Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **8** | Smartwatch-Based Machine Learning Systems for Personalized Exercise Prescription: A Systematic Review | ***Session Chairs:*** *Prof. Dr. Md. Zahidul Islam, Department of ICT, IU*<br>*Prof. Adiba Mahjabin Nitu, Department of CSE, HSTU* |
| **11** | AI-Driven Breast Cancer Diagnosis: A Comparative Analysis of Text and Image Modalities | |
| **28** | Predicting Arsenic Contamination in Groundwater Using Explainable AI | |
| **29** | Building Transparent and Scalable Ensemble Models for Lung Cancer Diagnosis | |

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| **49** | Rice Leaf Disease Classification using Hybrid Deep Learning Models | ***Session Co-Chair:*** *Md. Sohrawordi, Department of CSE, HSTU* |
| **67** | Analysis of Hybrid Feature Selection Based Intrusion Detection in IoT Using Machine Learning Approach | |
| **83** | An Explainable Machine Learning Framework for Anemia Diagnosis Using Feature Selection and Classification Models | |
| **109** | ResNet-50 Based Classification of Tomato Leaf Diseases: A Deep Learning Approach for Smart Agriculture in Bangladesh | |
| **157** | Optimizing Brain Tumor Detection Evaluating Deep CNN Architectures on MRI Images | |

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| **Offline Technical Session 4 (19 July, 2025 at 09:00 AM to 10:30 AM ), Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban** | | |
| **Parallel Session (T4P2)** | | **Room No: 201** |
| **Subject area: Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **160** | Performance Evaluation of CNN Architectures for Pneumonia Detection in Chest X-Ray Images | ***Session Chairs:*** *Prof. Dr. Md. Abu Layek, Department of CSE, JnU*<br><br>*Prof. Dr. Md. Mahabub Hossain, Department of ECE, HSTU*<br><br>***Session Co-Chair:*** *Md. Hassanul Karim Roni, EEE, HSTU* |
| **162** | Deep Learning for Lung Disease Detection: A Comparative Study of CNN Architectures | |
| **168** | EfficientNet-B3 for Automated Brain Tumor Detection: A Lightweight Deep Learning Approach for MRI Analysis | |
| **176** | Mobile Health Approach for Predicting and Managing Student Stress Using Self-Tracking and Machine Learning | |
| **187** | Enhancing Ophthalmic Screening Through Deep Learning: A FastAI-Based Study on Retinal Disorders | |
| **189** | Detection of Bengali Multimodal Fake News using Co-Attention based CNN-Transformer | |
| **192** | A Comparative Study - (DenseNet121, ResNet50, InceptionV3, and Xception) For Detecting Melanoma | |
| **193** | Deep Learning-Based Malware Detection Using Malimg Dataset | |

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| **Offline Technical Session 4 (19 July, 2025 at 09:00 AM to 10:30 AM ), Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban** | | |
| **Parallel Session (T4P3)** | | **Room No.: 202** |
| **Subject area: Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **216** | Deep Learning Models (MobileNet, ResNet50, VGG16, and Xception) for Blood Cancer Detection | |

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| **221** | Machine Learning-Based Prediction and Identification of Risk Factors for Low Birth Weight: Insights from the Bangladesh Demographic and Health Survey 2022 | ***Session Chairs:*** *Prof. Dr. Mohammad Shamsul Arefin, Department of CSE, CUET* *Md. Mizanur Rahman, Department of EEE, HSTU* ***Session Co-Chair:*** *Rony Tota, Department of EEE, HSTU* |
| **229** | Identification of bacterial key genera associated with breast cancer using machine learning techniques | |
| **232** | Attention Mechanism-based Hybrid Deep learning model for Enhancing Prediction Accuracy | |
| **235** | Machine Learning Based Calibration of Smartphone PPG Signal Using a Reference Device for Reliable Health Monitoring | |
| **241** | Deep Learning-Based Android Malware Detection | |
| **242** | Leveraging Machine Learning and Explainable AI for Early Prediction of Gestational Diabetes Mellitus Using Clinical and Non-Clinical Data | |
| **259** | Assessment of Socio-Demographic Risk Factors for Low Birth Weight Using Model Agnostic Explainable Ensembles | |
| **261** | Digital Duplicity: Understanding Contextual Malleability in Human-AI Communication | |

**Offline Technical Session 4 (19 July, 2025 at 09:00 AM to 10:30 AM ), Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban**

| **Parallel Session (T4P4)** | | **Room No.: 203** |
|---|---|---|
| **Theme : Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **262** | Identification of Expressed Genes and Potential Drugs in Colorectal Cancer Using Integrated Bioinformatics Analysis | ***Session Chairs:*** *Prof. Dr. K. M. Azharul Hasan, Department of CSE, KUET* *Dr. Masud Ibn Afjal, CSE, HSTU* ***Session Co-Chair:*** *Kashfia Azad Tuba, CSE, AIUB* |
| **263** | Identifying Determinants and Predicting Cesarean Section among Bangladeshi Women Using Machine Learning: Insight from BDHS 2022 Data | |
| **265** | A Comprehensive Approach to Detecting Automobiles Insurance Fraud: Ensemble Machine Learning Strategies | |
| **275** | Challenges of ICT in Digital Education for Low-Income Families in Bangladesh | |
| **276** | Real-Time Voice Phishing Detection: A Machine Learning- Based Approach to Combating Vishing Attacks | |
| **277** | A Transformer-Augmented EfficientNet-GRU Framework with Explainable AI for Automated Skin Cancer Diagnosis | |
| **278** | Debt and Distress: A Data-Driven Inquiry into the Psychological Consequences of Microfinance in Bangladesh | |

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| **282** | Named Entity Recognition for Bangla Text using Transformer-based Ensembles | |
| **283** | Pest Detection and Management in Agriculture Using AI | |

**Offline Technical Session 4 (19 July, 2025 at 09:00 AM to 10:30 AM ), Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban**

| **Parallel Session (T4P5)** | | **Room No.: 204** |
|---|---|---|
| **Theme : Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **288** | NeuroGAN: Generative Adversarial Augmentation for Enhanced Motor-Imagery EEG Classification | ***Session Chairs:*** *Prof. Dr. Mst. Fateha Samad, Department of ETE, RUET*<br><br>*Dr. Md. Nadim, Department of CSE, HSTU*<br><br>***Session Co-Chair:*** *Md. Selim Hossain, Department of ECE, HSTU* |
| **289** | AI-Assisted Prostate Cancer Diagnosis: A Vision Transformer Model Using Representation Learning on Histological Images | |
| **291** | Improving Lung Cancer Classification from CT Scans Using a Conditional 3D GAN Framework | |
| **293** | Crop Recommendation System Using Machine Learning | |
| **299** | Exploring the Influence of Artificial Intelligence on Daily Activities and the Workplace: A Qualitative Study in Bangladesh | |
| **300** | The Death of Memorization: Rethinking Curriculum in an AI World | |
| **306** | An Efficient Approach to Recognize Bangla License Plate for Diverse-Quality Images | |
| **315** | Multi-Modal Federated Learning Framework for Automated Lung Tuberculosis Detection and Classification Using X-Ray Imaging | |
| **566** | Optimizing Parkinson's Disease Detection: Unveiling the Power of<br>Hybrid Models through Innovative Integration of Hyperparameter<br>Tuning and Deep Learning for Unprecedented Accuracy. | |

**Offline Technical Session 4 (19 July, 2025 at 09:00 AM to 10:30 AM ), Venue: Dr. Muhammad Qudrat-I-Khuda Bhaban**

| **Parallel Session (T4P6)** | | **Room No.: 624** |
|---|---|---|
| **Theme : Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **322** | Federated Learning Framework for Brain Tumor Classification and Detection and segmentation on Heterogeneous Data | |

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| **333** | DNAcodec: A Hybrid Deep Learning Framework for Robust Error Localization in DNA-Based Data Storage | ***Session Chairs:*** *Prof. Dr. Md. Delowar Hossain, CSE, HSTU*<br><br>*Prof. Dr. Md. Sipon Miah, Department of ICT, IU*<br><br>***Session Co-Chair:*** *Sumya Akter, Department of CSE, HSTU* |
| **336** | An Explainable Federated EfficientNet–Transformer Model for Lung Cancer Classification from Histopathological CT Images | |
| **338** | Enhancing Lung Cancer Diagnosis using a hybrid VGG-16 and Vision Transformer model. | |
| **347** | Performance Benchmarking of Deep Learning Models on BdSLW-11 for Bangladeshi Sign Language Word Recognition | |
| **352** | Real-Time Bangladeshi Sign Language Recognition Using YOLOv8 and the BdSLW-49 Dataset | |
| **355** | Computational Analysis and Artificial Intelligence-Based Optimization of Autonomous Healing Fiber-Reinforced Composites for Advanced Engineering Applications | |
| **356** | Machine Learning-Based Prediction of Solar PV Output Using ANN: Performance and Evaluation | |

**Offline Technical Session 4 (19 July, 2025 at 09:00 AM to 10:30 AM ), Venue: Dr. Muhammad Qudrat-I-Khuda Bhaban**

| **Parallel Session (T4P7)** | | **Room No.: 625** |
|---|---|---|
| **Theme : Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **359** | Privacy-Preserving Federated Learning Framework for Brain Tumor Detection Using MRI and Explainable AI | ***Session Chairs:*** *Prof. Dr. Md. Arshad Ali, Department of CSE, HSTU*<br><br>*Dr. Md. Khairul Islam, Department of Biomedical Engineering, IU*<br><br>***Session Co-Chair:*** *Md. Ferdous Wahid, Department of EEE, HSTU* |
| **361** | An Explainable Hybrid Vision Transformer-CNN Architecture for Brain Tumour Detection and Classification Using MRI Scans: A Primary Dataset-Driven Approach from Northern Bangladesh | |
| **383** | Prediction of Hypertension and Its Associated Risk Factors among Adults in Dinajpur District, Bangladesh Using Machine Learning Techniques | |
| **396** | Deep Learning-Based Multi-Class Lung Disease Classification Using Chest X-ray Images with High Precision | |
| **420** | Development of 5G Surveillance Network for Maritime Border of Bangladesh | |
| **421** | Telecommunication Customer Churn Prediction using Machine Learning | |
| **428** | Joint Service Migration and Resource Allocation in Cloud Computing Using Large Language Models (LLMs). | |

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| **439** | Beyond Empirical Models: Leveraging Deep Learning for High-Precision Throughput Prediction in IEEE 802.11ac WLANs | |
| **459** | Prediction of Myopia Among Undergraduate Students Using Ensemble Machine Learning Techniques | |
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| **Offline Technical Session 4 (19 July, 2025 at 09:00 AM to 10:30 AM ), Venue: Dr. Muhammad Qudrat-I-Khuda Bhaban** | | |
| **Parallel Session (T4P8)** | | **Room No.: 651** |
| **Theme : Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **465** | Concepts of AI Assisted Waste Management and Resource Recovery | ***Session Chairs:*** *Prof. Dr. Md. Sadek Ali, Department of ICT, IU*<br><br>*Hasi Saha, Department of CSE, HSTU*<br><br>***Session Co-Chair:*** *Md. Ilius Hasan Pathan, Department of EEE, HSTU* |
| **467** | Modified YOLOv11 with Retrieval-Augmented Language Model for Lung Disease Detection and Treatment Recommendation | |
| **468** | Paddies Yield: A Random Forest-Based Mobile Application for Optimizing Crop Production in Bangladesh | |
| **471** | Real-Time Skin Disease Diagnosis with CNN on a Cross-Platform mHealth Application | |
| **472** | An Explainable Multi-Model Approach for Breast Cancer Detection Using Diverse Clinical Datasets | |
| **483** | Towards Interpretable Brain Tumor Classification: A Hybrid Deep Learning Framework Integrating Attention Mechanisms | |
| **487** | An Explainable Ensemble of Attention-Enhanced Lightweight CNNs for Skin Lesion Classification Using CSV-Based Images | |
| **496** | A Comprehensive Ensemble Machine Learning Approach for Cardiovascular Risk Prediction | |
| **499** | Gender & Age Detector: Real-Time, Edge-Friendly Facial Attribute Classification with OpenCV DNN | |
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| **Offline Technical Session 4 (19 July, 2025 at 09:00 AM to 10:30 AM ), Venue: Dr. Muhammad Qudrat-I-Khuda Bhaban** | | |
| **Parallel Session (T4P9)** | | **Room No.: 666** |
| **Theme : Artificial Intelligence, Machine Learning, and Data Analytics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **506** | Phishing Detection Using Gradient-Weighted Ensemble with Hybrid Sampling | ***Session Chairs:*** *Prof. Dr. Md. Zamil Sultan, Department of EEE, HSTU* |
| **515** | Towards Trustworthy AI in Pathology: Interpretable Deep Learning for Histopathological Cancer Diagnosis | |

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| **520** | PREDICTING PREGNANCY RISK LEVELS USING ENSEMBLE MACHINE LEARNING | *Dr. A F M Shahab Uddin, Department of CSE, JUST*<br><br>***Session Co-Chair:***<br>*Mahfujur Rahman, Department of ECE, HSTU* |
| **528** | A Hybrid Vision Transformer and CNN-Attention Architecture for Robust Pneumonia Detection from Chest X-Rays | |
| **530** | An Adaptive AI Approach for Cervical Cancer Prediction with Explainability | |
| **537** | An Adaptive AI Approach for Cervical Cancer F | |
| **550** | Rice Leaf Disease Detection Using CNN | |
| **554** | Automated Rice Grain Classification: A Computer Vision Approach for Agricultural Applications | |
| **557** | HoltWin-XTS: Elevating Banking Sector Forecast Accuracy Through Advanced Holt-Winters Time Series Models | |

**Offline Technical Session 5 (19 July, 2025 at 02:00 PM to 03:30 PM ), Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban**

| **Parallel Session (T5P1)** | | **Room No.: 234** |
|---|---|---|
| **Theme : Artificial Intelligence, Machine Learning, and Data Analytics, Internet of Things (IoT) and Communication** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **5** | Solar-Powered Water Purification with Smart Monitoring | ***Session Chairs:***<br>*Prof. Dr. M Shamim Kaiser, IIT, JU*<br><br>*Prof. Md. Fazle Rabbi, Department of CSE, HSTU*<br><br>***Session Co-Chair:***<br>*Dr. Md. Nadim, Department of CSE, HSTU* |
| **41** | IoT-Based Indoor Energy Harvesting System Using RGB Light Measurement | |
| **195** | IoT-Based Smart Home Automation and Roadside Turning Alert | |
| **208** | IoT-Based Assistive Technology for Children with Autism Spectrum Disorder(ASD) | |
| **209** | Intelligent Remote Healthcare Monitoring: ESP32-IoT Solution for Patient Care | |
| **218** | A CNN-LSTM Framework for Stress Detection Using IoT and WESAD Dataset | |
| **225** | An IoT-Enabled, Explainable AI-Based Real-Time Air Quality Monitoring and Pollution Prediction System for Smart Campuses | |
| **563** | Integrating Computer Vision and Conversational AI for Elderly Wellness: A Multimodal Bengali Care Framework | |
| **570** | A Hybrid GATv2-GCN Machine Learning Model for Illicit Transaction Detection in Bitcoin Networks (Ignore prior registration entry.) | |
| **571** | Balancing Interpretability and Performance in Credit Card Fraud Detection Using Machine Learning Techniques with SMOTE and Logistic Regression | |

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| **Offline Technical Session 5 (19 July, 2025 at 02:00 PM to 03:30 PM ), Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban** | | |
| **Parallel Session (T5P2)** | | **Room No.: 201** |
| **Subject Area: Internet of Things (IoT) and Communication** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **226** | Long-Range Wireless Data Exchange System without Internet and Mobile Network Infrastructure | ***Session Chairs:*** *Prof. Dr. Mohammed Nasir Uddin, Department of CSE, JnU*<br>*Prof. Dr. Md. Abdulla Al Mamun, Department of CSE, HSTU*<br>***Session Co-Chair:*** *Jannatun Ferdous, Department of CSE, HSTU* |
| **294** | Empowering Women's Safety through a Fingerprint-Activated Smart Ring: Integration of GPS, GSM, and Covert Surveillance Technologies | |
| **297** | LDR-Based Automatic Lighting System Using Basic Gate for Smart Environments | |
| **325** | Optimal Path Planning for UAVs in Digital Twin Edge Networks | |
| **327** | RFDRV: A Real Time face detection, recognition and verification technology for enhancing the security of ATM Booth in Bangladesh | |
| **332** | An IoT-Based Smart Framework for Real-Time Monitoring and Predictive Analytics of Indoor Air Quality | |
| **349** | IoT Technologies in Agriculture- A Smart Village Transformation | |
| **497** | A Bandwidth Efficient Split Learning Framework for Intrusion Detection in Industrial IoT Networks | |
| **510** | Towards Improving FANET Routing Protocol using UAV-Assisted Scanning Approach | |
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| **Offline Technical Session 5 (19 July, 2025 at 02:00 PM to 03:30 PM ), Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban** | | |
| **Parallel Session (T5P3)** | | **Room No.: 202** |
| **Subject Area: Power Systems, Renewable Energy, and Smart Grid Technologies** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **142** | Enhancing Solar Energy Efficiency Using Reflective Silver Mirrors in Hybrid CSP-PV Systems. | ***Session Chairs:*** *Dr. Muhammad Aminur Rahaman, Department of CSE, BUBT*<br>*Dr. Md. Ferdous Rahman, Department of EEE, BRUR*<br>***Session Co-Chair:*** |
| **210** | Porphyrin Based D-π-A Dyes for Dye Sensitized Solar Cells: A Computational Approach | |
| **239** | Sustainability Study of Solar Electricity Implementation in Bangladesh | |
| **252** | Advanced Optimization and Stability Analysis of All-Inorganic Triple Absorber Solar Cells Using SCAPS-1D for High-Efficiency Photovoltaics. | |

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| **317** | Optimizing the Energy Management System of a Photovoltaic Fuel Cell Battery Hybrid Electric Vehicle using PID Control System | *Dr. Md. Shajalal, Department of CSE, HSTU* |
| **407** | Artificial Neural Network-Based Fault Diagnosis in Electrical Transmission Systems | |
| **416** | Battery management systems in Bangladesh: A mind mapping approach to optimization | |
| **419** | Electrical Energy Systems in Bangladesh: A Review of Current Status and Future Trends | |
| **427** | Comparative Analysis of Rooftop Solar PV Performance in Bangladesh. | |
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| **Offline Technical Session 5 (19 July, 2025 at 02:00 PM to 03:30 PM ), Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban** | | |
| **Parallel Session (T5P4)** | | **Room No.: 203** |
| **Subject Area: Power Systems, Renewable Energy, and Smart Grid Technologies, Control, Communication, and Signal Processing, Electronics, VLSI, and Embedded Systems** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **32** | Challenges and Opportunities of 5G Integration in Bangladesh: Impacts on Education, Research, Business, and Healthcare | ***Session Chairs:*** *Prof. Dr. Md. Obaidur Rahman, Department of CSE, DUET*<br><br>*Prof. Dr. Md. Zamil Sultan, Department of EEE, HSTU*<br><br>***Session Co-Chair:*** *Md. Motiur Rahman Tareq, ECE, HSTU* |
| **298** | Analytical Modeling and Validation of Threshold Voltage and Depletion Width in p-Channel Double-Gate Junctionless FETs with and without Stack Oxide | |
| **350** | Design and Development of an Embedded Weather Monitoring Station with Various Sensors Technology | |
| **444** | Design & Implementation of Intelligence Solar Panel System | |
| **453** | Usage and Prospects of ICT in Agricultural Communication Services | |
| **455** | Enhancing Thermal Comfort for Soldiers during Operational Deployment | |
| **464** | Effectiveness of advanced algorithms in a new Reduced switch nine level-inverter | |
| **500** | A Performance Optimization and Nonlinear Impairment Mitigation in High-Capacity Optical Fiber Communication Systems | |
| **524** | Machine Learning-Assisted SCAPS Device Simulation for Photovoltaic Parameter Prediction and Battery Storage Analysis with an Automatic Solar Tracking System for Optimized Solar Energy Production | |
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| **Offline Technical Session 5 (19 July, 2025 at 02:00 PM to 03:30 PM ), Venue: Jatiyo Kabi Kazi Nazrul Islam Bhaban** | | |

| Parallel Session (T5P5) | | Room No.: 204 |
|---|---|---|
| **Subject Area: Cognitive Science and Computational Biology, Quantum Computing, DNA Computing, and Optics** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **17** | N-CBZ-L-Phenylalanine Disrupts ErbB2 Homodimer Formation, Blocking Autophosphorylation and Downstream Signaling in Breast Cancer. | ***Session Chairs:*** Prof. Dr. Tarek Hasan Al Mahmud, Department of *ICT, IU*<br>*Prof. Dr. Md. Dulal Haque, ECE, HSTU*<br><br>***Session Co-Chair:*** *Md. Sazedur Rahman, EEE, HSTU* |
| **44** | In Silico Comparison of Methotrexate Derivatives as Inhibitors of Human Dihydrofolate Reductase (hDHFR) in Cancer Chemotherapy | |
| **257** | Identification of key genes associated with human milk production through single-cell transcriptomic profiles | |
| **344** | Spectral Characteristics and Predicted Toxicity of Organophosphate Pesticides: An In Silico Approach | |
| **382** | Plastic Waste and Marine Ecosystem Disruption: A Data-Driven Analysis of Ocean Pollution | |
| **387** | Identification of Bacterial Key Genes and Therapeutic Agents for Hypertensive Patients with Type 2 Diabetes Using Bioinformatics Approaches | |
| **451** | Visible Range Quasi-BIC Resonance in High-Index Dielectric Metasurface | |
| **462** | A Novel Approach to Strengthening Quantum Cybersecurity: Real-Time Cyber Attack Detection Using Machine Learning | |
| **538** | Computational Design of a Multi-Epitope Vaccine for Treponema denticola (strain ATCC 35405) | |
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| **Offline Technical Session 5 (19 July, 2025 at 02:00 PM to 03:30 PM ), Venue: Dr. Muhammad Qudrat-I-Khuda Bhaban** | | |
| **Parallel Session (T5P6)** | | **Room No.: 624** |
| **Subject Area: Network and Security** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **201** | Real-Time Network Intrusion Detection Using UFW Logs and Deep Learning with NSL-KDD Style Feature Engineering | ***Session Chairs:*** *Prof. Dr. Mst. Fateha Samad, Department of ETE, RUET*<br><br>*Dr. Md Nakib Hayat Chowdhury, Department of CSE, BAUST*<br><br>***Session Co-Chair:*** |
| **204** | Malware Detection Based on Static Features Using PE File Metadata | |
| **205** | Intelligent Automation Framework for Multi-Vendor Network Infrastructure | |
| **213** | Role of Artificial Intelligence in Modern Network Security | |
| **290** | Deepfake Detection for Social Media Disinformation Control in Bangladesh | |

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| **341** | Analysis of Lightweight Cryptography for Securing Industrial Resource-Constrained IoT Devices | *Kashfia Azad Tuba, Department of CSE, AIUB* |
| **389** | AI-Guided Sharded Blockchain Architecture for Secure Cross-Domain Data Sharing in Zero-Trust IoT Environments | |
| **400** | HRC-Cipher: A Hybrid Lightweight Reversal, Caesar, and Compression Based Text Encryption Scheme for Small-Scale and Educational Applications | |

| **Offline Technical Session 5 (19 July, 2025 at 02:00 PM to 03:30 PM ), Venue: Dr. Muhammad Qudrat-I-Khuda Bhaban** | |
|---|---|
| **Parallel Session (T5P7)** | **Room No.: 625** |
| **Subject Area: Network and Security, Database Technologies and Software Engineering** | |

| Paper ID | Paper Title | Session Chair(s) |
|---|---|---|
| **21** | Comparative Analysis of MongoDB and Hive for YouTube Data Analytics | ***Session Chairs:*** *Prof. Dr. Md Ahsan Habib, Department of ICT, MBSTU*<br><br>*Prof. Md. Mehedi Islam, Department of ECE, HSTU*<br><br>***Session Co-Chair:*** *Md. Kamal Hossain, Department of ECE, HSTU* |
| **410** | Network Centralities for diffusion and Adoption of Climate Smart Agriculture | |
| **411** | Development of Blockchain-based Framework for Certificate Verification and Fraud Prevention | |
| **429** | Enhancing Food Supply Chain Transparency and Efficiency through the Integration of IoT and Blockchain | |
| **543** | Seamless 6G Connectivity: AI-Based Handover Mechanisms for Hybrid Satellite-Terrestrial Networks | |
| **545** | Implementing Federal Blockchain In E-Voting: A Revolutionary Approach to Transparent Voting | |
| **561** | A Privacy-Preserving Federated Learning Framework for Smart Healthcare Using Blockchain and zk-SNARKs | |

| **Offline Technical Session 5 (19 July, 2025 at 02:00 PM to 03:30 PM ), Venue: Dr. Muhammad Qudrat-I-Khuda Bhaban** | |
|---|---|
| **Parallel Session (T5P8)** | **Room No.: 651** |
| **Subject Area: Signal Processing, Computer Vision, and Robotics** | |

| Paper ID | Paper Title | Session Chair(s) |
|---|---|---|
| **33** | Rapid EEG-Based Differential Diagnosis of Alzheimer's Diseases and Frontotemporal Dementia via Riemannian Geometry Features and Random Forest | ***Session Chairs:*** *Dr. Engr. Mohammed Sowket Ali, Department of CSE, BAUST* |
| **48** | Automated Lychee Leaf Disease Classification Using Fine-Tuned DenseNet-121 and Transfer Learning | |

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| **147** | Mango Variety Classification and Grading Using EfficientNet-B3 Deep Learning Architecture | *Sumonto Sarker, Department of ECE, HSTU*<br><br>***Session Co-Chair:***<br>*Dr. A F M Shahab Uddin, Department of CSE, JUST* |
| **284** | Vision-Based Smart Agriculture for Crop Monitoring and Disease Detection | |
| **301** | Efficient Motion-Based Prefiltering for Real-Time Video Classification on Edge Devices | |
| **340** | XAI-Driven ViT-GRU Deep Learning Framework for MRI-Based Brain Tumor Classification | |
| **418** | The Effect of Artifact Removal from EEG Signals on the Detection of Epileptic Seizures | |
| **426** | Vehicle Detection in Complex Scenarios: A Comparative Analysis of Transformers and Vision Language Model Approaches | |
| **443** | Comparative Electromyographic Analysis of Serratus Anterior Activation During Dumbbell and Barbell Bench Press in University Level Athletes | |

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| **Offline Technical Session 5 (19 July, 2025 at 02:00 PM to 03:30 PM ), Venue: Dr. Muhammad Qudrat-I-Khuda Bhaban** | | |
| **Parallel Session (T5P9)** | | **Room No.: 666** |
| **Subject Area: Signal Processing, Computer Vision, and Robotics, Soft Computing, Algorithms, and Computation** | | |
| **Paper ID** | **Paper Title** | **Session Chair(s)** |
| **38** | Analyzing the Impact of Data Types and Language Design on Merge Sort Execution Time | ***Session Chairs:***<br>*Prof. Dr. Md. Sadek Ali, Department of ICT, IU*<br><br>*Dr. Ileas Pramanik, Department of CSE, BRUR*<br><br>***Session Co-Chair:***<br>*Mr. Shah Md Tanvir Siddiquee, Department of CSE, DIU* |
| **244** | Optimized Exam Scheduling Using Bitmask Dynamic Programming | |
| **335** | A Study on Two Graph Problems: Upward Pointset Embeddability Testing and Minimum Consistent Subset | |
| **380** | Numerical Evaluation of Liquid Mixing in a '(Y-T)α' Micromixer Based on Split and Recombine Principle | |
| **425** | Exploring the Algorithm-Paradigm Interface: Insertion Sort in Diverse Programming Models | |
| **475** | SegViT-Med: A Vision Transformer for Precise Tumor Segmentation in Medical Imaging | |
| **476** | Surface Electromyographic Analysis of Biceps Brachii Activity During Dynamic Elbow Movements | |
| **481** | Material and techniques used in optical fibre refractometers based on lossy mode resonance | |
| **518** | A Comparative Study of Deep Learning Approaches for Lung and Colon Cancer Detection | |
| **552** | Exact Solutions and Qualitative Analysis of the Modified Korteweg–de Vries–Burgers Equation with Dissipation Effects | |