

Technical Program

(All times are in Bangladesh Standard Time (BST) - GMT+6:00)

| Day 1: December 19, 2024, Thursday Day-long Conference Tour to The Sundarbans | |
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| Day 2: December 20, 2024, Friday | |
| 9:00 AM – 9:30 AM | Registration |
| 9:30 AM – 10:30 AM | Keynote by Mohammed Atiquzzaman, The University of Oklahoma, USA <i>Title: “Car-to-car Communication-enabled Internet of Vehicles”</i> Session Chair: M. Kaykobad, BRAC University |
| 10:30 AM – 11:15 AM | Invited Talk by Md Rizwan Parvez, Qatar Computing Research Institute, Qatar Session Chair: A.K.M. Ashikur Rahman, BUET |
| 11:15 AM – 11:30 AM | Tea break and networking |
| 11:30 AM – 12:00 PM | Technical Paper Presentation Session: Innovations in Image and Video Processing <ul style="list-style-type: none">Efficient Real-Time Video Colorization on Low-End CPUs via Pruning and Quantization <i>Khondker Salman Sayeed (IQVIA), Haz Sameen Shahgir (University of California Riverside), Tamzeed Mahfuz (Bangladesh University of Engineering and Technology), Satak Kumar Dey (Bangladesh University of Engineering and Technology), M. Saifur Rahman (Bangladesh University of Engineering and Technology)</i>Intrusion Detection Using Convolutional Neural Network: A Color Mapping Approach on NSL-KDD Dataset <i>Md. Abrar Faiaz (Bangladesh University of Engineering and Technology), Dipankar Mitra (Bangladesh University of Engineering and Technology), Ranat Das Prangon (Bangladesh University of Engineering and Technology)</i>Image Contrast Enhancement Using Fuzzy Logic with Metaheuristics <i>Mohimenul Kabir (National University of Singapore), Jaiaid Mobin (Rochester Institute of Technology), Ahmad Hassanat (Mutah University), M. Sohel Rahman (Bangladesh University of Engineering and Technology)</i> Session Chair: Mahmuda Naznin, BUET |
| 12:00 PM – 12:30 PM | Technical Paper Presentation Session: Novel Architectures for ML and NLP <ul style="list-style-type: none">XLNet-CNN: Combining Global Context Understanding of XLNet with Local Context Capture through Convolution for Improved Multi-Label Text Classification <i>Asif Shahriar (Brac University), Debojit Pandit (Bangladesh University of Engineering and Technology), M. Saifur Rahman (Bangladesh University of Engineering and Technology)</i>Assessing ChatGPT’s Code Generation Capabilities with Short vs Long Context Programming Problems <i>Uddip Acharjee Shuvo (University of Dhaka), Sajib Acharjee Dip (Virginia Tech), Nirvar Roy Vaskar (American International University Bangladesh), A. B. M. Alim Al Islam (Bangladesh University of Engineering and Technology)</i> |

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| | <ul style="list-style-type: none"> Enhancing Graph Representation Learning with WalkLM for Effective Community Detection <i>Hyun Lee (Trinity College), Maminur Islam (Trinity College), Chris Yi (Trinity College), Chandranil (Nil) Chakrabortii (Trinity College), Hyun Lee (Trinity College)</i> <p>Session Chair: Muhammad Masroor Ali, BUET</p> |
| 12:30 PM – 2:15 PM | Prayer break, lunch, and networking |
| 2:15 PM – 2:45 PM | Business Meeting |
| 2:45 PM – 3:15 PM | <p>Technical Paper Presentation Session: AI in Health and Well-being</p> <ul style="list-style-type: none"> Enhancing Sleep Disorder Diagnosis with a Machine Learning Approach Using Ensemble Neural Networks <i>Md Samiul Alom (International University of Business Agriculture and Technology), Samiha Maisha Jeba (International University of Business Agriculture and Technology), Angkon Debnath (International University of Business Agriculture and Technology), Tanjim Taharat Aurpa (Bangabandhu Sheikh Mujibur Rahman Digital University), Rifat Siddiqua (Govt. College of Applied Human Science)</i> MonChitro: Unveiling the Stress and Depression About Future Among Undergraduate Students <i>Syed Zuhair Hossain (Brac University), Anika Tahsin Miami (Brac University), Jannatun Noor (Brac University)</i> Enhancing EmoBot: An In-Depth Analysis of User Expectation and Satisfaction in an Emotion-Aware Chatbot <i>Taseen Mubassira (Bangladesh University of Engineering and Technology), Mehedi Hasan (Bangladesh University of Engineering and Technology), Jannatun Noor (Bangladesh University of Engineering and Technology), A. B. M. Alim Al Islam (Bangladesh University of Engineering and Technology)</i> <p>Session Chair: Mohammad Mahfuzul Islam, BUET</p> |
| 3:15 PM – 3:45 PM | <p>Technical Paper Presentation Session: Machine Learning for Agriculture and Sustainability</p> <ul style="list-style-type: none"> Knowledge Distillation and Weight Pruning for Two-Step Compression of ConvNets in Rice Leaf Disease Classification <i>Tashik Ahmed (Brac University), Sumaitha Jannat (Brac University), Abdullah Rahat (Brac University), Jarin Akter Mou (Brac University), Md. Farhadul Islam (Brac University), Jannatun Noor (Brac University)</i> Sound-Based Fault Detection in Knitting Machine <i>Md. Washiur Rahman (Bangladesh University of Textiles), Tafannum Mahjabeen (Bangladesh University of Textiles), Tarik Reza Toha (Bangladesh University of Textiles), Sultana Umme Habiba (Bangladesh University of Textiles), Shaikh Md. Mominul Alam (Bangladesh University of Textiles)</i> Connecting Mobile Money: Understanding the Adoption and Usage of Mobile Financial Services (MFS) by Low-Income Internal Migrant Workers in Dhaka <i>Md. Alvee Ehsan (Brac University), Farhan Feroz (Brac University), Mahpara Chowdhury (Brac University), Jannatun Noor (Brac University)</i> <p>Session Chair: Md. Monirul Islam, BUET</p> |

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| 3:45 PM – 4:00 PM | Prayer break, snacks, and networking |
| 4:00 PM – 4:30 PM | <p>Technical Paper Presentation Session: Optimization in Systems and Networks</p> <ul style="list-style-type: none"> • An Efficient Burst Traffic-Aware Clustering and Mobility Management Model for Mobile-Sink Based Heterogeneous Wireless Sensor Networks <i>Md. Abu Yousuf Siam (Jagannath University), Fahim Hasan (Jagannath University), Selina Sharmin (Jagannath University), Sajeeb Saha (Jagannath University)</i> • Performance Improvement of Redundant Requests in Distributed Systems <i>Santa Maria Shithil (Stony Brook University), Muhammad Abdullah Adnan (Bangladesh University of Engineering and Technology)</i> • Monitoring Yarn Shade Variation Using Computer Vision Techniques <i>Pritom Goswami (Bangladesh University of Textiles), Md. Asadul Islam (Bangladesh University of Textiles), Md. Washiur Rahman (Bangladesh University of Textiles), Avishek Das Gupta (Bangladesh University of Textiles), Md Harunur Rashid Bhuiyan (Texas Tech University), Sultana Umme Habiba (Bangladesh University of Textiles), Anupom Mondol (Texas Tech University), Tarik Reza Toha (University of North Carolina at Chapel Hill), Shaikh Md. Mominul Alam (Bangladesh University of Textiles)</i> <p>Session Chair: Mohammed Eunos Ali, BUET</p> |
| 4:30 PM – 5:20 PM | <p>Short Paper Presentation Session: Systems and Security</p> <ul style="list-style-type: none"> • Dementia Patient Health, Prescriptions ML Dataset: LightGBM Classification of XAI-based LIME and SHAP for Dementia Detection <i>Fariha Jahan (American International University Bangladesh), Sirajum Munira Shifat (American International University Bangladesh), Fatema Zohra Anannya (American International University Bangladesh), Sakib Mostafa (University of Calgary), Md. Manzurul Hasan (American International University Bangladesh)</i> • “It’s Too Hot Under the Sun”: Unveiling the Impact of Prolonged Heat Exposure on Rickshaw Pullers’ Brainwaves <i>Maoyejatun Hasana (Bangladesh University of Engineering and Technology), Masfiqur Rahaman (University of California San Diego), Razin Reaz Abedin (Bangladesh University of Engineering and Technology), Md Toki Tahmid (Bangladesh University of Engineering and Technology), Ishika Tarin (Bangladesh University of Engineering and Technology), Sudipa Saha (Bangladesh University of Engineering and Technology), Sutapa Dey Tithi (Bangladesh University of Engineering and Technology), Zarin Tasnim Promi (Bangladesh University of Engineering and Technology), Kazi Abdun noor (Bangladesh University of Engineering and Technology), MD Zahidul Islam Sanjid (Brac University), Mahir Shahriar Dhrubo (Bangladesh University of Engineering and Technology), Samira Akter (Bangladesh University of Engineering and Technology), Tauhidur Rahman (University of California San Diego), A. B. M. Alim Al Islam (Bangladesh University of Engineering and Technology)</i> • Prediction of Yarn Fineness Using Computer Vision Based Techniques <i>Asef Rahman Dipto (Bangladesh University of Textiles), Md. Shahriar Istiaqe (Bangladesh University of Textiles), Nazmul Islam</i> |

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| | <p><i>(Bangladesh University of Textiles), Sultana Umme Habiba (Bangladesh University of Textiles), Tarik Reza Toha (University of North Carolina at Chapel Hill), Shaikh Md. Mominul Alam (Bangladesh University of Textiles)</i></p> <ul style="list-style-type: none"> • Detecting and Decoding: A YOLO-Transformer Hybrid Model for Bangla License Plate Recognition <i>Nurayad Nafiz Islam (Bangladesh University of Engineering and Technology and Spectrum Software & Consulting (Pvt.) Ltd. (SSCL)), Sadia Afroz (Spectrum Software & Consulting (Pvt.) Ltd. (SSCL)), Md. Faizul Bari (Spectrum Software & Consulting (Pvt.) Ltd. (SSCL)), A. B. M. Alim Al Islam (Bangladesh University of Engineering and Technology)</i> • Predicting and Analyzing EV Energy Consumption in Bangladesh : A Machine Learning Approach <i>F.M.Mahmudul Haque (Ahsanullah University of Science and Technology), Humayra Tabassum (Ahsanullah University of Science and Technology), Md Fazal Amin (Ahsanullah University of Science and Technology), Md Nazrul Islam Jony (Ahsanullah University of Science and Technology), Shamik Dey (Ahsanullah University of Science and Technology), Adnan Quaium (Ahsanullah University of Science and Technology)</i> • Revealing the Self: Brainwave-Based Human Trait Identification <i>Md Mirajul Islam (Bangladesh University of Engineering and Technology and North Carolina State University), Md Nahiyar Uddin (Bangladesh University of Engineering and Technology and The University of Texas at Dallas), Maoyejatun Hasana (Bangladesh University of Engineering and Technology), Debojit Pandit (Bangladesh University of Engineering and Technology), Nafis Mahmud Rahman (Independent student graduated from Sunbeams), Sriram Chellappan (University of South Florida), Dr Sami Azam (Charles Darwin University), A. B. M. Alim Al Islam (Bangladesh University of Engineering and Technology)</i> <p>Session Chair: Anindya Iqbal, BUET</p> |
| 7:00 PM– 8:00 PM | <p>BUET ACM Chapter Talk by <i>Akond Ashfaque Ur Rahman, Auburn University, USA</i> <i>Muhammad Lutfor Rahman, California State University San Marcos, USA</i></p> <p>Session Chair: Rezwana Reaz, BUET</p> |
| Day 3: December 21, 2024, Saturday | |
| 9:00 AM – 10:00 AM | <p>Keynote by <i>Shahriar Nirjon, University of North Carolina at Chapel Hill, USA</i></p> <p>Session Chair: Mohammad Saifur Rahman, BUET</p> |
| 10:00 AM – 10:45 AM | <p>Invited Talk by <i>Golam Md Muktadir, Google, USA</i></p> <p>Session Chair: Rifat Shahriyar, BUET</p> |
| 10:45 AM – 11:00 AM | Tea break and networking |
| 11:00 AM – 11:30 AM | <p>Technical Paper Presentation Session: Explainable AI and Bias Mitigation</p> <ul style="list-style-type: none"> • Explainable AI Discloses Gender Bias in Sexism Detection Algorithm <i>Fahim Muntasir (Brac University), Jannatun Noor (Brac University, Dhaka)</i> |

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| | <ul style="list-style-type: none"> Identifying Influences: A Machine Learning and Explainable AI Approach to Analyzing Social Media Addiction Resulting from Academic Frustration <i>Ishmam Bin Rofi (Brac University), Mashiyat Mahjabin Eshita (Brac University), Md. Sabbir Ahmed (Brac University), Jannatun Noor (Brac University)</i> Can Features for Phishing URL Detection Be Trusted Across Diverse Datasets? A Case Study with Explainable AI <i>Maraz Mia (Tennessee Tech University), Darius Derakhshan (Tennessee Tech University), Mir Mehedi Ahsan Pritom (Tennessee Tech University)</i> <p>Session Chair: Md. Shamsuzzoha Bayzid, BUET</p> |
| 11:30 AM – 12:00 PM | <p>Technical Paper Presentation Session: Advances in Security and Privacy</p> <ul style="list-style-type: none"> Explainable Deep Learning for Cyber Attack Detection in Electric Vehicle Charging Stations <i>Md Mizanur Rahman (University of New South Wales), Md Meheraz Hossain Chayan (Brac University), Khaleda Mehrin (Bangladesh Bureau of Educational Information and Statistics), Afrin Sultana (Bangladesh University of Professionals), Mosaab M. Hamed (University of New South Wales)</i> A Confidentiality-Preserving Distributed Linear Programming Model for Solving Large-Scale Economic Dispatch Problems <i>Md. Turab Hossain (Bangladesh University of Engineering and Technology), Md. Alamin Hossain (Bangladesh University of Engineering and Technology), Muhammad Abdullah Adnan (Bangladesh University of Engineering and Technology)</i> Benchmarking Fully Homomorphic Encryption Libraries in IoT Devices <i>Taimur Rahman (United International University), Anas Mohammad Ishfaqul Muktadir Osmani (United International University), Mohammad Shahriar Rahman (United International University), Mir Moynuddin Ahmed Shibly (United International University), Salekul Islam (North South University)</i> <p>Session Chair: Jannatun Noor Mukta, UIU</p> |
| 12:00 PM – 12:30 PM | <p>Technical Paper Presentation Session: AI in Education and Productivity</p> <ul style="list-style-type: none"> WiFi Received Signal Strength (RSS) Based Automated Attendance System for Educational Institutions <i>Sidratul Muntaha Khan (Bangladesh University of Engineering and Technology), Mehreen Tabassum Maliha (Bangladesh University of Engineering and Technology), Md Shahedul Haque (Virginia Tech), Ashikur Rahman (Bangladesh University of Engineering and Technology)</i> User Interface Design of a Functional CQI Module in OBE Nexus: An Iterative Design Approach <i>Rashedul Amin Tuhin (Bangladesh University of Engineering and Technology), A. B. M. Alim Al Islam (Bangladesh University of Engineering and Technology)</i> Human-Machine Collaboration at the Tollbooth: Perceptions and Requirements of Toll Workers in the Age of AI and IoT <i>Nuraiyad Nafiz Islam (Bangladesh university of Engineering and Technology), A. B. M. Alim Al Islam (Bangladesh University of Engineering and Technology)</i> <p>Session Chair: Tanzima Hashem, BUET</p> |

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| 12:30 PM – 1:10 PM | <p>Short Paper Presentation Session: Modeling, Analysis, and Analytics</p> <ul style="list-style-type: none"> • Elevesa: A Computer Vision-Based Approach for Smart Elevating <i>Mirza Abbas Uddin (United International University), Sanjana Hossain Sonali (United International University), Raiyan Rahman (United International University)</i> • A Cloud-based Distributed Approach for Social Media Sentiment Analysis using Machine Learning with Distributed Hyperparameter Tuning <i>Sanzana Karim Lora (Bangladesh University of Engineering and Technology), Istiak Ahmed (Bangladesh University of Engineering and Technology), Muhammad Abdullah Adnan (Bangladesh University of Engineering and Technology)</i> • AI-Driven Disaster Warning System: Integrating Predictive Data with LLM for Contextualized Guideline Generation <i>Md. Abrar Faiaz (Bangladesh University of Engineering and Technology), Nowshin Nawar (University of Dhaka)</i> • SuperArchitecture: A New Approach for Reconnaissance over Data Centers Considering Architectural Alternatives <i>Iftikharun Nisa Sheikh (Bangladesh University of Engineering and Technology), Md. Nazmus Sakib (Bangladesh University of Engineering and Technology), Md Mozammel Hoque (University of Houston), Imdadul Hasan Hamim (Bangladesh University of Engineering and Technology), Jannatun Noor (Brac University), A. B. M. Alim Al Islam (Bangladesh University of Engineering and Technology)</i> • Storage Reduction of Private Blockchain with Sharding and Community Based Clustering <i>Md. Mizanur Rahman (Bangladesh University of Engineering and Technology), Muhammad Abdullah Adnan (Bangladesh University of Engineering and Technology)</i> <p>Session Chair: A. B. M. Alim Al Islam, BUET</p> |
| 1:10 PM – 2:00 PM | Prayer break, lunch, and networking |
| 2:00 PM – 3:45 PM | Students' Poster Session (3-minute oral presentation per poster) Moderator: Rezwana Reaz, BUET |
| 3:45 PM – 4:00 PM | Prayer break, snacks, and networking |
| 4:00 PM – 5:20 PM | Students' Poster Session (3-minute oral presentation per poster) Moderator: Rezwana Reaz, BUET [continued] |
| 5:20 PM – 5:45 PM | Prayer break |
| 5:45 PM – 6:45 PM | Industry Session (by valued sponsors) Theme - "From Research to Development: Cultivating Synergy between Academia and Industry in Bangladesh" Moderator: Mohammad Saifur Rahman, BUET |
| 6:45 PM – 7:00 PM | Prayer break |
| 7:00 PM – 8:30 PM | Closing Session, Award Giving Ceremony, and Banquette Dinner |