21st IBCAST 2024: Control & Signal Processing

20-23 August 2024

Tentative Technical Program

Updated on: Aug 07, 2024

	0900 – 1030	1100 – 1230	1400 – 1530	1600 – 1715	1730 – 1845
Day-1 August 20, 2024 Tuesday			REGISTRATION	**1.1: Control Systems -I** — Invited Talk: Prof. Liang Guozhu, BUAA, China; Paper # 243; Paper # 443	**1.2: Control Systems-II** — Invited Talk: Dr. Mien Van, Queen's Uni, Belfast, UK; Paper # 361; Paper # 202
Day-2 August 21, 2024 Wednesday	**2.1: Control Systems-III** — Paper # 205; Paper # 428; Paper # 284; Invited Talk: Dr. Qadeer Ahmed, Ohio State Uni, USA	**2.2: Control and Autonomy** — Invited Talk: Prof. Nabil Aouf, City Uni. of London, UK; Paper # 244; Paper # 371; Paper # 348	**2.3: Multi-Agents Systems Control** — *Invited Talk*: Prof. Hyungbo Shim, Seoul National Uni, S. Korea; Invited Talk: Dr. Mien Van, Queen's Uni, Belfast, UK	**2.4: Power Systems Control** — Paper # 418; Paper # 53; Paper # 339; Paper # 86; Paper # 226	**2.5: Signal Processing-I** — Invited Talk: Prof. Ahmed Fauzi, Multimedia Uni, Malaysia; Paper # 456; Paper # 35
Day-3 August 22, 2024 Thursday	**3.1: Signal Processing-II** — Paper # 405; Paper # 239; Paper # 429; Invited Talk: Prof. Ahmed Fauzi, Multimedia Uni, Malaysia	**3.2: Signal Processing-III** — Invited Talk: Prof. Nabil Aouf, City Uni. of London, UK; Paper # 38; Paper # 79; Paper # 319	**3.3: Signal Processing-IV** — Paper # 88; Workshop: Prof. M. Haroon Yousaf, UET, Taxila	**3.4: Multi-Topic** — Invited Talk: Dr. Weng Jing Nong, BUAA, China	
Day-4 August 23, 2024 Friday		CLOSING CEREMONY	DEPARTURE TO ISLAMABAD		

TEA BREAK (between 0900–1030 and 1100–1230), LUNCH BREAK (between 1100–1230 and 1400–1530), TEA BREAK (between 1400–1530 and 1600–1715), BREAK (between 1600–1715 and 1730–1845).

Session 2.3: *Invited Talk* Co-Sponsored by

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Day 1: August 20, 2024		
14:00 - 15:30	**Registration**	
15:30 - 16:00	TEA BREAK	
16:00 - 17:15	**Session 1.1: Control Systems-I**	**Session Chair: _____**
16:00-16:45	**Invited Talk:** High-altitude Simulation Test Facility for Attitude and Orbit Control Liquid Engines	**Prof. Liang Guozhu** **BUAA, China**
21CSP 243	Performance Analysis of Model Predictive Controller for Active Cell Balancing of Electric Vehicle Battery	Ali Arshad Uppal **COMSATS, Islamabad**
21CSP 443	Voltage Control in Electric Vehicle Integrated Active Distribution Networks: A Review	Mohsin Atta **UET, Taxila**
17:15 - 17:30	BREAK	
17:30 - 18:45	**Session 1.2: Control Systems-II**	**Session Chair: _____**
16:45-17:30	**Invited Talk:** Real Time Reconfiguration and Connectivity maintain for AUVs Network Under External Disturbances using Distributed Nonlinear Model Predictive Control	**Dr. Mien Van** **Queen's University, Belfast, UK**
21CSP 361	Machine Learning-Based Robust Control Solution for Buck Converters: ANN and Fuzzy Logic Methods	Laksh Rathi **GIKI, Sawabi**
21CSP 202	Experimental Verification of Rotating Sliding Mode Control with Composite Reaching Law Approach for Voltage Source Inverters	Faheem Haroon **Bahria University, Islamabad**

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	Day 2: August 21, 2024		
09:00 - 10:30	**Session 2.1: Control Systems-III**	**Chair: _____**	
21CSP 205	Dynamic Inversion Based Higher Order Model Reference Adaptive Control of Scaler Systems with Time varying Parameters		Fawad Farooq Ashraf **Beihang University, China**
21CSP 428	Accuracy Enhancing Time Limited Model Reduction Framework: Computational Efficiency in Power Systems		M. Latif, **NUST, Islamabad**
21CSP 284	Comparative Study of Pole Placement and Linear Quadratic Controller for Above knee Prosthetic Leg		M. Arqam Razzaq, **Uni. of Chakwal**
09:45- 10:30	**Invited Talk: Safety in Dynamical Systems using Control Barrier Function**		**Dr. Qadeer Ahmed Ohio State University, USA**
10:30 - 11:00	TEA BREAK		
11:00 - 12:30	**Session 2.2: Control and Autonomy**	**Chair: _____**	
11:00 -11:45	**Invited Talk: Research on Perception, Guidance, Navigation and Control (PGNC) Autonomy for Unmanned Vehicle**		**Prof. Nabil Aouf City University of London, UK**
21CSP 244	Spacecraft Dynamics Linearizing and Optimal Control Based on Operational Research and LQI		Biyogo Nchama Vicente Angel Obama, **Beihang University, China**
21CSP 371	Guidance and Control of a Spinning 155mm Artillery Shell using Vector Form of Proportional Navigation Guidance		M. Haris Rehman, **CESAT, Islamabad**
21CSP 348	Dynamic Stability Analysis of Spin-Stabilized Projectile		Ali Raza, **CESAT, Islamabad**
12:30 - 14:00	LUNCH BREAK		
14:00 - 15:30	**Session 2.3: Multi Agents Systems Control**	**Chair: Dr. Ghulam Mustafa, PIEAS**	
14:00-14:45	**Invited Talk: Coordination of Heterogeneous Multi Agent System**		**Prof. Hyungbo Shim Seoul National University, S. Korea**
14:45-15:30	**Invited Talk: Learning and Digital Twins Based Critical Control for Collaborative Robotics**		**Dr. Mien Van Queen's University, Belfast, UK**
15:30 - 16:00	TEA BREAK		
16:00 - 17:15	**Session 2.4: Power Systems Control**	**Chair: _____**	
21CSP 418	Adaptive Observer Based Output Voltage-Tracking Control of DC-DC Boost Converter		Adil Zohaib **Riphah Uni, Islamabad**
21CSP 53	Robust Battery Management System for UAV Applications		M. Sufyan Arshad, **CESAT, Islamabad**
21CSP 339	Genetic Algorithm-Based Load Balancing for Affective Demand Response with Renewable Energy Integration in Residential Setting		Maria Ashraf, **NUST, Islamabad**
21CSP 86	Advance Power System Optimization: Evaluation of Automatic Generation Control Techniques in Two-Area Networks		Shazil Ejaz, **GIKI, Sawabi**
21CSP 226	Robust Hierarchical Control Design and Implementation for the Hybrid Shipboard Microgrid		Arsalan Rehmat, **NUST, Islamabad**
17:15 - 17:30	BREAK		
17:30 - 18:45	**Session 2.5: Signal Processing-I**	**Chair: _____**	
17:30-18:15	**Invited Talk: Evaluation of Feature Extraction and Selection Tech for Classification**		**Prof. Ahmed Fauzi Multimedia University, Malaysia**
21CSP 456	Analysis of Two Three Axis Magnetometer for Indoor and Out Door Geo-Magnetic surveying Application		S. Riaz un Nabi Jafri, **NEDUET, Karachi**
21CSP 35	Minimizing Soil Mineralization Effect in Pulse Induced Metal Detector through Adaptive Filter-Based Compensation to detect Low Metal Contents		M. Asad Bukhari, **CESAT, Islamabad**

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Day 3: August 22, 2024		
09:00 - 10:30	**Session 3.1: Signal Processing-II**	**Chair: _____**
21CSP 405	A Smart and Sustainable On the Move Charging Solution for AEV/EV	Hafiz M. Mehdi, **NUST, Islamabad**
21CSP 239	Enhance Camouflaged Object Detection for Agriculture Pest Management: Inside from Unified Benchmark Dataset Analysis	Syed Muhammad Hussain, **Habib University, Karachi**
21CSP 429	Enhancing Agricultural Productivity: A Sensor Fusion, Spectroscopic near Infrared and AI-Based Framework for Monitoring Fruit Ripeness	Hira Ambreen, **Sir Syed CASE Institute of Technology, Islamabad**
09:45-10:30	**Invited Talk: Traditional and CNN-based Feature Descriptors**	**Prof. Ahmed Fauzi Multimedia University, Malaysia**
10:30 - 11:00	TEA BREAK	
11:00 - 12:30	**Session 3.2: Signal Processing-III**	**Chair: _____**
11:00-11:45	**Invited Talk: Adversarial Attacks Detection and Mitigation for Deep Learning-based Autonomous Vehicle**	**Prof. Nabil Aouf City University of London, UK**
21CSP 38	FVDCLS: Functional Verification of RISC-V Based Dual Core Lock Step Feature Using Fault Injection Mechanism	M. Kashif Minhas, **CESAT, Islamabad**
21CSP 79	Integration of Bit Manipulation Extension in the SweRV EH1 Core of RISC-V Processor and its Verification using Standard Tools	Samina Yasmeen, **Center of AI and Big Data**
21CSP 319	FPGA-Enabled Rapid Prototyping of Isolated Bidirectional Full Bridge DC-DC Converter Control for Electric Vehicle Application	Syed Jahania Shah, **Habib University, Karachi**
12:30 - 14:00	LUNCH BREAK	
14:00 - 15:30	**Session 3.3: Signal Processing-IV**	**Chair: _____**
21CSP 88	Enhancing the UAV Localization Accuracy by Removing False Matches Using Affine Consistency	Muhammad Abrar Qureshi, **CESAT, Islamabad**
14:15-15:30	**Workshop: Empowering Drones with Pixhawk: A Dive into Autopilot Systems**	**Prof. M. Haroon Yousaf UET, Taxila**
15:30 - 16:00	TEA BREAK	
16:00 - 17:15	**Session 3.4: Multi-Topics**	**Chair: _____**
16:00-17:15	**Invited Talk: Reform and Innovation in Higher Engineering Education in the New Era**	**Dr. Weng Jing Nong BUAA, China**

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