

# ETCCE 2021

International Conference on Emerging Technology  
in Computing, Communication and Electronics

Dhaka, December 21-23, 2021



## Conference Program

(all times are given in Bangladesh Local Time GMT +6)

### Day 1: December 21, 2021 Tuesday

**Opening Ceremony 9:00 AM-10:00 AM**

**Chief Guest:**

Dr. Saifur Rahman, 2022 IEEE President Elect and Professor, Virginia Tech

**Special Guests:**

Mr Moinuddin Hasan Rashid, Chairman and Managing Director, United Group and Joint General Secretary, United International University

Prof. Prashant Pillai, Associate Dean Research and Knowledge Exchange, University of Wolverhampton, UK

Professor Celia Shahnaz, IEEE WIE Chair-Elect 2022 and Professor EEE, BUET

**Chair of the session:**

Professor Chowdhury Mofizur Rahman, Vice Chancellor, United International University

**Vote of thanks:**

Prof. Md. Abul Kashem Mia, Pro Vice Chancellor United International University, Bangladesh

**Keynote Talk 1 10:15 AM - 11: 15 AM**

Speaker: Prof. Ali Dehghantanha, Canada Research Chair in Cybersecurity & Threat Intelligence (Tier2) | University of Guelph, Ontario, Canada

Session Chair: Professor Dr. M. Moshikul Hoque Dean, Faculty of ECE, CUET & Chair, IEEE Bangladesh Section

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## Technical Session 1

**AI, Health, NLP and Data Analytics**

**Paper Id: 61, 70, 90, 95**

11:45 PM - 12:45 PM

Session Chair: Professor Khondaker Abdullah Al Mamun, United International University

## Break 12:45 PM - 1:45 PM

## Parallel Technical Session 2

**AI and Machine Learning**

**Paper Id: 13, 23, 77, 78**

1:45 PM - 2:45 PM

Session Chair: Dr. Dewan Md. Farid, United International University

## Parallel Technical Session 3

**Safety, Security and Privacy**

**Paper Id: 16, 24, 65, 68**

3:00 PM - 4:00 PM

Session Chair: Professor Al-Sakib Khan Pathan, United International University

## Keynote Talk 2 4:15 PM - 5:15 PM

Professor Mohammad Patwary

Director of Centre for Future Networks & Autonomous Systems | Professor of  
Telecommunications at University of Wolverhampton, UK

Session Chair: Professor Raqibul Mostafa, Dean, School of Science and Engineering, United  
International University

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## Day 2: December 22 Wednesday

### Parallel Technical Session 4

#### Computer Vision and Image Processing

**Paper Id: 4, 29, 67, 91**

9:00 AM - 10:00 PM

Session Chair: Professor Mohammad Nurul Huda, United International University, Professor Dr. Md. Abdur Razzak, Independent University, Bangladesh

### Keynote Talk 3 10: 15 AM -11:15 AM

Speaker: Mohammed Atiquzzaman, PhD

EiC, Journal of Network and Computer Applications | EiC, Vehicular Communications | Gaylord Presidential Professor University of Oklahoma, USA

Session Chair: Professor M Rezwan Khan, Director, Institute of Advanced Research (IAR)

### Parallel Technical Session 5

#### Networking, Signal Processing and Antenna Propagation

**Paper Id: 6, 17, 20, 72, 101**

11:30 AM - 12:45 PM

Session Chair: Professor Dr. Md. Raju Ahmed, Dhaka University of Engineering and Technology, Prof. Dr. Shahriar Khan, Independent University, Bangladesh

**Break 12:45 PM - 1:45 PM**

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Special Session

**IEEE Bangladesh Section**

1:45 PM - 2:30 PM

Session Chair: Professor AKM Muzahidul Islam, United International University

**Keynote Talk 4 2:45 PM - 3:45 PM**

Prof. Dr. Celia Shahnaz

Professor at Bangladesh University of Engineering & Technology, Bangladesh

Session Chair: Professor Muhammed Fayyaz Khan, Vice Chancellor, Bangladesh University of Business and Technology

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## Technical Program Details

### Day 1: December 21, 2021 Tuesday

Technical Session 1 **AI, Health, NLP and Data Analytics** 11:45 PM - 12:45 PM

Paper ID	Paper Title & Authors
61	LAGUAI- Artificial Intelligence song composer <i>Uthayasurian Salavamani and Md Saiful Azad.</i>
70	Depression Analysis from Social Media Data in Bangla Language: An Ensemble Approach <i>Marian Binte Mohammed, Abu Saleh Md. Abir, Lubaba Salsabil, Mahir Shahriar and Ahmed Fahmin.</i>
90	A Deep Multi-Scale Feature Fusion Approach for Early Recognition of Jute Leaf Diseases and Pests <i>Rashidul Hasan Hridoy and Tanjina Yeasmin.</i>
95	Intelligent Call Center Support integrating with Speaker and Interaction Recognition using NLP <i>Shehan Irteza Pranto, Rahad Arman Nabid, Ahnaf Mozib Samin, Nabeel Mohammed, Farhana Sarker, Mohammad Nurul Huda and Khondaker A. Mamun.</i>

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## Technical Session 2 AI and Machine Learning 1:45 PM - 2:45 PM

Paper ID	Paper Title & Authors
13	Comparative Study on Job Scheduling Using Priority Rule and Machine Learning <i>Saydul Akbar Murad, Zafril Rizal Bin M Azmi, Abu Jafar Md Muzahid, Md. Al-Imran and Mahima Karim.</i>
23	Transfer learning on VGG16 for the Classification of Potato Leaves Infected by Blight Diseases <i>Jesmin Akther, Muhammed Harun-Or-Roshid, Al-Akhir Nayan and Muhammad Golam Kibria.</i>
77	A Machine Learning Approach to Predict Renal Diseases with SARS-CoV-2 <i>Md. Ashiq Mahmood and Priti Lata.</i>
78	Towards Efficient Segmentation and Classification of White Blood Cell Cancer with Semantic Segmentation and Transfer Learning <i>Ashik Iqbal, Md Faysal Ahmed, Md Naimul Islam Suvon, Sourav Das Shuvho and Ahmed Fahmin.</i>

## Technical Session 3 Safety, Security and Privacy 3:00 PM - 4:00 PM

Paper ID	Paper Title & Authors
16	Optimal Safety Planning and driving Decision-Making for Multiple Autonomous Vehicles: A Learning Based Approach <i>Abu Jafar Md Muzahid, Md. Abdur Rahim, Saydul Akbar Murad, Syafiq Fauzi Bin Kamarulzaman and Md Arafatur Rahman.</i>
24	Interpretation of Adversarial Attack on Unsupervised Domain Adaptation <i>Mst. Tasnim Pervin and Aminul Huq.</i>
65	A Conceptual Anonymity Model to Ensure Privacy for Sensitive Network Data <i>N H M Arafat, Md Ileas Pramanik, Abu Jafar Md Muzahid, Bibo Lu, Sumaiya</i>

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	<i>Jahan and Saydul Akbar Murad.</i>
68	An Effective Privacy-Preserving Record Linkage Framework For Electronic Health Record <i>Tosiful Islam, Ahmed Mostafa Tanim and Jalal Uddin Md Akbar.</i>

## Day 2: December 22, 2021 Wednesday

Technical Session 4 **Computer Vision and Image Processing** 9:00 AM - 10:30 PM

Paper ID	Paper Title & Authors
4	An Efficient Optical Character Recognition System for Bangla script Utilizing a Captured Image <i>Ruhulamin Siddique and Md. Ashiq Mahmood.</i>
29	An Improved Three-Branch and Multi-Scale Learning (TBMSL-Net) for Fine-grained Visual Classification <i>Taha H. Rassem, Ong Zu Yet, Md Arafatur Rahman and M. M. Rahman.</i>
67	A deep Spatio-temporal network for vision-based sexual harassment detection <i>Md Shamimul Islam, Md Mahedi Hasan, Sohaib Abdullah, Jalal Uddin Md Akbar, N H M Arafat and Saydul Akbar Murad.</i>
91	Image Processing Based Water Quality Monitoring System for Biofloc Fish Farming <i>Mahmuda, Barkatullah, Emranul Haque, Abdullah Al Noman and Feroz Ahmed.</i>

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Technical Session 5 **Networking, Signal Processing and Antenna Propagation** 11:30 AM - 12:45 PM

Paper ID	Paper Title & Authors
6	Design of a Bi-Directional Wireless Data Transceiver for Implantable Biomedical Device <i>Md. Raisul Hassan Khondaker, Md. Nasim Reza, S R An Nababi, Md Piyas and Md Hasanuzzaman.</i>
17	EngagementMeter: Evaluation of students' engagement metrics from QEEG neural signal through hyperscanning approach <i>Iffath Binta Islam, Iftekhar Fahim Aziz, Khondaker A. Mamun Mamun and Wasifa Jamal.</i>
20	A Compact Wideband Slotted Hexagonal Patch Antenna with a Modified Ground Structure for WiFi-5/6 Communication <i>Liton Chandra Paul, Md. Tanvir Rahman Jim, Tithi Rani, Md Samsuzzaman, Nayan Sarker and Rezaul Azim.</i>
72	Maximizing the Probability of User Association of a Tier of a Multi-Tier Heterogeneous Network by Optimal Resource Allocation <i>Mobasshir Mahbub, Bobby Barua and Abdullah G. Alharbi.</i>
101	Backward Radiation Reduction and Bandwidth Enhancement of Metamaterial Antenna for UWB Application <i>M. Jasim Uddin, M. Habib Ullah, Bentley L. Barry, M. N. Shakib, Syed Zahurul Islam and Md Arafatur Rahman.</i>