BCU AI Symposium Programme

Day 1: 16 December 2024	
8:00 am – 9:00 am	Registration
9:00 am – 10:30 am	**Opening Ceremony** **Room: CST006-007**
	Session Chair: Dr. Sara Hassan Welcome Speech by Dr. Faisal Saeed, Chair of BCU AI Symposium Welcome Speech by Professor Adel Aneiba, Head of College of Computing Officiating Speech by Professor Hanifa Shah, Dean of Faculty of Computing, Engineering and Built Environment
9:30 am – 10:00 am	Keynote Speech I: Professor Akram Alomainy Title: From Implants to AI-based Materials - Reshaping Next Generation Wireless and Healthcare Solutions
10:00 am – 10:30 am	Keynote Speech II: Professor Mohamed Gaber Title: Enhancing AI-based Medical Diagnosis: Four Key Milestones in Class Decomposition
10:30 am – 11:00 am	**Break**
11:00 am – 1:00 pm	**Industry Forum - Session I** **Room: CST006-007**
	Session Chair: Professor Shadi Basurra
11:00 am – 11:30 am	Stuart Okin, Ofgem - Director of Cyber and AI Regulation, Ofgem Title: Towards a Secure, Sustainable Energy Future: The Role of AI and Cybersecurity
11:30 am – 12:00 pm	Dr Rupa Chilvers, Life Sciences and Innovation, Welsh Government Title: Innovating for scale? What health and social care needs from you today
12:00 pm – 12:30 pm	Sam Matthew, Microsoft UK Energy & Utilities Industry Advisor
12:30 pm – 1:00 pm	Discussion

11:00 am – 1:00 pm	**Parallel Sessions I**	
	Room: CST008	**Room: CST202**
11:00 am – 1:00 pm	Lead: Prof. Mohamed Gaber AI @BCI Showcase	Lead: Dr. Iain Rice AI Hackathon
1:00 pm – 2:00 pm	**Lunch Break**	

2:00 pm – 3:00 pm	Industry Forum Session II Room: CST006-007
2:00 pm – 2:30 pm	Session Chair: Kenny David, Ofgem. Paul Hingley, Products Security and Solution Officer, Siemens Digital Industries Software, GB&I. Title: Digitization and the industry's journey toward enhancing security in the Operational Technology (OT) layer.
2:30 pm – 3:00 pm	Martin Esugo, Research Fellow in Data and Artificial Intelligence, BCU Title: West Midlands Health Tech Innovation Accelerator
3:00 pm – 4:45 pm	AI Workshops Room: CST006-007
3:00 pm – 3:45 pm	Session Chair: Dr. Edlira Vakaj Workshop I: Associate Professor Syed Aziz Shah, Coventry University Title: How AI Can Help RF Sensing in Healthcare
3:45 pm – 4:30 pm	Workshop II: Luke White, Senior Data Scientist, Ofsted Title: Machine learning and Children's Services

	Parallel Session II	
3:00 pm – 5:00 pm	Room: CST202	Rooms: CST203, CST204
	Lead: Dr. Iain Rice AI Hackathon	ICACIN'24 Papers' presentations

	Day 2: 17 December 2024
9:30 am – 10:00 am	Keynote Speech Room: CST006-007
9:30 am – 10:00 am	Keynote Speech III: Professor David Brown Title: Privacy-Preserving Approaches to Machine Learning: Lung Cancer Prediction and Support for Students with Autism
10:00 am – 10:30am	Break
	AI Workshops Room: CST006-007
10:30 am – 11:15 am	Lead: Dr. Edlira Vakaj Workshop III: Chris Dye, Amazon Web Services Higher Education & Research Computing Title: Amazon Web Services AI Overview Presentation
11:15 am – 12:00 pm	Workshop IV: Stephen Chege, Cloud Solution Architect - CSU Microsoft UK Title: GitHub Copilot

	Parallel Session		
11:00 am – 1:00 pm	Room: CST008	Room: CST202	Rooms: CST203, CST204
	Lead: Prof. Mohamed Gaber AI @BCI Showcase	Lead: Dr Nouh Elmitwally AI Hackathon	ICACIn24 Papers' presentations
1:00 pm – 2:00 pm	Lunch Break		
2:00 pm – 4:00 pm	Rooms: CST203, CST204		
	ICACIn'24 Papers' presentations		
4:30pm – 5:00pm	Closing Ceremony		

Day 1: Monday, 16th December, 2024

Room1 (CST203): 3:00 pm – 5:00 pm (UK/GMT Time)

Time	Presentation
3:00 pm – 3:15 pm	**A Machine Learning and Graph Analytics Approach for Customer Segmentation and Targeting in Retail** Oluwakemi Janet Udoka-Ejimofor and Mariam Adedoyin-Olowe
3:15 pm - 3:30 pm	**EfficientNET-Based Deepfake Detection: Performance Analysis Against StyleGAN3 and In-the-Wild Scenarios** Fatimah Meraj, Essa Q. Shahra and Shadi Basurra
3:30 pm - 3:45 pm	**Performance Evaluation of Threshold Signing Schemes in Cryptography** Faneela, Jawad Ahmad, Baraq Ghaleb, Imdad Ullah Khan, William J. Buchanan, Sana Ullah Jan and Muhammad Shahbaz Khan
3:45 pm – 4:00 pm	**Forecasting Electricity Demand for UK Consumers: A Time Series Machine Learning Approach** Kamran Ali, Essa Q. Shahra, Shadi Basurra and Moad Idrissi
4:00 pm – 4:15 pm	**LMRPA: Large Language Model-Driven Efficient Robotic Process Automation for OCR** Osama Abdellatif, Abdelrahman Hassan and Ali Hamdi
4:15 pm – 4:30 pm	**RIRO: Reshaping Inputs, Refining Outputs Unlocking the Potential of Large Language Models in Data-Scarce Contexts** Ali Hamdi, Hothaifa Kassab, Muhammad Bahaa and Marwa Mohamed
4:30 pm – 4:45 pm	**Deep Learning Approaches for Automated Fish Species Classification Using Underwater Images: A Two-Phase Model with Data Augmentation** Mahsa Hashempoor, Essa Q. Shahra, Shadi Basurra and Samer Bamansoor
4:45 pm – 5:00 pm	**A Chaotic Image Encryption Scheme Using Novel Geometric Block Permutation and Dynamic Substitution** Muhammad Ali, Jawad Ahmad, Muhammad Abdullah Hussain Khan, Safee Ullah, Mujeeb Ur Rehman, Syed Aziz Shah and Muhammad Shahbaz Khan

Room 2 (CST 204): 3:00 pm – 5:00 pm (UK/GMT Time)

Time	Presentation
3:00 pm – 3:15 pm	**Smart Carbon Emission Tracker: A Data-Driven Approach for Greener Multi-modal Transportation** Habibur Rahman and Vahid Javidroozi
3:15 pm - 3:30 pm	**Fine-tuning Large Language Models for Domain-Specific Tasks: A Comparative Study on Supervised and Parameter-Efficient Fine-tuning Techniques for Cybersecurity and IT Support** Chaithanya Vamshi Sai, Nouh Sabri Elmitwally, Iain Rice, Haitham Mahmoud, Ian Vickers and Xavier Schmoor
3:30 pm - 3:45 pm	**A Data-focused Digital transformation for Smart net-zero cities, a Systems thinking approach**

	Farzaneh Mohammadi Jouzdani, Vahid Javidroozi, Monica Mateo Garcia and Hanifa Shah
3:45 pm – 4:00 pm	**Knowledge Workers Mental Workload Classification Using Voting Ensemble Learning Framework** Liu Jingming, Qaiser Khan and Pantea Keikhosrokiani
4:00 pm – 4:15 pm	**Impact of Perceived Ease of Use and Perceived Usefulness on Intention to Use Artificial Intelligence among IT Students at UTAS-Muscat: Mediated by Perceived Trust** Qasim Alajmi, Yusra Alroshdi and Ashish Rastogi
4:15 pm – 4:30 pm	**Pathological Voice Detection based Deep Learning Techniques** Noura Haddou, Najlae Idrissi and Houda Chakib
4:30 pm – 4:45 pm	**Student Opinion Mining to Explore Mental Workload and Technological Adoption: A Sentiment Analysis Study** Aleya Nur Mohol Siddika, Pantea Keikhosrokiani and Minna Isomursu
4:45 pm – 5:00 pm	**Diagnosing Skin Diseases Across Diverse Tones using AI** Akasha Aquil, Faisal Saeed and Nouh Elmitwally
Day 2: Tuesday, 17 December, 2024	
Room1 (CST203): 11:00 am – 1:00 pm (UK/GMT Time)	
11:00 am – 11:15 am	**Enhanced DOS Attack Detection System in WSNs using Hybrid Model** Somayeh Ramezani, Seyed Mahdi Sadri, Haitham Mahmoud and Nouh Elmitwally
11:15 am – 11:30 am	**Enhancing Facial Recognition Accuracy in eKYC Systems: A Comparative Evaluation of Euclidean Distance, Cosine Similarity, and SSIM Under Real-World Challenges** Akaphat Lertworatham, Ensi Smajli, Gerald Feldman, Miftah Ghneim, Haitham Mahmoud and Nouh Elmitwally
11:30 am – 11:45 am	**A Multi-objective Optimization Model for Equitable and Efficient Emergency Medical Service Allocation in Birmingham Using the Minimum P-envy Algorithm** Nadia Zoubir, Mohammed Reda Chbihi Louhdi, Nihad Aghbalou, Hicham Behja, Yassine Zahidi, Mohamed El Moufid and Hicham Medromi
11:45 am – 12:00 pm	**Fusion of NLP and Neuromorphic Computing Techniques for Adaptive Stress Management** Sanjai Gupta, Ravindra R Dharamshi, Vinodkumar Uttamrao Kakde, Arunkumar Kavuru, Shrikant Taware and Abdulaziz Al-Nahari
12:00 pm – 12:15 pm	**Development of handwritten text recognizer in Kazakh language using Deep Learning** Abdurakhim Bakytzhan, Temirlan Torebekov, Aidana Zhalgas and Leila Rzayeva
12:15 pm – 12:30 pm	**BLM-SGAN: Bidirectional Language Modeling for Semantic-Spatial Text-to-Image Generation** Ahmed Abdelmoneim Mazrou, Haidy Maher El-Amir and Ali Hamdi

12:30 pm – 12:45 pm	**Developing a Smart Wireless Sensor Network for Waste Management in Cities.** Palvir Gill, Jack Devey, Moad Idrissi, Haitham Mahmoud, Shaheed Parvez and Rehan Bhana
12:45 pm – 1:00 pm	**Resampling and KNN for IoT Botnet Detection: Addressing Class Overlap Challenges** Yassine el Yamani, Youssef Baddi and Najib El Kamoun

Room2 (CST204): 11:00 am – 1:00 pm (UK/GMT Time)

11:00 am – 11:15 am	**A Novel Moving Average Seasonal Fractional Grey Model for Electricity Load Forecasting** Ani Shabri and Ruhaidah Samsudin
11:15 am – 11:30 am	**Sentiment-Driven Dual-Input Convolutional Neural Network for Multi-Class Rumor Detection** Rutab Marriam, Radziah Mohamad and Sim Hiew Moi
11:30 am – 11:45 am	**Performance Comparison of LSTM and Transformer Models in Saudi Stock Market Prediction** Ayoub Alzumaya and Abdel-Hamid Emara
11:45 am – 12:00 pm	**Advancing Healthcare: Data Mining and Digital Tech in Diagnostics and Care** Ayoub Alzumaya, Khalid Alhazmi and Abdel-Hamid Emara
12:00 pm – 12:15 pm	**Optimized Quran Passage Retrieval Using an Expanded QA Dataset and Fine-Tuned Language Models** Mohamed Basem, Islam Oshallah, Baraa Hikal, Ali Hamdi and Ammar Mohamed
12:15 pm – 12:30 pm	**Machine Learning-Enhanced Kalman Filters for Noise Detection in High-Frequency ETH/USD Trading** Amine Kili, Mohamed Rachdi and Brahim Raouyane
12:30 pm – 12:45 pm	**LLM-DaaS: LLM-driven Drone-as-a-Service Operations from Text User Requests** Kamal Mohamed, Lillian Wassim and Ali Hamdi
12:45 pm – 1:00 pm	**Health-aware Heuristic Modelling for Asthma-friendly Route Optimization** Nada Ayman, Shaimaa Alaa, Ali Hamdi and Mohamed Hussein

Room 1 (CST 203): 2:00 pm - 4:45 pm (UK/GMT Time)

2:00 pm – 2:15 pm	**Advanced Development of a Customer Assistance Chatbot using Multimodal Large Language Models to Enhance User Experience** Mona Farrag, Faisal Saeed, Haitham Mahmoud, Chaithanya Sai, Artid Boonrerng and Nouh Elmitwally
2:15 pm – 2:30 pm	**Ensemble Deep Learning for Automated Osteoarthritis Grading in Knee X-Ray Images** Khalid Alhazmi and Abdel-Hamid Emara
2:30 pm – 2:45 pm	**LMV-RPA: Large Model Voting-based Robotic Process Automation**

	Osama Abdellatif, Ahmed Ayman and Ali Hamdi
2:45 pm – 3:00 pm	**LLM-SEM: A Sentiment-Based Student Engagement Metric Using LLMS for E-Learning Platforms**Ali Hamdi, Ahmed Abdelmoneim Mazrou and Mohamed Shaltout
3:00 pm – 3:15 pm	**Distance Perception Dynamics: Pedestrian-Vehicle Interaction** Oumaima Benkhadda, Meriem Mandar and Nédra Mellouli-Nauwynck
3:15 pm – 3:30 pm	**Object Identification and Classification from Thermal Images Using the Ensemble Learning Across Various Yolo Models** G Sagayee, Nancy Victor and Rolando Lontok Jr
3:30 pm – 3:45 pm	**Toward Smart Predictive and Proactive Cognitive Vulnerability Analysis Framework** Imane Nouriss and Meriem Mandar
Room 2 (CST 204): 2:00 pm - 3:45 pm (UK/GMT Time)	
2:00 pm – 2:15 pm	**Enhancing EUR/USD Exchange Rate Predictions Using AIRS and ESN Models with Stacking** El Badaoui Mohamed, Raouyane Brahim, El Moumen Samira and Bellafkih Mostafa
2:15 pm – 2:30 pm	**An Overview of Artificial Intelligence in Mental Illness Diagnosis and Treatment: Current Trends and Future Directions** Souad Bourik, Said Jai Andaloussi, Kebira Azbeg, Khadija Tlemçani and Ouail Ouchetto
2:30 pm – 2:45 pm	**Automatic Assessment of writing Text: A Systematic Literature Review** Soumia Ikiss, Najima Daoudi and Mostafa Bellafkih
2:45 pm – 3:00 pm	**Machine Learning Approach for Phishing Websites detection from URLs** Hajar Fares, Marouane Marhoun, Youssef Baddi and Noura Aknin
3:00 pm – 3:15 pm	**Cyber Threat Modeling and Machine Learning : A Review** Salma Rachidi, Meriem Mandar and El Mehdi Bendriss
3:15 pm – 3:30 pm	**Web Application security: A Review of Broken Access Control in Web Applications** Et-Taher El Ghachi and Brahim Raouyane
3:30 pm – 3:45 pm	**A Scalable and Secure Multi-Layer Architecture for Remote Diabetes Management Using Lightweight Blockchain and P2P Learning** Khadija Tlemçani, Kebira Azbeg, Leila Fetjah, Nabil Madrane, Ouail Ouchetto and Said Jai Andaloussi