20th IBCAST 2023: ARTIFICIAL INTELLIGENCE AND SOFTWARE TECHNOLOGIES

22-25 August 2023

Technical Program

	0900-1030	1100-1230		1400 – 1530	1600 – 1730	1745-1945
Day-1 August 22, 2023 Tuesday			**L U N C H B R E A K**	**Session 1.1** — Conference Registration	**Session 1.2** — Muzammil Shahbaz, Thales UK; AI-ST-394; AI-ST-576; Dr. Usman Qayyum, CESAT; Dr. Kifayat Ullah, FAST	**Session 1.3** — AI-ST-608; AI-ST-77; Dr. Maizatul Akmar, Universiti Malaysia
Day-2 August 23, 2023 Wednesday	**Session 2.1** — AI-ST-135; AI-ST-323; AI-ST-429; Prof. Dr. Roman Mouček, University of West Bohemia, Czech Republic	**Session 2.2** — Dr. Umar Shahbaz Khan, National Center of Robotics & Automation; AI-ST-446; AI-ST-24; AI-ST-290		**Session 2.3** — Prof. Mircea Hulea, Technical University Gheorghe Asachi Iasi; AI-ST-341; AI-ST-379; AI-ST-439; AI-ST-473	**Session 2.4** — Dr. Muhammad Haroon Yousaf, UET Taxila; AI-ST-273; AI-ST-531; AI-ST-554; AI-ST-356; AI-ST-511	
Day-3 August 24, 2023 Thursday	**Session 3.1** — AI-ST-553; AI-ST-84; AI-ST-98; AI-ST-27; AI-ST-372	**Session 3.2** — AI-ST-382; AI-ST-453; AI-ST-123; AI-ST-272; Dr. Aminuddin, Artificial Intelligence Technology Center		**Session 3.3** — Prof. Dr. Habil. Valentina E. Balas, University of Arad, Romania; Dr. Syed Ahmad Chan Bukari, St. John's University, New York	**Session 3.4** — Dr. Usman Akram, NUST; Dr. Dimitar Kazakov, University of York, UK	
Day-4 August 25, 2023 Thursday	Closing Ceremony					

(Note: TEA BREAK columns appear between 1030–1100 and 1530–1600.)

Yellow is for CESAT Papers
Purple is for International Papers

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Day 1: August 22, 2023

16:00 – 19:15 **Opening Message** **Dr. Usman Qayyum**	**20th IBCAST 2023: ARTIFICIAL INTELLIGENCE AND SOFTWARE TECHNOLOGIES**		
Session 1.1 **Session Chair**	**16:00 – 16:45**	Invited Talk (Testing the Untestables - Challenges of Mission Critical Software Systems)	**Muzammil Shahbaz** **Thales, UK**
	16:45 – 17:00	AI-ST-394: Efficient Multipliers for CNN with Optimized Compression Techniques	**Muhammad Usman** **CESAT**
	17:00 – 17:15	AI-ST-576: SPVD: A Stroke Patient Motor Movements Video Dataset for AI Augmented Rehabilitation	**Tipu Sherazi** **CESAT**
	17:15 – 17:40	Invited Talk(Journey of Artificial Intelligence Applications to Production- MLOPS)	**Dr. Usman Qayyum** **CESAT**
Break			
Session 1.2 **Session Chair**	**17:45 – 18:30**	Invited Talk (Data Engineering using Open-Source Big Data Processing Platforms)	**Dr. Kifayat Ullah** **FAST**
	18:30 - 18:45	AI-ST-608: Intelligent Monitoring for Elderly Well-being: Deep Learning-Based Activity Recognition for Fall Detection	**Areeb Adnan Khan** **Habib University**
	18:45 - 19:00	AI-ST-77: Centrifugal pump fault detection with hybrid feature pool and deep learning	**Wasim Zaman** **South Korea**
	19:00 - 19:45	Invited Talk (Generative AI and Recommendation Systems)	**Dr. Maizatul Akmar Binti Ismail** **Universiti Malaya, Malaysia**

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Day 2: August 23, 2023

Session 2.1 Session Chair	09:00-09:15	**AI-ST-135:** Smart Shopping Cart for Self-Service Checkout Based on IoT Technologies	**Muhammad Imran** NUST
	09:15-09:30	**AI-ST-323:** A Deep Learning Approach to Pakistani Sign Language Recognition	**Muhammad Shaheer Mirza** Salim Habib University
	09:30-09:45	**AI-ST-429:** Sentiment Analysis of Movie Reviews using Improved Word2Vec and CNN	**Muhammad Imran Khan** Riphah Internation University
	09:45 –10:30	Invited Talk (Brain-Computer Interface systems)	**Prof. Dr. Roman Mouček** University of West Bohemia, Czech Republic
Break			
Session 2.2 D Session Chair	11:00 – 11:45	Invited Talk (Indigenous R&D for Robotics & Automation in Pakistan)	**Dr. Umar Shahbaz Khan** National Center of Robotics & Automation
	11:45 – 12:00	**AI-ST-446:** Self-Aware AI-Enabled Medical System	**Ali Raza** FAST-NUCES
	12:00-12:15	**AI-ST-24:** A Novel Model-Driven Framework for Performance Testing of Service-Oriented Architecture	**Ibrahim Khalil** NUST
	12:15-12:30	**AI-ST-290:** Deep Learning-Based Framework for Automated Vulnerability Detection in Android Applications	**Rijha Safdar** CESAT
Break			
Session 2.3 Session Chair	14:00 – 14:30	Invited Talk (Motion Tolerant Electro Optical Spiking Neural Networks)	**Prof. Mircea Hulea** Technical University Gheorghe Asachi Iasi
	14:30 – 14:45	**AI-ST-341:** Recognition of Urdu Handwritten Words Using Deep Learning Techniques	**Toqeer Ahmed** AITec NCP
	14:45 – 15:00	**AI-ST-379:** Software Estimation Process Improvement using Segmentation	**Yaseen Khan** MAJU
	15:00 – 15:15	**AI-ST-439:** Implementation of Space Exploration Algorithm duly Integrated with ROS: A Practical Framework	**Muneeb Hassan** NUST
	15:15 – 15:30	**AI-ST-473:** Exploring the Effectiveness of Joint Bi-LSTM-GNN vs ChatGPT-LLM in Source Code Retrieval	**Nazia Bibi** NUST
Break			
Session 2.4 Session Chair	16:00 – 16:45	Invited Talk (Edge-AI Enabled Robot Swarms)	**Dr. Muhammad Haroon Yousaf** UET Taxila
	16:45 – 17:00	**AI-ST-273:** Robust Multi-Object Threat Detection in X-ray Baggage Scanner	**Danyail Mateen** CESAT
	17:00 – 17:15	**AI-ST-531:** A Short-Term Load Forecasting by Using Hybrid Model	**Sabiha Rani** MUST

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	17:30-17:45	**AI-ST-554:** CB-UNet: A Channel boosted UNet architecture for lymphocyte detection in histopathological images	**Linta Kamran** **PIEAS**
	17:45-18:00	**AI-ST-356:** Foliar Diseases Identification in Apple Tree using Deep Learning	**Saira Farooq** **FAST-NUCES**
	18:00-18:15	**AI-ST-511:** Modulation Recognition of the OFDM Signals in the UAV-RIS Based AI-enabled 6G Network for Smart Agriculture	**Muhammad Farrukh Shahid Syed** **FAST-NUCES**

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Day 3: August 24, 2023

Session 3.1 / Session Chair	09:00-09:15	**AI-ST-553:** Supervised Water Body Classification from Sentinel-2 Imagery	**Rafia Malik** CESAT
	09:15-09:30	**AI-ST-84:** Transition Maneuver Optimization of a Hybrid UAV Using Deep Reinforcement Learning	**Mishma Akhtar** NUST
	09:35-09:50	**AI-ST-98:** Neural Machine Translation System for Pakistani Languages	**Shehzadi Ambreen** FJWU
	09:55 – 10:10	**AI-ST-27:** Deep Word Embedding and Language Model based Sentimental Analysis of COVID-19 Tweets	**Sobia Qaiser** NUST
	10:15 – 10:30	**AI-ST-372:** An AI-Based Classroom Monitoring System Leveraging Computer Vision and Machine Learning	**Waqar Ahmad** GIKI
		Break	
Session 3.2 / Session Chair	11:00 – 11:15	**AI-ST-382:** Semantic Similarity of the Holy Quran Translations with Sentence-BERT	**Tania Afzal** FJWU
	11:15 – 11:30	**AI-ST-453:** Software Reliability Analysis Using Prediction Models	**Ali Imran Haidry** CESAT
	11:30-11:45	**AI-ST-123:** Decoupling Data and Linguistic Knowledge for Spontaneous Tabular Q/A	**Farhan Dhanani** FAST-NUCES
	11:45-12:00	**AI-ST-272:** Deep Learning-based 3D Reconstructed Objects via Generative Models and Octree Structure	**Hamid Ashfaq** Air University
	12:00-12:30	Invited Talk (Artificial Intelligence Technology Center)	**Dr. Aminuddin** AiTech
		Break	
Session 3.3 / Session Chair	14:00 – 14:45	Invited Talk (Adaptive Fuzzy Control)	**Prof. Dr. Habil. Valentina E. Balas** University of Arad, Romania
	14:45 – 15:30	Invited Talk (Artificial intelligence for Healthcare)	**Dr. Syed Ahmad Chan Bukari** St. John's University, New York
		Break	
Session 3.4 / Session Chair	16:00-16:45	Invited Talk (DermaVision: An Intelligent Dual Contrastive Learning and Transformers based Framework for Analysis of Unstained Skin Tissue Samples)	**Dr. Usman Akram** NUST
	16:45-17:30	Invited Talk (DATA ANALYTICS & AI IS NOT A SILVER BULLET)	**Dr. Dimitar Kazakov** University of York, UK

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Day 4: August 25, 2023

10:00-11:30	Closing Ceremony