Day 1: August 7th (S		and the state of t		01.			
Time	Туре	Title	Place	Chair	Co-Chair Lakshminarayanan	Presentation Mode	Presenter
8:00AM-2:00PM	Workshop 2	Making reinforcement learning a practical technology for industrial control	Big Room	Arun Tangirala	Samavedham (Online) Lakshminarayanan		
3:00PM-7:00PM 2:00PM-7:30PM	Workshop 1 Registration	Process Data Analytics and Network or Flowsheet Reconstruction	Big Room Foyer	(Online)	Samavedham (Online)		
7:30PM-9:30PM	Reception	Welcome Reception	TBA				
Time	Туре	Title	Place	Chair	Co-Chair	Presentation Mode	Presenter
				Biao Huang (In-Person) & Bhushan Gopaluni	Jie Bao (Online) and Lakshminarayanan		
9:00AM-9:30AM		Opening Ceremony The case for switched control and estimation and its application in the automotive	Big Room	(In-Person)	Samavedham (Online)		
9:30AM-10:30AM	Plenary 1	sector by Sarah Spurgeon	Big Room	Biao Huang (In-Person)		In-Person	Sarah Spurgeon
10:30AM-11:00AM 11:00AM-1:20PM	Tea Break Parallel Sessions	Tea Break Three Parallel Presentation Sessions	Foyer				
11:00AM-11:20AM	Agriculture & Food Systems	A Two-Layer NN Framework for Modeling Agro-Hydrological Systems	Room A	van Heusden, Klaske (In-person)		In-Person	Zhiyinan Huang
		Investigation of Inoculation Effect on Cream Cheese Fermentation through Models		van Heusden, Klaske (In-person)			
11:20AM-11:40AM	Agriculture & Food Systems	Simultaneous Estimation of Soil Moisture and Hydraulic Parameters for Precision	Room A	van Heusden, Klaske		In-Person	Brent Young
11:40AM-12:00NN	Agriculture & Food Systems	Agriculture. Part A: Methodology Simultaneous Estimation of Soil Moisture and Hydraulic Parameters for Precision	Room A	(In-person) van Heusden, Klaske		In-Person	Bernard Agyeman
12:00NN-12:20PM	Agriculture & Food Systems	Agriculture. Part B: Application to a Real Field The Factor of Safety-Constrained Model Predictive Controller Design for Closed-	Room A	(In-person) van Heusden, Klaske		In-Person	Bernard Agyeman
12:20PM-12:40PM	Agriculture & Food Systems	Loop Reservoir Management	Room A	(In-person)		In-Person	Ajay Ganesh
		Optimizing Semi-Closed Greenhouse Temperature, Humidity, CO2 Concentration,		van Heusden, Klaske			
12:40PM-1:00PM	Agriculture & Food Systems	and Light Intensity Using a Nonlinear Model Predictive Control Approach Model Predictive Control and Machine Learning for Greenhouse Energy and Crop	Room A	(In-person) van Heusden, Klaske		Recorded Video	Wei-Han Chen
1:00PM-1:20PM	Agriculture & Food Systems	Production Optimization Fault Detection of Wind Turbine System Based on Deep Learning and System	Room A	(In-person) Rohit Patwardhan		Recorded Video	Guoqing Hu
11:00AM-11:20AM	Learning Systems	Identification	Room B	(Online)		In-Person	Sam Dehghanbanadaki
11:20AM-11:40AM	Learning Systems	Multi-Agent Reinforcement Learning System for Multiloop Control of Chemical Processes	Room B	Rohit Patwardhan (Online)		Recorded Video	Yifei Yue
11:40AM-12:00NN	Learning Systems	Safe, Fast and Explainable Online Reinforcement Learning for Continuous Process Control	Room B	Rohit Patwardhan (Online)		In-Person	Kalpesh Patel
12:00NN-12:20PM		State Estimation Using Physics Constrained Neural Networks	Room B	Rohit Patwardhan (Online)		Recorded Video	Rahul Patel
	Learning Systems			Rohit Patwardhan			
12:20PM-12:40PM	Learning Systems	Optimal Control for an Active PCM System Using Reinforcement Learning	Room B	(Online) Rohit Patwardhan		In-Person	Yifei Yue
12:40PM-1:00PM	Learning Systems	Data-Predictive Control of Multi-Timescale Processes	Room B	(Online) Rohit Patwardhan		Recorded Video	Jun Wen Tang
1:00PM-1:20PM	Learning Systems	Meta-Reinforcement Learning for Adaptive Control of Second Order Systems High-Grade Hydrogen Production from Different Feedstock Using Bubbling	Room B	(Online)		Live Zoom	Daniel McClement
11:00AM-11:20AM	Energy Systems	Fluidized-Bed Gasifier with Pressure Swing Adsorption	Room C	Wu Zhe (In-Person)		In-Person	Muhammad Ikhsan Taipabu
11:20AM-11:40AM	Energy Systems	Feature Construction and Selection for PV Solar Power Modeling Full Cycle Optimal Control Due to Slow Time-Varying Fouling Characteristics for	Room C	Wu Zhe (In-Person)		Live Zoom	Yu Yang
11:40AM-12:00NN	Energy Systems	Heat Exchanger Networks with Slow-Release Margin Evaluating the Economic Impact of Using Curtailed Renewable Energy Sources for	Room C	Wu Zhe (In-Person)		Recorded Video	Tianyu Zhu
12:00NN-12:20PM	Energy Systems	Green Hydrogen Production Impacts of Mooring Line Lengthening on Position Controller Design for a Floating	Room C	Wu Zhe (In-Person)		In-Person	Haider Niaz
12:20PM-12:40PM	Energy Systems	Offshore Wind Turbine	Room C	Wu Zhe (In-Person)		In-Person	Brendan Saunders
12:40PM-1:00PM	Energy Systems	An Energy Efficient Approach to Thermal Comfort Control in a VAV HVAC System Uncertainty Estimation in Power Consumption of a Smart Home Using Bayesian	Room C	Wu Zhe (In-Person)		Recorded Video	Ravindra Gudi
1:00PM-1:20PM 1:20PM-2:20PM	Energy Systems Lunch	LSTM Networks Lunch	Room C	Wu Zhe (In-Person)		In-Person	Nasibeh Zohrabi
2:20PM-2:50PM	Keynotes	Three Parallel Keynotes		Dana Varra (II			
2:20PM-2:50PM	Keynote 1	Challenges and Opportunities for Process Systems Engineering in Addressing Agricultural Water Sustainability by Jinfeng Liu	Room A	Brent Young (In- Person)		In-Person	Jinfeng Liu
2:20PM-2:50PM		Three emerging technologies currently disrupting manufacturing and process					
	Keynote 2	control by Tom Badgwell and Donald Bartusiak	Room B	Jay H. Lee (In-Person)		In-Person	Tom Badgwell
2:20PM-2:50PM	Keynote 2 Keynote 3	Developing Medical and Healthcare Services Based on Heart Rate Variability		Jay H. Lee (In-Person) Lakshminarayanan Samavedham (Online)			Tom Badgwell Manabu KANO
2:20PM-2:50PM 3:00PM-5:20PM		Developing Medical and Healthcare Services Based on Heart Rate Variability Analysis: Opportunities and Challenges by Manabu Kano Three Parallel Presentation Sessions	Room B	Lakshminarayanan Samavedham (Online)		In-Person Live Zoom	
	Keynote 3	Developing Medical and Healthcare Services Based on Heart Rate Variability Analysis: Opportunities and Challenges by Manabu Kano		Lakshminarayanan Samavedham (Online) Ikuro Mizumoto (Online)			
3:00PM-5:20PM	Keynote 3 Parallel Sessions	Developing Medical and Healthcare Services Based on Heart Rate Variability Analysis: Opportunities and Challenges by Manabu Kano Three Parallel Presentation Sessions Dynamic reference programming-based model predictive control for optimal robust tracking A Simple Discretization Scheme for Gain Matrix Conditioning	Room C	Lakshminarayanan Samavedham (Online)		Live Zoom	Manabu KANO
3:00PM-5:20PM 3:00PM-3:20PM	Keynote 3 Parallel Sessions Model Predictive Control Model Predictive Control	Developing Medical and Healthcare Services Based on Heart Rate Variability Analysis: Opportunities and Challenges by Manabu Kano Three Parallel Presentation Sessions Dynamic reference programming-based model predictive control for optimal robust tracking A Simple Discretization Scheme for Gain Matrix Conditioning Nonlinear Model Predictive Control for the Suppression of the COVID-19 Pandemic	Room C	Lakshminarayanan Samavedham (Online) Ikuro Mizumoto (Online) Ikuro Mizumoto		Live Zoom	Manabu KANO Niannian Zheng
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10:10AM-10:40AM	Keynote 4	Data Stories from the Frontline – The Analytics and Al Chronicles by Rohit Patwardhan	Online	Ravi Gudi (Online)		Live Zoom	Rohit Patwardhan
10:10AM-10:40AM	Keynote 5	Practical Process Monitoring and Smart Sensors in the Mineral Processing Industry by Lidia Auret	Online	Toru Yamamoto (Online)		Recorded Video	Lidia Auret
10:10AM-10:40AM	Keynote 6	Towards Harmony between Industrial and Ecological Systems: Opportunities for Advanced Control by Bhavik Bakshi	Online	Lakshminarayanan Samavedham (Online)		Live Zoom	Bhavik Bakshi
10:40AM-11:00AM	Tea Break	Tea Break	Foyer				
11:00AM-1:20PM	Parallel Sessions	Three Parallel Presentation Sessions					
				Ginuga Prabhaker	Lakshminarayanan		
11:00AM-11:20AM	Soft Sensing	Baseline Correction Using Local Smoothing Optimization Penalized Least Squares	Room A	Reddy (Online)		Live Zoom	Tianhong Pan
		Quality Prediction for Nonlinear Dynamic Processes Using Semi-Supervised Soft Sensors: An Application on Ammonia Decarburization Processes Decarburization		Ginuga Prabhaker	Lakshminarayanan		
11:20AM-11:40AM	Soft Sensing	Processes	Room A	Reddy (Online)	Samavedham (Online)	Recorded Video	Yi-Shan Lee
11:40AM-12:00NN	Soft Sensing	A Simple Approach to Industrial Soft Sensor Development and Deployment for Closed-Loop Control	Room A	Ginuga Prabhaker Reddy (Online)	Lakshminarayanan Samavedham (Online)	In-Person	Rui Nian
		Extended Kalman Filter for Normal and Oxygen-Starved PEM Fuel Cells Using a		Ginuga Prabhaker	Lakshminarayanan		
12:00NN-12:20PM	Soft Sensing	Lumped Pseudo-2D Model	Room A	Reddy (Online)	Samavedham (Online)	In-Person	Weslev Romev
12.00/// 12.20///	Sojt Schang	European Scado Es Model	110011111	Ginuga Prabhaker	Lakshminarayanan	In-Person plus Live	westey nomey
12:20PM-12:40PM	Soft Sensing	Deep Learning Based Flare Image Analytics for Emissions Monitoring at the Edge	Room A	Reddy (Online)	Samavedham (Online)	Zoom	Greg Makowski & Kalpesh Patel
12.20FIVI-12.40FIVI	Sujt sensing		NUUIII A			200111	Grey Wakowski & Karpesii Pater
12:40PM-1:00PM	Soft Sensing	Deployment of a Fuel Oil Blending Viscosity Inferential □ a Comparison of Conventional and Machine Learning Models	Room A	Ginuga Prabhaker Reddy (Online)	Lakshminarayanan Samavedham (Online)	Live Zoom	Ammar Bakhurji
1:00PM-1:20PM	Soft Sensing	3D Printer State Monitoring Mobile Application through a Deep Learning Approach	Room A	Ginuga Prabhaker Reddy (Online)	Lakshminarayanan Samavedham (Online)	Recorded Video	Gabriel Avelino R. Sampedro
11:00AM-11:20AM	Optimization & Control	Distributionally Robust Chance-Constrained Optimization with Deep Kernel Ambiguity Set	Room B	Qing Zhao (In-Person)		In-Person	Shu-Bo Yang
11:20AM-11:40AM	Optimization & Control	Experimental Verification of Output Feedback Control with CMAC Based Adaptive PFC and FF Input through Magnetic Levitation System	Room B	Qinq Zhao (In-Person)		Recorded Video	Nozomu Otakara
		Study on Control System Design Based on Smart Model Based Development		, , , , , , , , , ,			
11:40AM-12:00NN	Optimization & Control	Approach and Its Application for a Hydraulic Excavator	Room B	Qing Zhao (In-Person)		Recorded Video	Shin Wakitani
12:00NN-12:20PM	Optimization & Control	Design of a Data-Driven 2DOF Control System for the Two-Inertia System Considering Robustness	Room B	Qing Zhao (In-Person)		Live Zoom	Takuya Kinoshita
12:20PM-12:40PM	Optimization & Control	Performance Evaluation of Various Hyperparameter Tuning Strategies for Uncertain Parameter Forecast Using LSTM	Room B	Qing Zhao (In-Person)		Recorded Video	P S Pravin
12.20FIVI-12.40FIVI	Optimization & Control	Adaptive Energy Reference Time Domain Passivity Control of Teleoperation	NOUIII B	Qing znuo (in-Person)		necoraea viaeo	r 3 riuviii
12:40PM-1:00PM	Optimization & Control	Systems in the Presence of Time Delay	Room B	Qing Zhao (In-Person)		In-Person	Nafise Faridi Rad
1:00PM-1:20PM	Optimization & Control	A Distributed Convex Optimization Algorithm with Continuous-Time Communication	Room B	Qing Zhao (In-Person)		Recorded Video	Mohammad Jahvani
		Mutual Information Induced Slow-Feature Analysis of Nonlinear Dynamic Systems		Seshu Damarla (In-			
11:00AM-11:20AM	Applications II	and the Application in Soft Sensors	Room C	Person)		Live Zoom	Xinrui Gao
11:20AM-11:40AM	Applications II	Set-Membership Estimation for Industrial Processes with Uncertain Scheduling Parameters	Room C	Seshu Damarla (In- Person)		In-Person	Zhichao Pan
11.20AW-11.40AW	Applications	ruidineters	NOOTH C			III-reison	ZIIICIIdo Fuii
11:40AM-12:00NN	Applications II	A Modified Bag-Of-Words Representation for Industrial Alarm Floods	Room C	Seshu Damarla (In- Person)		In-Person	Haniyeh Seyed Alinezhad
11.40/11/112.00/11/	rippineditionsii	rinoulfied bag of wordshepresentation for madstrain admired bag	noom c	Seshu Damarla (In-		m r croon	Trainyen seyeu rameznau
12:00NN-12:20PM	Applications II	Fractional Order Controller Design Using the Direct Synthesis Method	Room C	Person)		Recorded Video	Salim Ahmed
12:20PM-12:40PM	Applications II	AlarmSoft: An Advanced Cloud-Based Alarm Management Application	Room C	Seshu Damarla (In- Person)		Live Zoom	Abdula Abulaban
12.20FIVI=12.4UPIVI	пррисистия	литтоор. Ан личински стоии-визеи минт минидетенс мррнсацоп	NOOIII C	Seshu Damarla (In-		LIVE ZUUIII	Abdula Abdiabali
12:40PM-1:00PM	Applications II	Robust Pandemic Control through Linearizing Variable Transformation	Room C	Person)		In-Person	Klaske van Heusden
1:00PM-1:20PM	Applications II	Understanding E.Coli-Antimicrobial Resistance (AMR) from Systems Thinking and System Dynamics Perspective	Room C	Seshu Damarla (In- Person)		In-Person	Tio Zhi Kai
1:20PM-2:30PM	Lunch	Lunch	om c	reisonj		213011	no Emiliar
1.20rivi-2.30rivi	Lunch			D V (I	t all all and a second as		
2:30PM-3:30PM	Plenary 3	The Role of Process Systems Engineering (PSE) on the Path to Carbon Neutral Chemical Process Industry by Jay Lee	Big Room	Brent Young (In- Person)	Lakshminarayanan Samavedham (Online)	In-Person	Jay Lee
3:30PM-4:00PM	Closing Ceremony	Closing Ceremony	Big Room	Bhushan Gopaluni (In- Person)	Jie Bao (Online)		
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