

2<sup>nd</sup> International Conference on Computing, Applications and Systems (COMPAS 2025)  
(23-24 October 2025, Kushtia, Bangladesh)  
**Conference Program (Online)**

| Program Highlights (Online)        |                                                                           |                                                                 |                                                                    |
|------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------|
| Day 1: 23 October, 2025 (Thursday) |                                                                           |                                                                 |                                                                    |
| 9:00 AM – 10:30 AM                 | Online Technical Session VA                                               |                                                                 |                                                                    |
|                                    | D1VA1<br>18, 59, 70, 91, 96,<br>104, 125, 281, 430                        | D1VA2<br>45, 51, 120, 211,<br>230, 355, 410, 450<br>578, 646    | D1VA3<br>77, 121, 167, 173,<br>176, 195, 209, 213<br>214, 552      |
| 10:30 AM – 12:00 PM                | Online Technical Session VB                                               |                                                                 |                                                                    |
|                                    | D1VB1<br>136, 161, 165 190,<br>223, 224, 261 293,<br>310                  | D1VB2<br>216, 240, 304, 305<br>309, 328, 339 686,<br>714        | D1VB3<br>356, 478, 545 549,<br>562, 575, 604 762,<br>810, 849      |
| 02:30 PM – 04:00 PM                | Online Technical Session VC                                               |                                                                 |                                                                    |
|                                    | D1VC1<br>131, 300, 402, 452,<br>473, 487, 495, 504,<br>527, 536           | D1VC2<br>127, 166, 286, 414,<br>512, 547, 586, 709,<br>797, 812 | D1VC3<br>94, 251, 368, 457,<br>486, 515, 816, 817,<br>827          |
| End of Day 1                       |                                                                           |                                                                 |                                                                    |
| Day 2: 24 October, 2025 (Friday)   |                                                                           |                                                                 |                                                                    |
| 09:00 AM – 10:30 AM                | Online Technical Session VA                                               |                                                                 |                                                                    |
|                                    | D2VA1<br>196, 635, 639, 657,<br>671, 673, 674, 691,<br>700, 819           | D2VA2<br>144, 146, 182, 210,<br>260, 520, 607, 668,<br>795, 838 | D2VA3<br>14, 97, 162, 516, 526,<br>703, 708, 468, 710,<br>793      |
| 10:30 AM – 12:00 PM                | Online Technical Session VB                                               |                                                                 |                                                                    |
|                                    | D2VB1<br>531, 532, 638, 722,<br>725, 731, 749, 750,<br>765, 784, 796, 804 | D2VB2<br>114, 637, 641, 729,<br>746, 747, 794, 829,<br>851, 884 | D2VB3<br>22, 86, 325, 567, 587,<br>609, 626, 712, 766,<br>813, 815 |
| End of Day 2                       |                                                                           |                                                                 |                                                                    |

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**Day 1 (Online) 23 October, 2025 (Thursday)**

| <b>D1VA1</b>                                                       |          |                                                                                                                                            |
|--------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Artificial Intelligence and Machine Learning</b> |          |                                                                                                                                            |
| 9:00 AM – 10:30 AM                                                 |          | Zoom Meeting ID: 936 4733 2012                                                                                                             |
|                                                                    |          | Zoom Meeting Link: <a href="https://bdren.zoom.us/j/93647332012">https://bdren.zoom.us/j/93647332012</a>                                   |
| <b>Session Chairs:</b>                                             |          |                                                                                                                                            |
| 1. Tarek Hasan Al Mahmud, ICT, IU                                  |          |                                                                                                                                            |
| 2. Dr. Abu Layek, CSE, JnU                                         |          |                                                                                                                                            |
| SL                                                                 | Paper ID | Title                                                                                                                                      |
| 1                                                                  | 18       | Smart and Power-Efficient Human Activity Recognition: A Deep Learning Approach for Low-Power Devices                                       |
| 2                                                                  | 59       | Calorie Estimation using Ensemble Technique from Recipes of Bangladeshi Foods                                                              |
| 3                                                                  | 70       | Fault Diagnosis of Electrical Motors from Multivariate Time-Series Data Using Hybrid Models                                                |
| 4                                                                  | 91       | FusionNet+: A Multi-Modal Deep Ensemble Architecture for Predicting Natural Disaster Severity and Economic Loss                            |
| 5                                                                  | 96       | Forecasting Crime Trends in Bangladesh Through a Pre and Post 2024 Political Shift Analysis Using Machine Learning                         |
| 6                                                                  | 104      | Implementation of a ROS 2 Framework for Mobile Robot Localization and Navigation Using AMCL and Nav2                                       |
| 7                                                                  | 125      | MB-CNN-LSTM-ATTN: An Optimized Deep Learning Model for Sleep Disorder Classification                                                       |
| 8                                                                  | 281      | Households Electricity Load Forecasting using Deep Learning Techniques: An Efficacy Analysis of Attention Mechanism for Hourly Forecasting |
| 9                                                                  | 430      | Dengue Prediction Using Google Search Trends: An Ensemble Machine Learning Approach                                                        |

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| D1VA2                                                                                                    |          |                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Internet of Things (IoT) and Data Analytics</b>                                        |          |                                                                                                                                                  |
| 9:00 AM – 10:30 AM                                                                                       |          | Zoom Meeting ID: 98844425436                                                                                                                     |
| Zoom Meeting Link: <a href="https://bdren.zoom.us/j/98844425436">https://bdren.zoom.us/j/98844425436</a> |          |                                                                                                                                                  |
| <b>Session Chairs:</b>                                                                                   |          |                                                                                                                                                  |
| 1. Dr. Mohammad Abul Kashem, CSE, DUET                                                                   |          |                                                                                                                                                  |
| 2. Dr. Sk. Shariful Alam, ECE, KUET                                                                      |          |                                                                                                                                                  |
| SL                                                                                                       | Paper ID | Title                                                                                                                                            |
| 1                                                                                                        | 45       | An IoT Based Smart Hybrid Firefighting Robot with 360° Visual Intelligence for Industrial Safety Applications                                    |
| 2                                                                                                        | 51       | Mental Health Risk Assessment in University Students: Integrating IoT Environmental Data with Hybrid Machine Learning                            |
| 3                                                                                                        | 120      | Design and Implementation of an IoT-based Smart Energy-Harvesting Badminton Court Using Piezoelectric and Solar System                           |
| 4                                                                                                        | 211      | Adaptive Trojan Detection in IoT Cyber-Physical Systems Using PUF-Based Security Architecture                                                    |
| 5                                                                                                        | 230      | AI-Driven Biotelemetry: Enhancing IoT-Based Human Area Networking with RedTacton for Smart Healthcare Using Nordic nRF7002 (paired with nRF5340) |
| 6                                                                                                        | 355      | LineCourier: A Semi-Autonomous Mobile Robot for Indoor Logistics                                                                                 |
| 7                                                                                                        | 410      | Cybersecurity Threats Prevention through PUF Based Dynamic Logic Morphing on IoT Edge Devices                                                    |
| 8                                                                                                        | 450      | Design and Analysis of a GSM and GPS-Based Smart Stick for Visually Challenged Persons with Real-Time Location Sharing and Obstacle Detection    |
| 9                                                                                                        | 578      | Lightweight ML-Based Air Quality Prediction for IoT and Embedded Applications                                                                    |
| 10                                                                                                       | 646      | Stress Prediction Among University Students Using Swarm Intelligence and Explainable AI                                                          |

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| D1VA3                                                                                                    |          |                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Image and Signal Processing</b>                                                        |          |                                                                                                                                                 |
| 9:00 AM – 10:30 AM                                                                                       |          | Zoom Meeting ID: 949 7999 6209                                                                                                                  |
| Zoom Meeting Link: <a href="https://bdren.zoom.us/j/94979996209">https://bdren.zoom.us/j/94979996209</a> |          |                                                                                                                                                 |
| <b>Session Chairs:</b>                                                                                   |          |                                                                                                                                                 |
| 1. Dr. Md. Habibur Rahman, CSE, IU                                                                       |          |                                                                                                                                                 |
| SL                                                                                                       | Paper ID | Title                                                                                                                                           |
| 1                                                                                                        | 77       | Graph-Augmented YOLO: A Hybrid Pipeline for Robust Brain Tumor Localization and Classification in MRI Scans                                     |
| 2                                                                                                        | 121      | Hybrid Vision Transformer and ResNet18 Framework for Multiclass Kidney Disease Detection from CT Scans                                          |
| 3                                                                                                        | 167      | A Dual Attention Mechanism-Based Enhanced Residual Network for Skin Cancer Detection                                                            |
| 4                                                                                                        | 173      | Satellite Image detection and classification by Convolutional Neural Network: A deep learning Approach                                          |
| 5                                                                                                        | 176      | A Hybrid Attention-Based ST-CNN and Penman-Monteith Framework for High-Resolution Soil Moisture Recharge Prediction Using Satellite Driven Data |
| 6                                                                                                        | 195      | NeuroSmear: An Explainable Deep Learning Technique for Malaria Parasite Detection from Blood Smear Images                                       |
| 7                                                                                                        | 209      | A Hybrid CNN-Transformer Knowledge Transfer Technique for Lightweight Skin Lesion Classification using Dermoscopic Image                        |
| 8                                                                                                        | 213      | A Robust Deep Learning Approach for Cardiovascular Disease Detection from Enhanced Paper-Based ECG Signals                                      |
| 9                                                                                                        | 214      | Interpretable Semantic Image Segmentation Using U-Net and Visual Diagnostics                                                                    |
| 10                                                                                                       | 552      | Explainable AI-Driven Tree-Selection Stacking Random Forest with Hybrid Feature Synthesis for Lung Cancer Survival Time Prediction              |

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| D1VB1                                                                                                    |          |                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Artificial Intelligence and Machine Learning</b>                                       |          |                                                                                                                                               |
| 10:30 AM – 12:00 PM                                                                                      |          | Zoom Meeting ID: 936 4733 2012                                                                                                                |
| Zoom Meeting Link: <a href="https://bdren.zoom.us/j/93647332012">https://bdren.zoom.us/j/93647332012</a> |          |                                                                                                                                               |
| <b>Session Chairs:</b>                                                                                   |          |                                                                                                                                               |
| 1. Dr. Muhibul Haque Bhuyan, EEE, AIUB                                                                   |          |                                                                                                                                               |
| 2. Dr. Md. Imran Hossain, ICE, PUST                                                                      |          |                                                                                                                                               |
| SL                                                                                                       | Paper ID | Title                                                                                                                                         |
| 1                                                                                                        | 136      | Comparative Performance Analysis of Supervised Models for Network Anomaly Detection                                                           |
| 2                                                                                                        | 161      | Strategic HR Management for Employee Retention: A Machine Learning Approach Using ANN                                                         |
| 3                                                                                                        | 165      | AI-Generated Content and Its Influence on Consumer Trust and Purchase Behaviour: Evidence from Bangladesh's E-Commerce Industry               |
| 4                                                                                                        | 190      | SmartCluster Decision Model (SCDM) A Hybrid Approach for Insider Threat Detection Using Clustering and Decision Trees with Iterative Feedback |
| 5                                                                                                        | 223      | XiMNet: A Lightweight Ensemble Framework for Detection of Harmful and Beneficial Insects                                                      |
| 6                                                                                                        | 224      | Examining the Determinants of Generative AI Utilization for SEO and Content Marketing: A TOE Approach in the Bangladeshi Digital Space        |
| 7                                                                                                        | 261      | RXK-VEM: A Novel Probabilistically Calibrated Hybrid Ensemble Model for Predicting Student Dropout in Higher Education                        |
| 8                                                                                                        | 293      | Exploring the Foundations of Academic Excellence: Advanced Data-Driven Approaches to Student Outcome Prediction                               |
| 9                                                                                                        | 310      | TinySenseNet: A Lightweight sEMG-IMU Fusion Network Using TinyML for Mechanical Arm Control in Low-Resource Settings                          |

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| D1VB2                                                                                                    |          |                                                                                                                        |
|----------------------------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Image and Signal Processing</b>                                                        |          |                                                                                                                        |
| 10:30 AM – 12:00 PM                                                                                      |          | Zoom Meeting ID: 98844425436                                                                                           |
| Zoom Meeting Link: <a href="https://bdren.zoom.us/j/98844425436">https://bdren.zoom.us/j/98844425436</a> |          |                                                                                                                        |
| <b>Session Chairs:</b>                                                                                   |          |                                                                                                                        |
| 1. Dr. Tanjim Mahmud, CSE, RSTU                                                                          |          |                                                                                                                        |
| 2. Dr. Sajeeb Saha, CSE, JnU                                                                             |          |                                                                                                                        |
| SL                                                                                                       | Paper ID | Title                                                                                                                  |
| 1                                                                                                        | 216      | Real-Time Brain Tumor Localization and Classification Using YOLOv11 and MONAI MedNeXt                                  |
| 2                                                                                                        | 240      | Chest X-ray Analysis for Pneumonia and Tuberculosis Detection using CNNs and Vision Transformers with Explainable AI   |
| 3                                                                                                        | 304      | BDaquaFish: A Comparative Study of YOLO11 and RT-DETR for Real-Time Detection of Bangladeshi Fish Species              |
| 4                                                                                                        | 305      | A Deep Learning Based Framework for Health Condition Detection in Budgerigars Using CNN                                |
| 5                                                                                                        | 309      | Multi-Track Audio Fusion for Emotion Recognition Using Machine and Deep Learning Techniques                            |
| 6                                                                                                        | 328      | LLM-Guided Multimodal Scene Captioning via Prompt-Based Fusion of Visual and Auditory Descriptions                     |
| 7                                                                                                        | 339      | High-Resolution Representation Learning with Customized Skeletons and Grad-CAM for Interpretable Human Pose Estimation |
| 8                                                                                                        | 686      | Deep Learning Based Potato Leaf Diseases Detection in Uncontrolled Agricultural Environment                            |
| 9                                                                                                        | 714      | SegMorphFormer: A Hybrid Transformer-Attention Model for Volumetric Brain Tumor Segmentation                           |

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| D1VB3                                                                                                    |          |                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Image and Signal Processing</b>                                                        |          |                                                                                                                                         |
| 9:00 AM – 10:30 AM                                                                                       |          | Zoom Meeting ID: 949 7999 6209                                                                                                          |
| Zoom Meeting Link: <a href="https://bdren.zoom.us/j/94979996209">https://bdren.zoom.us/j/94979996209</a> |          |                                                                                                                                         |
| <b>Session Chairs:</b>                                                                                   |          |                                                                                                                                         |
| 1. Dr. Anupam Kumar Boiragi, CSE, KU                                                                     |          |                                                                                                                                         |
| 2. Dr. Nasrin Sultana, ECE, HSTU                                                                         |          |                                                                                                                                         |
| SL                                                                                                       | Paper ID | Title                                                                                                                                   |
| 1                                                                                                        | 356      | Attention-Guided Neural Networks for Explainable Retinal Disease Detection in OCT Images                                                |
| 2                                                                                                        | 478      | NightLPBD: A YOLO-Based Single-Stage Framework for Nighttime License Plate Recognition                                                  |
| 3                                                                                                        | 545      | ViT-CBAM: An attention-based deep learning approach for Thoracic disease classification                                                 |
| 4                                                                                                        | 549      | Traffic Management using YOLO for Vehicle Fitness and License Plate Detection with Automated Alert System                               |
| 5                                                                                                        | 562      | Advanced Traffic Optimization and Automated Toll Collection System using Automated Number Plate Recognition and Modified YOLO Algorithm |
| 6                                                                                                        | 575      | Lip Landmark Aided Bengali Visual Speech Recognition leveraging Xception and Multi-GRU Architecture                                     |
| 7                                                                                                        | 604      | CarambolaCam A Hybrid Graph-Based Deep Learning Framework Using GCN and GAT for Carambola Leaf and Fruit Disease Classification         |
| 8                                                                                                        | 762      | CBAM integrated attention driven model for betel leaf diseases classification with Explainable AI                                       |
| 9                                                                                                        | 849      | Automatic Modulation Recognition in OTFS Systems Using Optimized SE-CNN Architecture                                                    |
| 10                                                                                                       | 810      | Edge-Optimized Knowledge Distillation Framework for Real-Time Carp Fish Freshness Detection                                             |

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**DIVC1**

Session Title: **Artificial Intelligence and Machine Learning**

02:30 PM – 04:00 PM

Zoom Meeting ID: 936 4733 2012

Zoom Meeting Link: <https://bdren.zoom.us/j/93647332012>

**Session Chairs:**

1. Dr. Sk Md Masudul Ahsan, CSE, KUET
2. Dr. Md Alamgir Hossain, ICT, IU

| SL | Paper ID | Title                                                                                                                                 |
|----|----------|---------------------------------------------------------------------------------------------------------------------------------------|
| 1  | 300      | CapsNet-Transformer Based Model for Violent Content Detection                                                                         |
| 2  | 402      | XAI-TransNet: Blood Cell Identification Using Deep Transfer Learning and Explainable AI Techniques                                    |
| 3  | 131      | SeANet: Sentiment Analysis in Social Media Comments on Bengali Mega Project using Transformer Learning                                |
| 4  | 452      | ACoD: Detecting Abusive Comments from Transliterated Bengali Text Using Deep Learning Techniques                                      |
| 5  | 473      | RoBERTaConvNet: A Retrieval-Augmented Deep Learning Framework for Intelligent Drug Efficacy Prediction                                |
| 6  | 487      | Multi-Modal Deep Learning for Stock Market Direction Prediction Using Time-Series Data                                                |
| 7  | 495      | Improving Colorectal Cancer Detection: Leveraging EfficientNet-B0 and Explainable AI for High-Accuracy Classification                 |
| 8  | 504      | Predictive Analytics for Human Resource Management: A Hybrid AI Model for Talent Acquisition and Retention                            |
| 9  | 527      | SMOTE-Enhanced Ensemble Learning for Hepatitis C Risk Stratification with Feature Importance Analysis                                 |
| 10 | 536      | Comparative Forecasting of Sustainable and Green Energy Demand Across Bangladesh's Divisions Using Classical and Deep Learning Models |

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| D1VC2                                            |          |                                                                                                                                      |
|--------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Algorithms and Computation</b> |          |                                                                                                                                      |
| 02:30 PM – 04:00 PM                              |          | Zoom Meeting ID: 98844425436                                                                                                         |
|                                                  |          | Zoom Meeting Link: <a href="https://bdren.zoom.us/j/98844425436">https://bdren.zoom.us/j/98844425436</a>                             |
| <b>Session Chairs:</b>                           |          |                                                                                                                                      |
| 1. Dr. Momtaz Begum, CSE, DUET                   |          |                                                                                                                                      |
| 2. Dr. Md. Shohidul Islam, CSE, IU               |          |                                                                                                                                      |
| SL                                               | Paper ID | Title                                                                                                                                |
| 1                                                | 127      | Mathematical Design and Analysis of Energy Aware Consensus Algorithms in Smart Grid Edge Systems                                     |
| 2                                                | 286      | Exploring Biomarkers and Pathways in Preeclampsia and Cardiovascular Diseases: A Bioinformatics and Machine Learning Approach        |
| 3                                                | 414      | Molecular Docking and Dynamics of Neem (Azadirachta indica) Phytochemicals for Binding Affinity and Stability Evaluation             |
| 4                                                | 586      | Integrating Machine Learning and Molecular Docking for EGFR Targeting in Lung Cancer: Predictive Models and Therapeutic Insights     |
| 5                                                | 709      | A Nature-Inspired Electric Eel Optimization Strategy for PID Tuning in DC Motor Speed Stabilization                                  |
| 6                                                | 512      | Artificial Intelligence for Fault Detection and Predictive Maintenance in Gas Turbine Operations                                     |
| 7                                                | 797      | Toward Inclusive AI: Building a Bangla Chatbot Using GPT-Neo and Optimized BPE Tokenizer                                             |
| 8                                                | 547      | A Bio-Optimized rule mining framework for finding frequent patterns of Myopia Risk Factors                                           |
| 9                                                | 812      | A Blockchain-Based Framework to Process and Validate Educational Certificates: Bangladesh Perspective                                |
| 10                                               | 166      | Understanding User Adoption of Cybersecurity Practices through Awareness and Perception for Enhancing Network Security in Bangladesh |

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| D1VC3                                                                                                    |          |                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Communications and Quantum Computing</b>                                               |          |                                                                                                                                    |
| 02:30 PM – 04:00 PM                                                                                      |          | Zoom Meeting ID: 949 7999 6209                                                                                                     |
| Zoom Meeting Link: <a href="https://bdren.zoom.us/j/94979996209">https://bdren.zoom.us/j/94979996209</a> |          |                                                                                                                                    |
| <b>Session Chairs:</b>                                                                                   |          |                                                                                                                                    |
| 1. Dr. Md. Imtiaz Hossain, CSE, Kyung Hee University                                                     |          |                                                                                                                                    |
| 2. Dr. Jashim Uddin, ICT, IU                                                                             |          |                                                                                                                                    |
| SL                                                                                                       | Paper ID | Title                                                                                                                              |
| 1                                                                                                        | 486      | Plain-Polarization Insensitive Epsilon-Negative Metamaterial Absorber for Wireless Communication Applications                      |
| 2                                                                                                        | 251      | Bandgap Engineering in WSeS Monolayers through Te Substitution: A DFT Study                                                        |
| 3                                                                                                        | 368      | Octa-Band Microstrip Antenna Covering L to Ku Bands for Next-Generation Wireless, Satellite, and Radar Applications                |
| 4                                                                                                        | 94       | SignNet-Nano: Efficient Sign Language Recognition for Real-Time Edge Deployment                                                    |
| 5                                                                                                        | 457      | Simultaneous Detection of Urea and Creatinine Using a Dual-Channel PCF-SPR Biosensor for Enhanced CKD Diagnostics                  |
| 6                                                                                                        | 515      | Uniaxial Tensile Mechanical Behavior and Deformation Mechanisms of Pristine and Defective SiGe Nanosheet: Molecular dynamics Study |
| 7                                                                                                        | 827      | Design and Comparative Performance of Topas and Zeonex Hexagonal-Lattice Photonic Crystal Fibers for Terahertz Wave Guidance       |
| 8                                                                                                        | 816      | Lip-Sync Analyzer for Deepfake Detection and Peeking Behind the Black Box with Explainable AI                                      |
| 9                                                                                                        | 817      | A Lightweighted CNN-Based Framework for Real-Time Bengali Sign Language Recognition and Translation                                |

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**Day 2: 24 October, 2025 (Friday)**

| D2VA1                                                              |          |                                                                                                                                       |
|--------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Artificial Intelligence and Machine Learning</b> |          |                                                                                                                                       |
| 9:00 AM – 10:30 AM                                                 |          | Zoom Meeting ID: 936 4733 2012                                                                                                        |
|                                                                    |          | Zoom Meeting Link: <a href="https://bdren.zoom.us/j/93647332012">https://bdren.zoom.us/j/93647332012</a>                              |
| <b>Session Chairs:</b>                                             |          |                                                                                                                                       |
| 1. Dr. Md. Milon Islam, CSE, KUET                                  |          |                                                                                                                                       |
| 2. Dr. Md. Humayun Kabir, EEE, IU                                  |          |                                                                                                                                       |
| SL                                                                 | Paper ID | Title                                                                                                                                 |
| 1                                                                  | 196      | A VHDL Approach to Map the Switches for LED on Xilinx Spartan–6 FPGA                                                                  |
| 2                                                                  | 635      | Advancing Brain Stroke Prediction Through Attention-Based Neural Architectures for Temporal Data Analysis                             |
| 3                                                                  | 639      | SecureGrid: A Robust Voting Ensemble Model for Non-Technical Loss (NTL) Detection in Smart Meter Data                                 |
| 4                                                                  | 657      | CardioAI-Risk: An Interpretable and Fair Machine Learning Pipeline for Personalized Cardiovascular Risk Stratification                |
| 5                                                                  | 671      | Enhancing Intrusion Detection in Cyber-Physical Systems: A Hybrid Graph Neural Network and Explainable AI Approach for Classification |
| 6                                                                  | 673      | Wellness Wizard: Predicting Diabetes Risk from Lifestyle Factors Using Explainable Machine Learning Algorithms                        |
| 7                                                                  | 674      | StackTrace-AI: Identifying Generative AI Text Origins using Ensemble Learning                                                         |
| 8                                                                  | 691      | Cybersecurity and Privacy Threats in Social-Media: Extracting and Classifying Leaked Personal Information Using Machine Learning      |
| 9                                                                  | 700      | Predicting Potential Drug Candidates Using Machine Learning Models And Regression Analysis                                            |
| 10                                                                 | 819      | Real-Time Incremental Transformer with Continual Learning for Adaptive Phishing Email Detection                                       |

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| D2VA2                                                                                                    |          |                                                                                                                          |
|----------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Language and Speech Processing</b>                                                     |          |                                                                                                                          |
| 10:30 AM – 12:00 PM                                                                                      |          | Zoom Meeting ID: 98844425436                                                                                             |
| Zoom Meeting Link: <a href="https://bdren.zoom.us/j/98844425436">https://bdren.zoom.us/j/98844425436</a> |          |                                                                                                                          |
| <b>Session Chairs:</b>                                                                                   |          |                                                                                                                          |
| 1. Dr. Monira Islam, EEE, KUET                                                                           |          |                                                                                                                          |
| SL                                                                                                       | Paper ID | Title                                                                                                                    |
| 1                                                                                                        | 146      | A Dual-Mode LLM Framework for Medical and General Language Translation for Breaking Barriers in Healthcare Communication |
| 2                                                                                                        | 182      | Comparative Analysis of Seq2Seq Model to Transformation of Bangla Dialects to Standard Bangla Language                   |
| 3                                                                                                        | 210      | Emotion Detection in Speech Using Lightweight and Transformer-Based Models: A Comparative and Ablation Study             |
| 4                                                                                                        | 260      | Real-Time Narrative Generation: A Framework for API-Driven Story Summarization Using Pre-Trained Language Models         |
| 5                                                                                                        | 520      | Development And Enhancement Of Bengali Paraphrasing Model Using Domain Specific Knowledge                                |
| 6                                                                                                        | 607      | AI-Driven Insights into Hate Speech: Dataset Comparisons and Interpretability Using SHAP and LIME                        |
| 7                                                                                                        | 668      | Bangla Speech to IPA Transcription: A Multi-Stage Transformer-Based Approach                                             |
| 8                                                                                                        | 795      | Contextual Language Modeling for Bangla Using Word Embeddings                                                            |
| 9                                                                                                        | 838      | DChakma: A Deep Learning Framework for Part-of-Speech Tagging in Chakma Language                                         |
| 10                                                                                                       | 144      | A Hybrid Approach towards Multi-Label Semi-Supervised Emotion Classification                                             |

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| <b>D2VA3</b>                               |          |                                                                                                                               |
|--------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Network and Security</b> |          |                                                                                                                               |
| 9:00 AM – 10:30 AM                         |          | Zoom Meeting ID: 949 7999 6209                                                                                                |
|                                            |          | Zoom Meeting Link: <a href="https://bdren.zoom.us/j/94979996209">https://bdren.zoom.us/j/94979996209</a>                      |
| <b>Session Chairs:</b>                     |          |                                                                                                                               |
| 1. Dr. A. B. M. Aowlad Hossain, ECE, KUET  |          |                                                                                                                               |
| 2. Dr. Al-Mahmud, CSE, KUET                |          |                                                                                                                               |
| SL                                         | Paper ID | Title                                                                                                                         |
| 1                                          | 14       | Intrusion Detection System: An Optimization Based Deep Learning Approach Using NSL-KDD Dataset                                |
| 2                                          | 97       | Harnessing Blockchain and AI for Innovative Solutions in Land Administration in Bangladesh                                    |
| 3                                          | 162      | Deepfake Detection in MIS: Leveraging DenseNet and Multi-Scale Information for Enhanced Digital Forensics                     |
| 4                                          | 516      | Intrusion Detection System (IDS) for Power System Control Networks Using Ensemble Learning                                    |
| 5                                          | 526      | A Web-Based Blockchain Framework to Prevent Counterfeit Medicines via QR Code Verification                                    |
| 6                                          | 703      | Enhancing Security in Multicasting Over Nakagami-0.5 Fading Channel with Selection Combining Schemes                          |
| 7                                          | 708      | Evaluating the Efficacy of Explainable Machine Learning Algorithms for the Detection and Classification of Network Intrusions |
| 8                                          | 468      | Forecasting Solar Irradiance in Southern Bangladesh using Transformer-Based Approaches                                        |
| 9                                          | 710      | An Attention-Optimized Enhanced YOLOv11 Architecture for Real-Time Breast Cancer Detection                                    |
| 10                                         | 793      | Cost-Effective High-Reliability IoT-Based Multi-Modal Patient Monitoring with Real-Time Clinical Alerts and Cloud Analytics   |

2<sup>nd</sup> International Conference on Computing, Applications and Systems (COMPAS 2025)  
(23-24 October 2025, Kushtia, Bangladesh)  
**Conference Program (Online)**

| D2VB1                                                              |          |                                                                                                                                       |
|--------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Artificial Intelligence and Machine Learning</b> |          |                                                                                                                                       |
| 10:30 AM – 12:00 PM                                                |          | Zoom Meeting ID: 936 4733 2012                                                                                                        |
|                                                                    |          | Zoom Meeting Link: <a href="https://bdren.zoom.us/j/93647332012">https://bdren.zoom.us/j/93647332012</a>                              |
| <b>Session Chairs:</b>                                             |          |                                                                                                                                       |
| 1. Dr. Md. Nazrul Islam, CSE, MIST                                 |          |                                                                                                                                       |
| 2. Dr. Sheikh Md. Rabiul Islam, ECE, KUET                          |          |                                                                                                                                       |
| SL                                                                 | Paper ID | Title                                                                                                                                 |
| 1                                                                  | 722      | Assessing the Impact of Architectural Design in Deep Learning Models for Fundus-Based Ocular Disease Detection                        |
| 2                                                                  | 725      | Ensemble Deep Learning for Brain Tumor Classification Using MRI: A Comparative Study of CNN Architectures                             |
| 3                                                                  | 731      | ColoNetBlock: Attention Enhanced CNN for Colorectal Cancer Classification with Visual Explanation                                     |
| 4                                                                  | 532      | Assessing and Mitigating Intersectional Bias: A Multi-Domain Study on Race and Gender                                                 |
| 5                                                                  | 749      | Crop Recommendation: A Technology-Driven Approach to Enhancing Agricultural Productivity                                              |
| 6                                                                  | 750      | A FixMatch-Driven Semi-Supervised Learning Framework for Diabetic Foot Ulcer Detection                                                |
| 7                                                                  | 765      | Explainable Fake News Detection: A Comparative Framework Using Classical, Deep, and Transformer Models                                |
| 8                                                                  | 784      | Explainable and Uncertainty-Aware CO2 Emissions Forecasting Using Quantile Gradient Boosting, SHAP, and Logistic Trend Classification |
| 9                                                                  | 796      | Rainfall Prediction Using Exploratory Data Analysis and Machine Learning                                                              |
| 10                                                                 | 804      | Non-Invasive Estimation of Erythrocyte Sedimentation Rate from PPG Signals Using Machine Learning                                     |
| 11                                                                 | 531      | Transformer-Based Classification of Protein Secondary Structures Using ESM2 and BiLSTM                                                |
| 12                                                                 | 638      | Enhancing Question Answering System using Ensemble Learning Approach                                                                  |

2<sup>nd</sup> International Conference on Computing, Applications and Systems (COMPAS 2025)  
(23-24 October 2025, Kushtia, Bangladesh)  
**Conference Program (Online)**

**D2VB2**

Session Title: **Image and Signal Processing**

10:30 AM – 12:00 PM

Zoom Meeting ID: 98844425436

Zoom Meeting Link: <https://bdren.zoom.us/j/98844425436>

**Session Chairs:**

1. Dr. Md. Sipon Miah, ICT, IU

| SL | Paper ID | Title                                                                                                                               |
|----|----------|-------------------------------------------------------------------------------------------------------------------------------------|
| 1  | 637      | Automated Plastic Waste Detection Using Advanced Deep Learning Frameworks                                                           |
| 2  | 641      | Multiclass Skin Lesion Classification Using EfficientNetB4 and a Custom Feed-Forward Neural Network                                 |
| 3  | 729      | Tea Leaves Under the Lens of AI: A Comparative Deep Learning Perspective                                                            |
| 4  | 746      | A FixMatch-Based Semi-Supervised Learning Framework for Histopathology Image Classification                                         |
| 5  | 747      | Self-Supervised Learning for Tomato Leaf Disease Classification: A Comparative Study of SimCLR, MoCo, and BYOL                      |
| 6  | 829      | Scalable RNN-Based Transfer Learning for Patient Sentiment Monitoring in Telehealth Platforms                                       |
| 7  | 851      | ViT-SAGE: A Hybrid Vision Transformer based Architecture with Graph Neural Network Fusion for Precise Kidney Disease Classification |
| 8  | 884      | Down Syndrome Prediction from Facial Image Dataset using Explainable Deep Learning                                                  |
| 9  | 794      | Edge-to-Cloud Orchestrated Multi-Sensor IoT Framework for Real-Time WQI Classification and Predictive Assessment via Ensemble ML    |
| 10 | 114      | Satellite-Based Air Quality Assessment over HSIA, Dhaka:Using Statistical and Deep Learning Models                                  |

2<sup>nd</sup> International Conference on Computing, Applications and Systems (COMPAS 2025)  
(23-24 October 2025, Kushtia, Bangladesh)  
**Conference Program (Online)**

| D2VB3                                                                                                    |          |                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Session Title: <b>Internet of Things (IoT) and Data Analytics</b>                                        |          |                                                                                                                                                                       |
| 10:30 AM – 12:00 PM                                                                                      |          | Zoom Meeting ID: 949 7999 6209                                                                                                                                        |
| Zoom Meeting Link: <a href="https://bdren.zoom.us/j/94979996209">https://bdren.zoom.us/j/94979996209</a> |          |                                                                                                                                                                       |
| <b>Session Chairs:</b>                                                                                   |          |                                                                                                                                                                       |
| 1. Dr. Md. Shamim Hossain, CSE, IU                                                                       |          |                                                                                                                                                                       |
| 2. Dr. Sk. Imran Hossain, CSE, KUET                                                                      |          |                                                                                                                                                                       |
| SL                                                                                                       | Paper ID | Title                                                                                                                                                                 |
| 1                                                                                                        | 587      | Health Monitoring of Distribution Transformer Using DGA and Furan Analysis: A Diagnostic Approach for Predicting Insulation Aging                                     |
| 2                                                                                                        | 609      | An Internet-of-Disease (IoD) Based Real-Time ECG Monitoring Framework Using YOLOv11 for Smart Healthcare Applications                                                 |
| 3                                                                                                        | 712      | Unsupervised Anomaly Detection for Smart IoT Devices: Performance and Resource Comparison                                                                             |
| 4                                                                                                        | 766      | An Optimized Decision Tree-Based Framework for Explainable IoT Anomaly Detection                                                                                      |
| 5                                                                                                        | 813      | An AI-IoT Based Smart Wheelchair with Gesture-Controlled Mobility, Deep Learning-Based Obstacle Detection, Multi-Sensor Health Monitoring, and Emergency Alert System |
| 6                                                                                                        | 815      | Design and Implementation of an IoT-Based Smart Grid-Connected Solar Power Station for Efficient Energy Management                                                    |
| 7                                                                                                        | 567      | A Novel CNN-BiLSTM Model with MultiHead Attention for Efficient Intrusion Detection                                                                                   |
| 8                                                                                                        | 325      | Explainable AI Based Multi-Class Pneumonia Classification and Anomaly Detection from Chest X-ray                                                                      |
| 9                                                                                                        | 86       | Plain-Polarization Insensitive Epsilon-Negative Metamaterial Absorber for Wireless Communication Applications                                                         |
| 10                                                                                                       | 626      | An Empirically-Validated Vision-Based Reactive Control Framework for Low-Cost Robotic Ground Object Manipulator in Dynamic Environments                               |
| 11                                                                                                       | 22       | Towards Developing an AI-Enhanced Blockchain-Based Real Estate Management System                                                                                      |