



# 3<sup>RD</sup> INTERNATIONAL CONFERENCE ON APPLIED INTELLIGENCE AND INFORMATICS (AII2023)

Fostering Reproducibility of Research Results

29 - 31 OCT 2023, DUBAI, UAE



## 3<sup>rd</sup> International Conference on Applied Intelligence and Informatics (AII2023)

## Conference Programme Book

October 29-31, 2023

In-person and Online Conference

<https://aii2023.org/>

Hosted by



كليات التقنية العليا  
Higher Colleges of Technology  
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## Programme Snapshot

All times are in **GMT+4 (UAE time)**

Zoom Session:  
ID: [83100719716](https://us02web.zoom.us/j/83100719716)  
Passcode: 102023

Registration link: <https://forms.gle/8hEFvhyDUDa9iM9R9>

Zoom session link: <https://us02web.zoom.us/j/83100719716?pwd=ZzNHaE5VS0NQNJBTXBGNHVZYW5FQT09>

### Day 1: October 29, 2023 (Registration and Welcome)

16:00 - 18:00 Registration Registration, kit collection and welcome networking

### Day 2: October 30, 2023 (Main Conference Day)

08:30 - 09:00 Inauguration Conference Inauguration

09:10 - 10:00 Keynote Prof El-Sayed M. El-Alfy, KFUPM, KSA

10:00 - 10:50 Session I Prof David Brown, Nottingham Trent University, UK

10:50 - 11:10 **Coffee Break**

11:10 - 12:00 Keynote Prof Bing Xue, Victoria University of Wellington, NZ

12:00 - 12:50 Session II Prof Stefano Vassanelli, University of Padova, IT

12:50 - 14:30 **Lunch Break**

14:30 - 16:00 Invited Session I Tutorial on: Application of Artificial Intelligence in Alzheimer's Disease Detection

16:00 - 16:30 **Coffee Break**

16:30 - 18:00 Invited Session II Panel Discussion on: Application of Artificial Intelligence Towards Inclusiveness and Personalisation for Students with Learning Disabilities and Autism

19:00 - 22:00 **All2023 Banquet**

### Day 3: October 31, 2023 (Technical Sessions Day)

09:00 - 10:30 Technical Session I Track 1: Emerging Applications of AI and Informatics (Paper IDs: 10204, 10217, 10234, 96149, 96155, 96156 = 6 papers)

10:30 - 11:00 **Coffee Break**

11:00 - 12:30 Technical Session II Track 2: Application of AI and Informatics in Healthcare (Paper IDs: 10202, 10207, 10211, 10232, 10236, 96151, 96152 = 7 papers)

12:30 - 14:00 **Lunch Break**

14:00 - 15:30 Technical Session III Track 3: Application of AI and Informatics in Pattern Recognition (Paper IDs: 10206, 10216, 10219, 10233, 96150, 96153 = 6 papers)

15:30 - 16:00 **Coffee Break**

16:00 - 17:20 Technical Session IV Track 4: Application of AI and Informatics in Network, Security, and Analytics (Paper IDs: 10205, 10210, 10214, 10218, 10220, 10228 = 6 papers)

17:30 - 18:00 **Closing Ceremony + Awards + Next All 2024 Announcement**

Notes



All times are in **UAE time (GMT+4)**

**Day 01: Sunday, October 29, 2023**

**16:00 – 18:00 Welcome Session**

16:00 – 18:00 Registration, conference kit collection, and welcome networking

**Day 02: Monday, October 30, 2023**

**08:30 – 09:00 Conference Inauguration**

08:30 – 08:35 Welcome speech from the All2023 conference chair (Dr Mufti Mahmud)

08:35 – 08:40 Welcome speech from the All2023 conference co-chair (Prof Hanene Benabdallah)

08:40 – 08:50 Speech from invited guest (TBC)

08:50 – 08:55 Overview of Conference Programme (Prof M Shamim Kaiser)

08:55 – 09:00 Vote of Thanks (Prof Eisa Al Matroushi)

**09:10 – 10:50 Keynote Session I**

*Zoom Meeting ID: 831 0071 9716; Meeting Passcode: 102023*

09:10 – 10:00 Keynote 1:  
Speaker: **Prof El-Sayed M. El-Alfy**, King Fahd University of Petroleum and Minerals, Kingdom of Saudi Arabia  
Chair: **TBC**

Title: **Applications of Deep Learning in Biometric Recognition**

10:00 – 10:50 Keynote 2:  
Speaker: **Prof David J Brown**, Nottingham Trent University, UK  
Chair: **TBC**

Title: **Some Use Cases of Applied AI to Support Students with Learning Disabilities and Autism.**

**10:50 – 11:10 Coffee Break**

**11:10 – 12:50 Keynote Session II**

*Zoom Meeting ID: 831 0071 9716, Meeting Passcode: 102023*

11:10 – 12:00 Keynote 3:  
Speaker: **Prof Bing Xue**, Victoria University of Wellington, New Zealand  
Chair: **TBC**

Title: **Evolutionary Deep Learning for Image Analysis**





12:00 – **Keynote 4:**  
12:50 Speaker: **Prof Stefano Vassanelli**, University of Padova, Italy  
Chair: **TBC**

Title: **Connecting Brain and Artificial Neurons: Where we are, Challenges and Opportunities**

**12:50 – 14:30 Lunch Break**

**14:30 – 16:00 Invited Session I: Tutorial**

14:30 – 16:00 Title: **Application of Artificial Intelligence in Alzheimer’s Disease Detection**  
Speakers:  
**Dr Noushath Shaffi**, University of Technology and Applied Sciences, Oman  
**Mr Vimbi Viswan**, University of Technology and Applied Sciences, Oman

**16:00 – 16:30 Coffee Break**

**16:30 – 18:00 Invited Session II: Panel Discussion**

16:30 – 18:00 Title: **Application of Artificial Intelligence Towards Inclusiveness and Personalisation for Students with Learning Disabilities and Autism**  
Panellists:  
**Prof David Brown**, Nottingham Trent University, UK  
**Mr David Stewart**, Nottingham Schools Trust, UK  
**Dr S Manikandan**, Indian Institute of Technology Palakkad, India  
**Prof M Shamim Kaiser**, Jahangirnagar University, Bangladesh  
Moderator: **Dr Mufti Mahmud**, Nottingham Trent University, UK

**19:00 – 22:00 Conference Banquet**

**Day 03: Tuesday, October 31, 2023**

**09:00 – 10:30 Technical Session I**

**Track 1: Emerging Applications of AI and Informatics**

**Session Chair: TBC**

Paper ID: **10204** **Paper title:** *A Deep Learning-Based Neural Network Model for Autism Spectrum Disorder Prediction*  
**Authors:** *Mohamad T Sultan, Hesham El Sayed, Mohammed Abduljabar*  
**Presenter:** *Mohamad T Sultan, United Arab Emirates University, UAE*

Paper ID: **10217** **Paper title:** *Improving a Fuzzy Matching Engine*  
**Authors:** *Callum Binns, John Kingston*  
**Presenter:** *Callum Binns, InSiteTrack, Marlow, United Kingdom*

Paper ID: **10234** **Paper title:** *Speech Emotion Recognition: An Empirical Analysis of Machine Learning Algorithms Across Diverse Data Sets*  
**Authors:** *Mostafiz Ahammed, Rubel Sheikh, Farah Hossain, Shahrima Mustak Liza, Muhammad Arifur Rahman, Mufti Mahmud, David J Brown*  
**Presenter:** *Mostafiz Ahammed, Jahangirnagar University, Bangladesh*

Paper ID: <b>96149</b>	<p><b>Paper title:</b> <i>A BERT-based Chatbot to Support Cancer Treatment Follow-Up</i>  <b>Authors:</b> <i>Arup Dutta Bappy, Tanjim Mahmud, Mohammad Shahadat Hossain, Karl Andersson</i>  <b>Presenter:</b> <i>Karl Andersson, Lulea University of Technology, Sweden</i></p>
Paper ID: <b>96155</b>	<p><b>Paper title:</b> <i>Optimizing Medical Imaging Quality: An In-Depth Examination of Preprocessing Methods of Brain MRIs</i>  <b>Authors:</b> <i>Vimbi Viswan, Noushath Shaffi, Faizal Hajamohideen, Karthikeyan Subramanian</i>  <b>Presenter:</b> <i>Vimbi Viswan, University of Technology &amp; Applied Sciences, Oman</i></p>
Paper ID: <b>96156</b>	<p><b>Paper title:</b> <i>MindData for Enhanced Entertainment Building a Comprehensive EEG Dataset of Emotional Responses to Audio-Visual Stimuli</i>  <b>Authors:</b> <i>Thejaswini M S, G.Hemantha Kumar, V.N. Manjunath Aradhya, Narendra R, Suresha M, D S Guru</i>  <b>Presenter:</b> <i>Thejaswini MS, University of Mysore, India</i></p>
<b>10:30 – 11:00 Coffee Break</b>	
<b>11:00 – 12:30 Technical Session II</b>	
<b>Track 2: Application of AI and Informatics in Healthcare</b>	
<b>Session Chair: TBC</b>	
Paper ID: <b>10202</b>	<p><b>Paper title:</b> <i>A Robust and Explainable Deep Learning Method for Cervical cancer Screening</i>  <b>Authors:</b> <i>Marcello Di Giammarco, Francesco Mercaldo, Xiaoli Zhou, Pan Huang, Antonella Santone, Mario Cesarelli, Fabio Martinellin</i>  <b>Presenter:</b> <i>Marcello Di Giammarco, Italian Institute of Technology, CNR, Italy</i></p>
Paper ID: <b>10207</b>	<p><b>Paper title:</b> <i>Classifying Depressed and Healthy Individuals Using Wearable Sensor Data: A Comparative Analysis of Machine Learning Approaches</i>  <b>Authors:</b> <i>Faiza Guerrache, David J Brown, Mufti Mahmud</i>  <b>Presenter:</b> <i>Faiza Guerrache, Nottingham Trent University, United Kingdom</i></p>
Paper ID: <b>10211</b>	<p><b>Paper title:</b> <i>Performance Analysis of a Single-Input Thermal Image Classifier with Patient Information for the Detection of Breast Cancer</i>  <b>Authors:</b> <i>Anna Susan Cherian, Mathew Jose Mammoottil, Lloyd J Kulangara, Prabu Mohandas, Jerline S. Anni, Veena Raj, Murugathas Thanahaichelvan</i>  <b>Presenter:</b> <i>Prabu Mohandas, National Institute of Technology Calicut, India</i></p>
Paper ID: <b>10232</b>	<p><b>Paper title:</b> <i>Investigation of HR and QT Variability for Monitoring Sleep Apnea: An Interpretable Machine Learning Approach</i>  <b>Authors:</b> <i>Partha Pratim Das Turja, Mohammad Abdul Motin, Sumaiya Kabir, Mufti Mahmud, Dinesh Kumar</i>  <b>Presenter:</b> <i>Mohammad Abdul Motin, Rajshahi University of Engineering and Technology, Bangladesh</i></p>
Paper ID: <b>10236</b>	<p><b>Paper title:</b> <i>Transfer Learning-Based Ensemble of Deep Neural Architectures for Alzheimer's and Parkinson's Disease Classification</i>  <b>Authors:</b> <i>Vimbi Viswan, Noushath Shaffi, Mufti Mahmud, Faizal Hajamohideen, Karthikeyan Subramanian</i>  <b>Presenter:</b> <i>Noushath Shaffi, University of Technology and Applied Sciences, Oman</i></p>

Paper ID: **96151**  
**Paper title:** *Classifying Emotions of Parkinsonian Patients from Electroencephalogram Signals using Efficient Attention Capsule Network*  
**Authors:** *Sabbir Ahmed, Tatinee Sarker Sunom, M Shamim Kaiser, Mufti Mahmud, M Murugappan*  
**Presenter:** *Sabbir Ahmed, Jahangirnagar University, Bangladesh*

Paper ID: **96152**  
**Paper title:** *Early Prediction of Chronic Kidney Disease Using Machine Learning Algorithms with Feature Selection Techniques*  
**Authors:** *Farzana Tasnim, Sultana Umme Habiba, Mohammad Saeed Hasan Chowdhury, Md. Khairul Islam, Lutfun Nahar, Md. Shahadat Hossain, M. Shamim Kaiser, Karl Andersson*  
**Presenter:** *Sultana Umme Habiba, Bangladesh University of Engineering and Technology, Bangladesh*

**12:30 – 14:00 Lunch Break**

**14:00 – 15:30 Technical Session III**

**Track 3: Application of AI and Informatics in Pattern Recognition**

**Session Chair: TBC**

Paper ID: **10206**  
**Paper title:** *A Media-pipe integrated deep learning model for ISL (Alphabet) recognition and converting Text to Speech with Video Input*  
**Authors:** *Vishnu Mukundan, Aryan Gadhiya, Karthik Nadar, Rishita Gagrani, Niha Kamal Basha*  
**Presenter:** *Niha Kamal Basha, Vellore Institute of Technology, Vellore, India*

Paper ID: **10216**  
**Paper title:** *A Driver Fatigue Detection Framework with Convolutional Neural Network and Long Short-Term Memory Network*  
**Authors:** *Ruyi Bao, Nazia Hameed, Adam Walker*  
**Presenter:** *Ruyi Bao, University of Nottingham, UK*

Paper ID: **10219**  
**Paper title:** *FallGuardian: Wear OS-Based Machine Learning Fall Detection Framework*  
**Authors:** *Alexandros Michaelides, Nazia Hameed, Adam Walker*  
**Presenter:** *Alexandros Michaelides, University of Nottingham, United Kingdom*

Paper ID: **10233**  
**Paper title:** *Classification of Different Cancer Types Based on RNA HI-SEQ Data Using Dimensionality Reduction*  
**Authors:** *Zannatul Ferdous Tunny, Md. Abir Hasan Munna, Md. Shahadat Hossain, M. Arifur Rahman, M. Shamim Kaiser, David Brown*  
**Presenter:** *Zannatul Ferdous Tunny, BUP, Bangladesh*

Paper ID: **96150**  
**Paper title:** *YOLO-V4 Based Detection of Varied Hand Gestures in Heterogeneous Settings*  
**Authors:** *Nanziba Basnin, Atta Binti Aziz, Mohoshena Akter, Mohammad Farshid, M Shamim Kaiser, M Shahadat Hossain, Karl Andersson*  
**Presenter:** *Nanziba Basnin, IIUC, Bangladesh*

Paper ID: **96153**  
**Paper title:** *Comparative Analysis of Pre-Trained CNN Models for Neurobiological Disease Classification*  
**Authors:** *Uwasila Binte Munir, Shamim Al Mamun*  
**Presenter:** *Shamim Al Mamun, Jahangirnagar University, Bangladesh*

**15:30 – 16:00 Coffee Break**



**16:00 – 17:30 Technical Session IV**
**Track 4: Application of AI and Informatics in Network, Security, and Analytics**
**Session Chair: TBC**

Paper ID: <b>10205</b>	<b>Paper title:</b> <i>Optimizing Round-Robin Scheduling Algorithm Performance in Real-time Systems</i> <b>Authors:</b> <i>Tarek Helmy</i> <b>Presenter:</b> <i>Tarek Helmy, King Fahd University of Petroleum and Minerals, Kingdom of Saudi Arabia</i>
Paper ID: <b>10210</b>	<b>Paper title:</b> <i>Enhancing Outdoor Comfort: A Machine Learning Framework for Predicting Comfort Level</i> <b>Authors:</b> <i>Maher Alndiwee, Shamik Palit, Preetha V.K, Jimy Mathew, Natalie Joseph, Akshay Datar, Pablo Izquierdo Lopez, Waqar Ullah</i> <b>Presenter:</b> <i>Maher Alndiwee, University of Stirling, United Arab Emirates</i>
Paper ID: <b>10214</b>	<b>Paper title:</b> <i>Augmented Reality in the Fields of Management and Business: A Bibliometric Review of the Literature</i> <b>Authors:</b> <i>Thiago de Luca Santana Ribeiro, Anderson Antonio de Lima, Gustavo Goncalves</i> <b>Presenter:</b> <i>Thiago de Luca Santana Ribeiro, FATEC, Brazil</i>
Paper ID: <b>10218</b>	<b>Paper title:</b> <i>CDSER: Sentiment Analysis for Product Selection to Enhance E-commerce Review System</i> <b>Authors:</b> <i>Md. Mamun Or Rashid, Abu Sayed Md. Mostafizur Rahaman</i> <b>Presenter:</b> <i>Md. Mamun Or Rashid, Jahangirnagar University, Bangladesh</i>
Paper ID: <b>10220</b>	<b>Paper title:</b> <i>Screening of Enhanced Oil Recovery Methods Using Supervised Machine Learning Predicated on Range Data</i> <b>Authors:</b> <i>Gbubemi H. Harrison, Josephine A. Lamboi</i> <b>Presenter:</b> <i>Gbubemi H. Harrison, American University of Ras Al Khaimah, United Arab Emirates</i>
Paper ID: <b>10228</b>	<b>Paper title:</b> <i>Enhancing Internet of Things Security with Random Forest-Based Anomaly Detection</i> <b>Authors:</b> <i>Muhammad R Ahmed, Thirein Myo, Ahmed Al Shihimi, Badar Al Baroomi, M Shamim Kaiser</i> <b>Presenter:</b> <i>Muhammad R Ahmed, Military Institute of Technology, Oman</i>

**18:00 – 18:30 Closing Ceremony**
**Closing Ceremony, Awards, Next All 2024 Announcement**
**Session Chair: TBC**

18:00 – 18:10	<b>All2023 Awards</b>
18:10 – 18:20	<b>Announcement of All2024</b>
18:20 – 18:30	<b>Closing Remarks</b>

Notes

