2024 SICE International Symposium on Control Systems (SICE ISCS 2024)

Higashi-Hiroshima, Japan
18 – 20 March 2024

Day 1: Monday, March 18, 2024

Intelligent Control

Chair: Yuji Ito (TOYOTA CENTRAL R&D LABS., INC., Japan)

9:30-11:30, Room 1 (218)

Schedule	No.	Title	Authors	
9:30-9:50	6	Performance Bound for Iterative Learning Control of Iteration-Varying Battery SoC Profiles under Iteration-Invariant Learning Gains	Dinh Hoa Nguyen (Kyushu University)	1
9:50-10:10	9	Interception of Multiple Drone Targets by Heterogeneous Chasers Using Heuristic Task Allocations with DQN-GNN Guidance Model	Yizhuo Zhang (National University of Singapore), Simon Koch (Bundeswehr University Munich), Jun Gao Wen (National University of Singapore), Sutthiphong Srigrarom (National University of Singapore), Peter Stütz (Universität der Bundeswehr München)	7
10:10-10:30	11	Path Planning for Deformable Object Assembly Based on Image Recognition	Chun Wei Wu (Tamkang University), Chisato Kanamori (The University of Electro-Communications), Ching-Chang Wong (Tamkang University)	N/A
10:30-10:50	25	Broadband Modeling of Power Distribution Networks	Florian Protze (Technische Universität Dresden), Frank Ellinger (Technische Universität Dresden)	14
10:50-11:10	32	A Stopping Rule for Linear Stochastic Approximation with Averaging under Bounded Noise	Qiming Tan (Osaka University), Takayuki Wada (Osaka University), Yasumasa Fujisaki (Osaka University)	N/A
11:10-11:30	36	Chatbot for Emotional Support Based on Self-Categorization Theory with Emotional Model	Akihiro Yorita (Kwansei Gakuin University), Mario Alexander Radke (Hochschule Reutlingen), Matthias Rätsch (Reutlingen University), Naoyuki Kubota (Tokyo Metropolitan University)	N/A

ISCS Plenary Lecture

12:40-13:30, Lecture Room 257 in School of Economics

Hyunbo Shim (Seoul National University)

Title: Distributed Coordination in Multi-agent Systems: Algorithms and Applications

Chair: Kenji Fujimoto (Kyoto University, Japan)

Control Application

Chair: Tomonori Sadamoto (The University of Electro-Communications, Japan)

14:00-16:00, Room 1 (218)

Schedule	No.	Title	Authors	
14:00-14:20	2	Sensitivity Analysis of Wind Affected Maneuverability of Tugboat-Controlled Ships	Hoeffmann, Maria, University of Bremen Roy, Sylvain, University of Bremen	19

			Wanigasekara, Chathura, German Aerospace Centre Bueskens, Christof, University of Bremen	
14:20-14:40	12	Accelerated Unet Semantic Segmentation Preprocessing of Medical Images Based on Bilateral Filters	Fangjun Liu (Aoyama Gakuin University), RYUICHI HIROTA (Aoyamagakuin University), Taku Itami (Aoyamagakuin University), Jun Yoneyama (Aoyama Gakuin University), Takaaki Aoki (Gifu University)	N/A
14:40-15:00	13	Automatic Trajectory Generation for Rotary Cranes Combining Simple Movements for Manual Operation	Nur Azizah Amir (Toyohashi University of Technology), Min Set Paing (Toyohashi University of Technology), Abdallah Farrage (Assiut University), Hideki Takahashi (Kobelco Construction Machinery Co., Ltd.), Shintaro Sasai (Kobelco Construction Machinery Co., Ltd.), Hitoshi Sakurai (Kobelco Construction Machinery Co., Ltd.), Masaki Okubo (Kobelco Construction Machinery Co., Ltd.), Naoki Uchiyama (Toyohashi University of Technology)	N/A
15:00-15:20	16	Optimal RTGC Non-Linear Control System Based on Sliding Mode Controller	Steven Bandong (Institut Teknologi Bandung), Cristian MP Napitupulu (Institut Teknologi Bandung), Yul Yunazwin Nazaruddin (Institut Teknologi Bandung)	25
15:20-15:40	27	Localization Fault Detection Method Using 2D LiDAR and Fisheye Camera for an Autonomous Mobile Robot Control	Yoshimasa Nakamura (Tokyo Metropolitan Industrial Technology Research Institute), Akinori Sasaki (Tokyo Metropolitan Industrial Technology Research Institute), Yuichiro Toda (Okayama University), Naoyuki Kubota (Tokyo Metropolitan University)	32
15:40-16:00	35	Towards a Safer Built Environment Industry with Inverted Perching Aerial Robots	Shawndy Michael Lee (Singapore University of Technology and Design), Jer Luen Chien (Singapore University of Technology and Design), Mario Josué Pérez Cruz (Osaka Institute of Technology), Shaohui Foong (Singapore University of Technology & Design), Photchara Ratsamee (Osaka Insititute of Technology)	40

Day 2: Tuesday, March 19, 2024

Optimization and Optimal Control

Chair: Hiroyuki Ichihara (Meiji University, Japan)

9:30-11:30, Room 1 (218)

Schedule	No.	Title	Authors	
9:30-9:50	5	Optimal Control of Resource Allocations in Maritime Port Operations Using Queue Models	Chathura Wanigasekara (German Aerospace Centre), Frank Sill Torres (German Aerospace Centre)	48
9:50-10:10	38	Data-Driven Optimal Control with Data Loss	Huan Luo (Kyoto University), Shun-ichi Azuma (Kyoto University)	56
10:10-10:30	22	Characterization of Bounded Real Lemma for Multiple Interval Delay Systems	Akira Kojima (Tokyo Metropolitan University)	
10:30-10:50	26	Observer-Structured Robust H2 Output Feedback Control with Gaussian Processes	Hibiki Shiroiwa (Meiji University), Hiroyuki Ichihara (Meiji University), Masayuki Sato (Kumamoto University)	N/A
10:50-11:10	29	Incentivizing Control Design for Blockchain-Enabled Distributed Optimization in Electricity Market Systems	Kansei Motoe (Waseda University), Yasuaki Wasa (Waseda University)	60
11:10-11:30	19	A Singular Value Decomposition Approach in Model-Free Predictive Control	Jiravit Pratvittaya (Kanazawa University), Shigeru Yamamoto (Kanazawa University)	

Control Theory

Chair: Hiroshi Ito (Kyushu Institute of Technology, Japan)

12:40-14:20, Room 1 (218)

Schedule	No.	Title	Authors	
12:40-13:00	40	State Space Analysis of the Relation between Two Types of Disturbance Observers	Kana Shikada (Kyushu Institute of Technology), Noboru Sebe (Kyushu Institute of Technology)	65
13:00-13:20	7	Stabilization of Hyperbolic Reaction-Diffusion Systems on Directed Networks through the Generalized Routh-Hurwitz Criterion for Complex Polynomials	Riccardo Muolo (Tokyo Institute of Technology), Anthony Hastir (University of Namur), Hiroya Nakao (Tokyo Institute of Technology)	73
13:20-13:40	8	Scalar Modules with Logarithmic Lyapunov Functions for Robust Positive Systems Exhibiting Interior Equilibria	Hiroshi Ito (Kyushu Institute of Technology)	80
13:40-14:00	3	Event-Triggered Reduced-Order $H\infty$ Filter Synthesis of Discrete-Time Uncertain Switched Systems	Ziyi He (Shaanxi Normal University), Guisheng ZHAI (Shibaura Institute of Technology), Baowei Wu (Shaanxi Normal University), Lili Liu (Shaanxi Normal University), Mingfei He (Chinese Academy of Sciences)	86
14:00-14:20	17	Passivity-Short-Based Conditions of System-Wide Stability and L2 Gain Performance for Heterogeneous Nonlinear Power System	Heng Kang (Keio University), Toru Namerikawa (Keio University)	94

Day 3: Saturday, March 11, 2023

Modeling, System Identification and Estimation

Chair: Ryosuke Morita (Gifu University, Japan)

10:40-12:40, Room 1 (218)

Schedule	No.	Title	Authors	
10:40-11:00		Characterizing the Dynamic Behavior of a Both-Sides Retrodirective System for the Control of Microwave Wireless Power Transfer	Charleston Dale Ambatali (The University of Tokyo), Shinichi Nakasuka (The University of Tokyo)	99
11:00-11:20		Data-Driven Sparse Feedback with Schur Alpha-Stability	Zhicheng Zhang (Osaka University), Yasumasa Fujisaki (Osaka University)	N/A
11:20-11:40		Evaluation of the Clinical Utility of a Gait Analysis System Using Pose Estimation Techniques in Physical Therapy	Katsuhiko Nishizawa (Doshisha University), Yu Oba (Doshisha University), Kento Yamada (Doshisha University), Ikumi Tanaka (Doshisha), Toru Tsumugiwa (Doshisha University), Ryuichi Yokogawa (Doshisha University), Tomoya Watanabe (Tokeidai Memorial Hospital)	107
11:40-12:00		A Non-Contact Translational and Rotational Force Feedback Device Using Rotational Jet Propellers	Ryo Nishimura (Osaka University), Photchara Ratsamee (Osaka Insititute of Technology), Yuki Uranishi (Osaka University), Haruo Takemura (Osaka University)	113
12:00-12:20		Remarks on a Quaternion-Valued Neural Network-Based Identifier with Application to a Predictive Control	Kazuhiko Takahashi (Doshisha University)	N/A
12:20-12:40		Obsevability Measure for Bayesian Inference in Noise Driven Linear Systems	Kunwoo Lee (Kyoto University), Kenji Kashima (Kyoto University)	N/A

ISCS Plenary Lecture

13:50-14:40, Lecture Room 257 in School of Economics

Keqiang Li (Tsinghua University, Japan)

Title: Learning-Based Decision and Control Systems for High-Level Self-Driving Intelligence

Chair: Manabu Kano (Kyoto University, Japan)