



20th IBCAST 2023: Control & Signal Processing

22-25 August 2023

Updated on: Aug 14, 2023

Tentative Technical Program

	900 – 1030		1100 – 1230		1400 – 1530		1600 – 1730
Day-1 August 22, 2023 Tuesday	REGISTRATION				1.1 Invited Talks		1.2 Control System Theory
					Prof. James Whidborne Cranfield University UK	Dr. Ghulam Mustafa, PIEAS	Paper# 260 Paper# 282 Paper# 490 Paper# 320 Paper# 414 Paper# 405
Day-2 August 23, 2023 Wednesday	2.1 Intelligent Control		2.2 Invited Talks		2.3 Sensors Fusion and Estimation		2.4 IC-Design
	Paper# 288	Paper# 203	Paper# 419	Paper# 491	Paper# 447	Prof. James Whidborne Cranfield University UK	Prof. Marius Balas, University of Arad, Romania
						Paper# 428	Paper# 279
						Paper# 302	Paper# 100
						Paper# 536	
Day-3 August 24, 2023 Thursday	3.1 Multi-Topics in Control		3.2 Machine Intelligence		3.3 Image Processing		3.4 Invited Talks
	Paper# 425	Paper# 212	Paper# 106	Paper# 281	Paper# 252	Prof. Gulistan Raja, UET Taxila	Paper# 322
						Paper# 434	Prof. Liang Guozhu, BUAA, China
							Prof. Marius Balas, University of Arad, Romania
Day-4 August 25, 2023 Friday	Closing Ceremony		Closing Ceremony		Departure to Islamabad		

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Day 1: August 22, 2023		
09:30-13:00	REGISTRATION	
13:00-14:00	LUNCH BREAK	
14:00-15:30	Session 1.1: Invited Talks	Chair: Prof. Raja Asif Zahoor, NYUS&T, Taiwan
Invited Talk 1	Transient Growth and Pseudo-spectra of Control Systems	Prof. James Whidborne University of Cranfield UK
Invited Talk 2	On the Cyber Resilience of Industrial Control Systems	Dr. Ghulam Mustafa PIEAS, Islamabad
15:30 - 16:00	TEA BREAK	
16:00 - 17:30	Session 1.2: Control System Theory	Chair: Dr. Asif Mughal, CESAT, Islamabad
20CSP 260	Robust Stability Analysis of a Class of LTV Systems	Shahzad Ahmed, CESAT
20CSP 282	High - Gain Observer Design for Nonlinear Two-Scale Systems	Arslan Khan, NUST
20CSP 490	A Comparative Study of Non Linear Control Techniques: Inverted Pendulum on a Cart	Fatima Hira, IST
20CSP320	Inverse Optimal Control Design of a VTOL Aircraft	Kinza Rehman, NUST
20CSP 414	Feedforward Stability Control of Two Wheeled Mobile Robots on Non-flat Surfaces	M. Faizan Shah, KFUIET, Rahim Yar Khan
20CSP 405	Multirotor Aerial Vehicle Attitude control using Successive Generalized Dynamic Inversion	Uzair Ansari, SUPARCO



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Day 2: August 23, 2023

Day 2: August 23, 2023		
09:00 – 10:30	Session 2.1: Intelligent Control	Chair: Dr. Uzair Ansari, SUPARCO, Karachi
20CSP 288	Development and Evaluation of a Fuzzy Supervisory Controller for the Rotary Inverted Pendulum	Safee Ullah, HITEC Taxila
20CSP203	Swarm Robots on a Mission: Optimizing Inspections with Fuzzy Logic and Particle Swarm Optimization	Nimra Sohail, Habib University
20CSP 419	Enhanced tuberculosis treatment and prevention using genetic algorithm based control techniques	Atif Rehman, NUST
20CSP491	Nonlinear MPPT algorithm for PV system using a condition based super twisting sliding mode Control and artificial neural networks	Umer Zaib, NUST
20CSP 447	Optimized Conditioned Adaptive Barrier Function Integral Terminal SMC for Altitude Control of Quadcopter System via Quantum PSO algorithm	Abdullah Mughees, NUST
10:30-11:00 TEA BREAK		
11:00 – 12:30	Session 2.2: Invited Talks	Chair: Dr. Ghulam Mustafa, PIEAS, Islamabad
Invited Talk 3	Gust Resilience for Multicopter Aircraft	Prof. James Whidborne, Cranfield University, UK
Invited Talk 4	Hybrid Controllers	Prof. Marius Balas, University of Arad, Romania
12:30-14:00 LUNCH BREAK		
14:00 – 15:30	Session 2.3: Sensors Fusion and Estimation	Chair: Dr. Shakil Ahmed, CESAT, Islamabad
20CSP 428	On the Time-Variant Step size Posterior LMS Algorithm	S. A Pasha, Air University
20CSP279	Vehicle Trajectory Estimation in GNSS denied Environment: An analysis of Extended Kalman Filter Approach for Monocular Vision Aided Inertial Navigation	Zohaib Wahab Memon, BUAA China
20CSP 302	State Estimation for a Unicycle Robot using Multi-Rate Sensor Fusion: A Comparative study	Fawad Farooq Ashraf, CESAT
20CSP 100	Estimation of Power System Harmonics Using Hybrid Least Square Based Arithmetic Optimization Algorithm	Aftab Asghar, UET Taxila
20CSP 536	Tele monitoring of Daily Activities Based on Multi-Sensors Data Fusion	Mouazma Batool, Air University
15:30-16:00 TEA BREAK		
16:00 – 17:30	Session 2.4: IC Design	Chair: Dr. Yasir Qadri, CESAT, Islamabad
Invited Talk 5	Cycle of innovation: Wireless Power Transfer (WPT) Based ICs for Vaccine Quality Monitoring	Dr. Rashad Ramzan FAST, Islamabad
20CSP 297	Coverage-Driven and Constrained –Randomized Sub-system level verification Methodology for RISC-V Based Socs	M. Kashif Minhas, CESAT, Islamabad



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Day 3: August 24, 2023

09:00 – 10:30		
Session 3.1: Multi-topics in Control		Chair: Dr. Syed Ahmed Pasha, Air University, Islamabad
20CSP 425	Integrated Guidance and Control System of Launch Vehicle (Zenit-2) using Back stepping Control with Non-linear Disturbance Observer for Low Earth Orbit (LEO) Application	M. Tanveer Iqbal, SUPARCO
20CSP 212	Modelling Simulation and Control of a Flexible Space Launch Vehicle	Ushbah Kaleem, IST
20CSP 106	Dynamic Stability Analysis of 105-mm Spin- Stabilized Projectile	Ali Raza, BUAA China
20CSP 281	MATLAB/SIMULINK Based Modelling, Simulation and Experimental Validation of High-Pressure Pneumatic Launcher for Fixed Wing UAVs	M. Furqan Siddique, NUST
20CSP 252	Improving Computational Efficiency in Power systems: Development of Model Reduction Frame work with Error-bound for Wind Turbines-Based on DFIG	M. Imran, NUST
10:30-11:00 TEA BREAK		
11:00 – 12:30		Chair: Dr. M. Ali Chaudhary, CESAT, Islamabad
Session 3.2: Machine Intelligence		
20CSP 51	Pixels to Precision: Feature Fusion and Random Forests over Labelled-based Segmentation	AYESHA Naseer, Air Uni.
20CSP 545	Development of EMD-based framework for modelling the effect of chiropractic care	AMMARA Naseem, Bahria University
20CSP 437	Robust Hand Gesture Tracking and Recognition for Healthcare via Recurrent Neural Network	Hira Anser, Air University
20CSP 494	Automated Video Summarization for Suspicious Event Detection in Surveillance Systems: A pipeline Approach	Syed M. Hussain, Habib University
20CSP 221	Cracking the Emotional Code: Identifying Emotions through Electroencephalograms	M. Bilal, UET Taxila
20CSP 52	GCN-Based Objects Understanding with 2D to 3D Point cloud Reconstruction	Hamid Ashfaq, Air University
12:30-14:00 LUNCH BREAK		
14:00 – 15:30		Chair: Dr. Asif Bhatti, CESAT, Islamabad
Session 3.3: Image Processing		
Invited Talk 6	Image De-hazing using Deep Learning	Prof. Gulistan Raja, UET Taxila
20CSP 322	Enhancing Autism Spectrum Classification using super Resolution GANs and ViT based embedding	Raza Ali, CESAT
20CSP 434	Fast Sparse Magnetic Resonance Image Reconstruction via a Dual Formulation	Maimoona Siddique, Air University
15:30-16:00 TEA BREAK		
16:00 – 17:30		Chair: Dr. Rab Nawaz, CESAT, Islamabad
Session 3.4: Invited Talks		
Invited Talk 7	Topic to be decided	Prof. Liang Guozhu, BUAA, China
Invited Talk 8	A System Engineering Subject: The Rooftop Green Houses, Objectives, Models, Control	Prof. Marius Balas, University of Arid, Romania