

SICE Annual Conference 2010 in Taiwan

Technical Program

Detailed Program Listings

Technical Program for Thursday August 19, 2010

Grand Ballroom (12F)	
Plenary Talk I	
Chair: Tzoo-Hseng S. Li	National United University
9:00–9:50	
<i>Sampling and Data Compression in Signal Processing and Control</i>	
Graham Goodwin	University of Newcastle

Sky Lounge (12F)	
TA01	
Nanoscale Servo Control (Organized Session)	
Organizer: Jun Ishikawa	Tokyo Denki University
Chair: Jun Ishikawa	Tokyo Denki University
Chair: Motohiro Kawafuku	Nagoya Institute of Technology
10:20–10:35, TA01.01	
<i>Short Span Seeking Control System of Hard Disk Drives Based on Pivot Friction Compensation</i>	
Motohiro Kawafuku	Nagoya Institute of Technology
Masaki Shibata	Nagoya Institute of Technology
Makoto Iwasaki	Nagoya Institute of Technology
Hiroumi Hirai	Nagoya Institute of Technology
10:35–10:50, TA01.02	
<i>Torque Disturbance Rejection Improvement by Voltage Mode Control Using Current Driver</i>	
Hiroyuki Ono	Atom-giken
10:50–11:05, TA01.03	
<i>Friction Compensation Based on the LuGre Friction Model</i>	
Jun Ishikawa	Tokyo Denki University
Sei Tei	Tokyo Denki University
Daiki Hoshino	Tokyo Denki University
Masaki Izutsu	Tokyo Denki University
Norihiro KAMAMICHI	Tokyo Denki University
11:05–11:20, TA01.04	
<i>FIR Optimization Control for External Vibration in Self Servo Track Writer</i>	
Parnupong Thongsuk	King Mongkut's University of Technology Thonburi
Benjamas Panomrattananurug	King Mongkut's University of Technology Thonburi
11:20–11:35, TA01.05	
<i>Final-State Control Satisfying Jerk Continuity</i>	
Mitsuo Hirata	Utsunomiya University
11:35–11:50, TA01.06	
<i>Precision Motion Control of A Nano Stage Using Repetitive Control and Double-Feedforward Compensation</i>	
Chi-Ying Lin	National Taiwan University of Science and Technology
Po-Ying Chen	National Taiwan University of Science and Technology

North Foyer (12F)	
TA02	
Service Robots and Their Execution Environments (Organized Session)	
Organizer: Kao-Shing Hwang	National Chung Cheng University
Chair: Alan Liu	National Chung Cheng University
Chair: Michael N. Mayer	National Chung Cheng University
10:20–10:35, TA02.01	
<i>Device Collaboration in Smart Homes as Service Delivery</i>	
Huan-Ming Liang	National Chung Cheng University
Alan Liu	National Chung Cheng University
Yi-Chih Chen	National Chung Cheng University
Chiung-Hon Leon Lee	Nanhua University
Yi-Chih Chen	National Chung Cheng University
10:35–10:50, TA02.02	
<i>Using U-Bot for RoboCup@home</i>	
Michael N. Mayer	National Chung Cheng University
Li-Wei Lu	National Chung Cheng University
Yu-Min Hung	National Chung Cheng University
Hong Wu	National Chung Cheng University
Yu-Cheng Chang	National Chung Cheng University
10:50–11:05, TA02.03	
<i>A Visual Surveillance System for Mobile Robot using Omnidirectional and PTZ cameras</i>	
Meng-Shiun Yu	National Chung Cheng University
Hong Wu	National Chung Cheng University
Huei-Yung Lin	National Chung Cheng University
11:05–11:20, TA02.04	
<i>A Humanoid Robot Designed for HuroCup Competition</i>	
Kuo-Yang Tu	National Kaohsiung First University of Science and Technology
Po Hsu Lin	National Kaohsiung First University of Science and Technology
Chia Yun Wu	National Kaohsiung First University of Science and Technology
Yun Hsiang Sun	National Kaohsiung First University of Science and Technology
Hsiang Pin Yang	National Kaohsiung First University of Science and Technology
Chia Ming Wang	National Kaohsiung First University of Science and Technology
Shou Chieh Chen	National Kaohsiung First University of Science and Technology
Wei Cheng Lee	National Kaohsiung First University of Science and Technology
11:20–11:35, TA02.05	
<i>T-S Fuzzy Control for Magnetic Levitation Systems Using Quantum Particle Swarm Optimization</i>	
Gwo-Ruey Yu	National Chung Cheng University
Yu-Jie Huang	National Ilan University
Lun-Wei Huang	National Ilan University

TA03 South Foyer (12F)
Biological and Physiological Engineering

Chair: Chun-Liang Lin National Chung Hsing University
 Chair: Tomonari Yamaguchi Kyushu Institute of Technology
 10:20–10:35, TA03.01

Feature Extraction of Visual Evoked Potentials Using State-Space Model

Jun Irie Kyushu Institute of Technology
 Tomonari Yamaguchi Kyushu Institute of Technology
 Kana Omori Kyushu Institute of Technology
 Katsuhiro Inoue Kyushu Institute of Technology

10:35–10:50, TA03.02

Feature Extraction from EEG Signals in SSVEP Spelling System

Tomonari Yamaguchi Kyushu Institute of Technology
 Kana Omori Kyushu Institute of Technology
 Jun Irie Kyushu Institute of Technology
 Katsuhiro Inoue Kyushu Institute of Technology

10:50–11:05, TA03.03

Asymptotic Stability of Neutral Functional Differential Equation Model of Genetic Regulatory Networks with Time-Varying Delays

Daesung Jung POSTECH
 Jahoo Koo POSTECH
 Sang-Chul Won POSTECH

11:05–11:20, TA03.04

Estimation of Noisy Gene Regulatory Networks

Chun-Liang Lin National Chung Hsing University
 Chia-Hua Chuang National Chung Hsing University

11:20–11:35, TA03.05

An OP-Based Potentiostat used in Electrochemical Bio-detection System

Jui-Lin Lai National United University
 Han-ning Wu National United University
 Hung-Hsi Chang National United University
 Kuo-Hung Liao National United University
 Rong-Jian Chen National United University
 Shi-Jinn Horng

National Taiwan University of Science and Technology
 11:35–11:50, TA03.06

Optimal Mapping of Torus Self-Organizing Map for Forearm Motion Discrimination based on EMG

Atsushi Kiso Chiba Institute of Technology
 Hirokazu Seki Chiba Institute of Technology

TA04 Auditorium (10F)
Advanced Pattern Measurement I (Organized Session)

Organizer: Shinpei Okawa
 The University of Electro-Communications

Chair: Toshiyuki Tanaka Keio University
 Chair: Yoshimitsu Aoki Keio University

10:20–10:35, TA04.01

Cell Segmentation from Phase-Contrast Images using Hybrid

Watershed and Region Growing Algorithm for Genomic Drug Discovery

Jo Orikawa Keio University
 Toshiyuki Tanaka Keio University

10:35–10:50, TA04.02

3-Dimensional Analysis of Nystagmus using Video and Image Processing

Shunsuke Tominaga Keio University
 Toshiyuki Tanaka Keio University

10:50–11:05, TA04.03

Automatic Change Detection of Buildings from Aerial Images

Satoshi Nakamura Keio University
 Yoshimitsu Aoki Keio University

11:05–11:20, TA04.04

Detecting and Tracking multiple fluorescence spot in Noisy DXT Image Sequence

Reo Sakakura Keio University
 Yoshimitsu Aoki Keio University
 Keishi Shimizu University of Fukui
 Shigetoshi Oiki University of Fukui

11:20–11:35, TA04.05

Object Tracking System by Pan-Tilt Moving Cameras and Robot Using Condensation Method

Hiroyuki Ukida The University of Tokushima

11:35–11:50, TA04.06

Imaging Velocimetry of Range Motion Based on "Moire Doppler Effect" and Frequency Estimation"

Yasuhiro Mochida The University of Tokyo
 Toru Kurihara The University of Tokyo
 Shigeru Ando The University of Tokyo

TA05 Chang Chin Room (10F)
Control for Industrial Applications

Chair: Li-Chen Fu National Taiwan University
 Chair: Shigemasa Nakagawa Sumitomo Metal Industries, Ltd.

10:20–10:35, TA05.01

Design and Implementation of Nonlinear Speed Controller with Adaptive Backstepping Sliding Mode Control Technique for an IPMSM Drive System

Cheng-Kai Lin National Taiwan University
 Li-Chen Fu National Taiwan University

Tian-Hua Liu
 National Taiwan University of Science and Technology

10:35–10:50, TA05.02

Data-Driven Optimal Control for Building Energy Conservation

Junya Nishiguchi Yamatake Corporation
 Tomohiro Konda Yamatake Corporation
 Ryota Dazai Yamatake Corporation

10:50–11:05, TA05.03

Adaptive Backstepping Servo Control for IPMSM Drive Systems with MTPA — An Implicit and Symbolic Computation Approach

Jen-te Yu National Taiwan University
 Cheng-Kai Lin National Taiwan University

Li-Chen Fu National Taiwan University
Tian-Hua Liu

National Taiwan University of Science and Technology

11:05–11:20, TA05.04

SOS Analysis of Cooling Control of Hot Strips in Transition Boiling Region

Shigemasa Nakagawa Sumitomo Metal Industries, Ltd.

Kentaro Hirata Nara Institute of Science and Technology

Kenji Sugimoto Nara Institute of Science and Technology

11:20–11:35, TA05.05

Dynamic Simulation and Experimental Study of Impedance Control for Robotic Orthosis to Assist Overhead Operations in Shipbuilding Process

Namkug Ku Seoul National University

Jung-Han Kwon Daewoo Shipbuilding & Marine Engineering

Ju-hwan Cha Seoul National University

Kyu-Yeul Lee Seoul National University

Sol Ha Seoul National University

Kwnag-Phil Park Seoul National University

Yoon-ok Cho Seoul National University

Joon-chaee Lee Seoul National University

A-ra Jo Seoul National University

11:35–11:50, TA05.06

Robust Rebound Suppression Control for Push-pull Solenoid Considering the Characteristic Change During Operation

Hokuto Mizutani Toyohashi University of Technology

Yoshiyuki Noda Toyohashi University of Technology

Takanori Miyoshi Toyohashi University of Technology

Kazuhiko Terashima Toyohashi University of Technology

TA06 Song Bo Room (10F)
Adaptive & Learning Control I (Organized Session)

Organizer: Kenji Ikeda The University of Tokushima

Chair: Kenji Ikeda The University of Tokushima

Chair: Kazuya Sato Saga University

10:20–10:35, TA06.01

Model-Based PFC Design based on Time-Varying ASPR Model for Anti-Windup Adaptive PID Control

Ikuro Mizumoto Kumamoto University

Akihiro Minami Kumamoto University

Zenta Iwai Kumamoto Prefectural College of Technology

10:35–10:50, TA06.02

Improvement in Performance-adaptive Control System for a Weigh Feeder

Shohei Kitano University of Hyogo

Takao Sato University of Hyogo

Nozomu Araki University of Hyogo

Toru Yamamoto Hiroshima University

10:50–11:05, TA06.03

A Design Method of Ideal Vehicle Models in Adaptive Driver-Combined-Vehicles System

Qiang Wang Kyushu Institute of Technology

Singo Tamaru Kyushu Institute of Technology

Hideki Wada Shin-Nippon Nondestructive Inspection Co. Ltd.
Masahiro Oya Kyushu Institute of Technology

11:05–11:20, TA06.04

Parameters Tuning Using RasID Algorithm in Q Value-Based Dynamic Programming with Boltzmann Distribution

Shanqing Yu Waseda University

Shingo Mabu Waseda University

Manoj Kanta Mainali Waseda University

Kotaro Hirasawa Waseda University

11:20–11:35, TA06.05

Model Matching Adaptive Control of Non-Square Multiple-Output-Delay Systems

Haixia Su Beihang University

Yingmin Jia Beihang University

Junping Du Beijing University of Posts and Telecommunications

Fashan Yu Henan Polytechnic University

TA07 101 (VF)
Recent Development on Robustness Analysis, Estimation, Robust and Sampled-Data Control (Organized Session)

Organizer: Chung-Yao Kao National Sun Yat-Sen University

Chair: Chung-Yao Kao National Sun Yat-Sen University

Chair: Hisaya Fujioka Kyoto University

10:20–10:35, TA07.01

Controller Synthesis for Multiple Finite Frequency Specifications: Dissipation Inequalities Approach

Chiaki Kojima The University of Tokyo

Shinji Hara The University of Tokyo

10:35–10:50, TA07.02

Robust Control for Input Time-Delay Systems: A Disturbance Observer Approach

In Hyuk Kim Myongji University

Young Ik Son Myongji University

10:50–11:05, TA07.03

Robust Stabilization and Robust H_∞ Design for Descriptor Systems with Uncertainties in all System Matrices: An LMI Approach

Li Lee National Sun Yat-Sen University

Cheng-Ta Ho National Sun Yat-Sen University

11:05–11:20, TA07.04

Robot Localization and Mapping by Matching the Environmental Features from Proprioceptive and Exteroceptive Sensors

Ming-Tzuoo Yin National Taiwan University

Feng-Li Lian National Taiwan University

11:20–11:35, TA07.05

Shift-Invariant Representation of Two Periodic System Classes Defined over Doubly-Infinite Continuous Time

Sei Zhen Khong University of Melbourne

Michael Cantoni University of Melbourne

11:35–11:50, TA07.06

Stability Analysis for a Class of Hamiltonian Systems with Digital Control

Shinji Kawakami Kyoto University

Hisaya Fujioka Kyoto University

Kwang-Ho Park Korea Agency for Technology and Standards
11:05–11:20, TA10.04

Education of Automation Infrastructure Based on International Standards

Sawai Pongswatd
King Mongkut's Institute of Technology Ladkrabang
Amphawan Julsereewong
King Mongkut's Institute of Technology Ladkrabang
Srinakorn Nontanakorn Fieldbus Foundation Thai Association
Hisashi Sasajima Yamatake Corporation
Tsuyoshi Kitai Yamatake Corporation

TA11 105 (VF)
Advances in Measurement

Chair: Hideki Hashimoto University of Tokyo
Chair: Kajiro Watanabe Hosei University
10:20–10:35, TA11.01

Measurement and Analysis of Tennis Swing Motion Using 3D Gyro Sensor

Yuri Iijima Hosei University
Kajiro Watanabe Hosei University
Kazuyuki Kobayashi Hosei University
Yosuke Kurihara Seikei University
10:35–10:50, TA11.02

Measurement of Static Electricity Generated by Human Walking

Yuki Bunda Hosei University
Kajiro Watanabe Hosei University
Kazuyuki Kobayashi Hosei University
Yosuke Kurihara Hosei University
10:50–11:05, TA11.03

Improvements in Accurate GPS Positioning Using Time Series Analysis

Yuichiro Koyama Keio University
Toshiyuki Tanaka Keio University
11:05–11:20, TA11.04

Coherent Change Detection with Complex Logarithm Transformation on SAR Imagery

Takehiro Hoshino University of Electro-Communications
Shouhei Kidera University of Electro-Communications
Tetsuo Kirimoto University of Electro-Communications
11:20–11:35, TA11.05

Position Measurement System for Cylindrical Objects Using Laser Range Finder

Hajime Tamura University of Tokyo
Takeshi Sasaki University of Tokyo
Xiangqi Huang University of Tokyo
Hideki Hashimoto University of Tokyo
Fumihiro Inoue Obayashi Corporation
11:35–11:50, TA11.06

Neutron Detection with NE213 Liquid Scintillator and Helium-3 Proportional Tube Detector

Bei-Zhen Hu National Chiao Tung University
Chung-Hsiang Wang National United University

Liq-Ji Yuan National Tsing Hua University
Guey-Lin Lin National Chiao Tung University
Huan Niu National Tsing Hua University

TA12 107 (VF)
Electrical Systems

Chair: Chih-Chiang Cheng National Sun Yat-Sen University
Chair: Cheng-Fang Tai National United University
10:20–10:35, TA12.01

Design of the Robust Backstepping Tracking Controllers for Synchronous Generators

Ming-Shan Kung National Sun Yat-Sen University
Yu-Feng Kuo National Sun Yat-Sen University
Chih-Chiang Cheng National Sun Yat-Sen University
10:35–10:50, TA12.02

Static Var Compensator Using Remote Signal

Pei-Hwa Huang National Taiwan Ocean University
Ta-Hsiu Tseng National Taiwan Ocean University
Yi-Kuan Ke National Taiwan Ocean University
10:50–11:05, TA12.03

Performance Measurement of Static Var Compensators in Distribution System

Yi-Kuan Ke National Taiwan Ocean University
Pei-Hwa Huang National Taiwan Ocean University
Ta-Hsiu Tseng National Taiwan Ocean University
11:05–11:20, TA12.04

Loop Filter Design for Fourth-order Charge-Pump PLL Using Linearized Discrete-Time Model

Yu-Cheng Chen National Taiwan University
Fan-Ren Chang National Taiwan University
11:20–11:35, TA12.05

Design a Low-Noise Operational Amplifier with Constant-gm

Jui-Lin Lai National United University
Ting-You Lin National United University
Cheng-Fang Tai National United University
Yi-Te Lai National United University
Rong-Jian Chen National United University
11:35–11:50, TA12.06

Analysis and Design of SC DC-DC Converter for Maximum Efficiency

Wandee Petchmaneelumka
King Mongkut's Institute of Technology Ladkrabang
Sawai Pongswatd
King Mongkut's Institute of Technology Ladkrabang
Yongyuth Prapamonton
King Mongkut's Institute of Technology Ladkrabang
Kei Eguchi Shizuoka University
Hirofumi Sasaki Tokai University
Yongyuth Prapamonton
King Mongkut's Institute of Technology Ladkrabang

TA13 108 (VF)
Applications of Satellite Navigations (Organized Session)

Organizer: Fan-Ren Chang National Taiwan University
 Chair: Jyh-Ching Juang National Cheng Kung University
 Chair: He-Sheng Wang National Taiwan Ocean University
 10:20–10:35, TA13.01

SLERP-Based Optimal TRIAD Algorithm

Fan-Ren Chang National Taiwan University
 Shu-Wei Chang National Taiwan University
 Yi-Te Chiang Lee-Ming Institute of Technology
 10:35–10:50, TA13.02

Applying Fuzzy Gain Scheduling Technique for GPS-Based Unmanned Vehicle Navigation and Control

Shun-Hung Chen National Cheng Kung University
 Yu-Chun Li National Cheng Kung University
 Jyh-Ching Juang National Cheng Kung University
 10:50–11:05, TA13.03

Evaluation of Local Aera GPS Quality Monitoring Algorithms in Taipei Flight Information Region

Shuo-Ju Yeh National Cheng Kung University
 Hui-Chieh Hsu National Cheng Kung University
 Yao-Cheng Lin National Cheng Kung University
 Shau-Shiun Jan National Cheng Kung University
 11:05–11:20, TA13.04

A Convex Optimization Approach to GPS Receiver Tracking Loop Design

He-Sheng Wang National Taiwan Ocean University
 11:20–11:35, TA13.05

Toward Real-Time Precise Point Positioning: Differential GPS Based on IGS Ultra Rapid Product

Hung-Wei Chen National Taiwan University
 Yi-Te Chiang Lee-Ming Institute of Technology
 Fan-Ren Chang National Taiwan University
 He-Sheng Wang National Taiwan Ocean University

TA14 109 (VF)
Human Interfaces

Chair: Takayuki Hoshi Kumamoto University
 Chair: Hiroyuki Shinoda University of Tokyo
 10:20–10:35, TA14.01

Large Aperture Airborne Ultrasound Tactile Display Using Distributed Array Units

Masafumi Takahashi The University of Tokyo
 Hiroyuki Shinoda The University of Tokyo
 10:35–10:50, TA14.02

Articulated Multilateral Control for Adaptation to Variation of System Connection

Takumi Ishii Keio University
 Seiichiro Katsura Keio University
 10:50–11:05, TA14.03

Analysis of Environmental Surface Data Using Haptic Scanning System Constructed from the Biaxial Linear Motors

Hiroyuki Nagai Keio University
 Seiichiro Katsura Keio University
 11:05–11:20, TA14.04

Relationship Between Brightness Illusion and Recognition Performance in Human-Computer Interaction

Yuzo Takahashi Hiroshima City University
 11:20–11:35, TA14.05

Design of New Braille Display using Inverse Principle of Tuned Mass Damper

Kiyoshi Ioi Kinki University
 Yoshihisa Kawaguchi Kinki University
 Yoshikazu Ohtsubo Kinki University
 11:35–11:50, TA14.06

Observations of Airflow Arising from Airborne Ultrasound Tactile Display

Takayuki Hoshi Kumamoto University
 Yuta Nishiyama Kumamoto University
 Ippei Torigoe Kumamoto University

TA15 110 (VF)
Kukanchi (Organized Session)

Organizer: Kazuyoshi Wada Tokyo Metropolitan University
 Chair: Kazuyoshi Wada Tokyo Metropolitan University
 Chair: Yasunari Fujimoto Tokyo Metropolitan University
 10:20–10:35, TA15.01

Development of Infrared Communication Device using RT Middleware

Kazuyoshi Wada Tokyo Metropolitan University
 Keisuke Tanaka Tokyo Metropolitan University
 Hayato Takayama Tokyo Metropolitan University
 10:35–10:50, TA15.02

Information Recommendation System for the Care Prevention Using a Communication Robot

Kazumasa Murakami Tokyo Metropolitan University
 Tomomi Shibano Tokyo Metropolitan University
 Yasunari Fujimoto Tokyo Metropolitan University
 Toru Yamaguchi Tokyo Metropolitan University
 10:50–11:05, TA15.03

Domestic Robot System Considering Generalization

Takahiro Iijima Tokyo Metropolitan University
 Eri Sato Shimokawara Tokyo Metropolitan University
 Toru Yamaguchi Tokyo Metropolitan University
 11:05–11:20, TA15.04

Information Reduction for Environment Perception of an Intelligent Robot Arm Equipped with a 3D Range Camera

Hiroyuki Masuta Tokyo Metropolitan University
 Naoyuki Kubota Tokyo Metropolitan University
 11:20–11:35, TA15.05

Indoor Positioning with Pseudolites

Yoshihiro Sakamoto Waseda University
 Haruhiko Niwa Waseda University
 Takuji Ebinuma Tokyo University of Marine Science and Technology

Kenjiro Fujii Hitachi Industrial Equipment Systems Co., Ltd.
 Shigeki Sugano Waseda University
 11:35–11:50, TA15.06

Dosing Timing Recognition by Ubiquitous Sensors

Takuo Suzuki University of Tsukuba
Yasushi Nakauchi University of Tsukuba

TA16 West Gallery (VF)
Interactive Session I

10:20–11:50, TA16.01

Measurement of Human Heartbeat using a Novel Sensing Technique Based on Measurement of Current Generated by Electrostatic Induction

Koichi Kurita Kochi National College of Technology
Taiki Nonaka Kochi National College of Technology
Hitoshi Kumon Toyota Motor Corporation

10:20–11:50, TA16.02

Maximum Likelihood Estimation of Target RCS in Tracking

Sun-Mog Hong Kyungpook National University
Young-Hun Jung Agency for Defense Development
Sang-Hong Seo Kyungpook National University

10:20–11:50, TA16.03

Estimation of Corrosion Rates at External Corrosion of Pipes Under Insulation — Evaluation Indexes of Case Databases —

Shigeyuki Tateno Waseda University
Sung-Hye Moon Waseda University
Hisayoshi Matsuyama Waseda University

10:20–11:50, TA16.04

Uncertainty Estimation of Blood Chemical Analysis by QA Engineering

Yasuo Iwaki Chaos applied research office

10:20–11:50, TA16.05

Design of Motor Controller Based on System Identification

Aolin Tang Shanghai Jiaotong University
Qixin Cao Shanghai Jiaotong University

10:20–11:50, TA16.06

Fault Diagnosis Based on Discrete Wavelet Transform and ART2 Neural Network

In Soo Lee Kyungpook National University
Sang-Jin Lee Kyungpook National University
Young-Wung Kim Kyungpook National University

10:20–11:50, TA16.07

Motion Switching Control of Robotic Manipulators and Reducing a Throughput Time in Handling Semiconductor Wafers

Koichi Abiko Nagaoka University of Technology
Hirata Kenji Nagaoka University of Technology
Yoshito Ohta Kyoto University

10:20–11:50, TA16.08

Realization of Non-Fourier Phenomena in Heat Transfer with 2D Transfer Function

Boe-Shong Hong National Chung Cheng University
Po-Jen Su National Cheng Kung University
Chia-Yu Chou National Chung Cheng University
Chen-I Hung National Cheng Kung University

10:20–11:50, TA16.09

Implementation and Experimental Validation of Circular Periodic

Motion Generation for Mobile Robots Using Limit Cycle Systems

Kenichi Yamada Osaka Prefecture University
Naoyuki Hara Osaka Prefecture University
Hideki Kokame Osaka Prefecture University
Keiji Konishi Osaka Prefecture University

10:20–11:50, TA16.10

Sensorless T-S Fuzzy Controller for Wind Power Generating Systems

Kuang-Yow Lian National Taipei University of Technology
Ya-Lun Ouyang Chung-Yuan Christian University

10:20–11:50, TA16.11

A Class of Fast Unscented Kalman Filtering Algorithms

Xiaoyan Fu Beihang University
Yingmin Jia Beihang University
Junping Du Beijing University of Posts and Telecommunications
Fashan Yu Henan Polytechnic University

10:20–11:50, TA16.12

Prediction of vocalization using time-frequency information of mu rhythm

Akira Toyomura Tokyo Denki University
Koichi Yokosawa Hokkaido University
Kaname Suzuki Hokkaido University
Shinya Kuriki Tokyo Denki University

10:20–11:50, TA16.13

Generalized Clustering Coefficients and Milgram Condition for q-th Degrees of Separation

Norihito Toyota Hokkaido Information University

10:20–11:50, TA16.14

Parallel Mechanism Using Passive Pin Joints with Wide Movable Area

Kazuya Okawa Chiba University
Yoshihiro Okamura Chiba University

10:20–11:50, TA16.15

Development of PXA320 Based Embedded System for Ships

Jin-Woo Park Pusan National University
Hyung-Chul Won Pusan National University
Ki-joong Kim Pusan National University
Joon-Young Choi Pusan National University

10:20–11:50, TA16.16

A Precise Automatic Riveting System Using Internet-based Monitoring and Control

Hsiung-Cheng Lin National Chin-Yi University of Technology
C. K. Tung National Chin-Yi University of Technology
L. Y. Liu Chienkuo Technology University
C. H. Chen Chienkuo Technology University

TA17 Fu-Chuon Room (BF)
Robotic System Control

Chair: Wen-Chung Chang
National Taipei University of Technology

Chair: Zhi-Wei Luo
Kobe University

10:20–10:35, TA17.01

Establishment of Common Coordinate System by using Migration

of Autonomous Robot Herd

Koji Makino Tokyo University of Technology
Jin-Hua She Tokyo University of Technology
Yasuhiro Ohyama Tokyo University of Technology
10:35–10:50, TA17.02

Hybrid Fuzzy Control of an Eye-to-Hand Robotic Manipulator for Autonomous Assembly Tasks

Wen-Chung Chang National Taipei University of Technology
Chia-Kai Shao National Taipei University of Technology
10:50–11:05, TA17.03

Hybrid Eye-to-Hand and Eye-in-Hand Visual Servoing for Autonomous Robotic Manipulation

Wen-Chung Chang National Taipei University of Technology
Chia-Kai Shao National Taipei University of Technology
11:05–11:20, TA17.04

Passive Control of A Dual-Arm Cooperative Robot

Kosuke Kido Kobe University
Zhi-Wei Luo Kobe University
Akinori Nagano Kobe University
11:20–11:35, TA17.05

Toward the Compact Design of a Robotic Waveguide for Active Line Duplication

Koichi Yoshida NTT
Kuniaki Tanaka NTT
Takeshi Tsujimura NTT
Kazutaka Noto NTT
Tetsuya Manabe NTT
Yuji Azuma NTT
11:35–11:50, TA17.06

Adaptive Backstepping Controller for Triple Rotary Joint Manipulator

Jadesada Maneeratanaporn Thammasat University
Pakpoom Patompak Thammasat University
Siripong Varongkriengkrai Thammasat University
Itthisek Nilkhamhang Thammasat University
Kanokvate Tungpimolrut NSTDA

TA18 Der-Hou Room East (BF)
Man-Machine Systems and Human-Robot Interaction

Chair: Shigeki Sugano Waseda University
Chair: Kuu-young Young National Chiao-Tung University
10:20–10:35, TA18.01

Pressure Control on Whole Surface of Humanmimetic Multi-fingered Hand with Tactile Sensing

Taisuke Sugaiwa Waseda University
Kunihiro Iwamoto Waseda University
Hiroyasu Iwata Waseda University
Shigeki Sugano Waseda University
10:35–10:50, TA18.02

Relative Spectral Power (RSP) and Temporal RSP as Features for Movement Imagery EEG Classification with Linear Discriminant Analysis

Manoj Kumar Mukul The University of Electro-Communications

Fumitoshi Matsuno Kyoto University
10:50–11:05, TA18.03

Three-Channel Electroencephalogram (EEG) Signal Analysis by Independent Component Analysis and Classification by Linear Discriminant Analysis.

Manoj Kumar Mukul The University of Electro-Communications
Fumitoshi Matsuno Kyoto University
11:05–11:20, TA18.04

Learning by Demonstration for Tool-Handling Task

Kuu-young Young National Chiao-Tung University
Hoa-yu Chan National Chiao Tung University
Hsin-Chia Fu National Chiao Tung University
11:20–11:35, TA18.05

The Workability of Sliding Perturbation Observer as Haptic Signal at the Surgical Robot Instrument

Chi Yen Kim Pusan National University
MinCheol Lee Pusan National University
Seok Jo Go Dong-Eui Institute of Technology
11:35–11:50, TA18.06

Pain Perception Model of Human Skin Using Multiple Pain Sensors

Aydin Tarik Zengin Kumamoto University
Nobutomo Matsunaga Kumamoto University
Hiroshi Okajima Kumamoto University
Shigeyasu Kawaji Kumamoto University

TA19 Der-Hou Room East (BF)
Vehicle Control

Chair: Yasuchika Mori Tokyo Metropolitan University
Chair: Akira Shimada Shibaura Institute of Technology
10:20–10:35, TA19.01

Applying Generalized Minimum Variance Control for Ship's steering control system

Masayoshi Doi Hiroshima Institute of Technology
Kazuhiisa Nagamoto Yuge National College of Maritime Technology
Yutaka Osaka IHI corporation
Tetsuya Takehira Ministry of Defense
Yasuchika Mori Tokyo Metropolitan University
10:35–10:50, TA19.02

Feedback Control of a Suspension System with Non-Model-Based Velocity and Acceleration Estimators

Yuta Kitsuka Oita University
Tsuyoshi Nimiya Oita University
Haruo Suemitsu Oita University
Takami Matsuo Oita University
10:50–11:05, TA19.03

A Movement Control on Indoor Blimp Robots

Akira Shimada Shibaura Institute of Technology
Hayato Furukawa Shibaura Institute of Technology
Yutaka Uchimura Shibaura Institute of Technology
11:05–11:20, TA19.04

Spin-Axis Stabilization of Gyroless and Underactuated Rigid Spacecraft Using Modified Rodrigues Parameters

Yee-Jin Cheon Korea Aerospace Research Institute
11:20–11:35, TA19.05

A Study of SDRE and ISMC Combined Scheme with Application to Vehicle Brake Control

Yew-Wen Liang National Chiao Tung University
Yuan-Tin Wei National Chiao Tung University
Der-Cherng Liaw National Chiao Tung University
Chiz-Chung Cheng Lee-Ming Institute of Technology
Li-Gang Lin National Chiao Tung University

11:35–11:50, TA19.06

Transient Control of Air Intake system in Diesel Engines

Arata Ejiri FUJITSU LABORATORIES LTD
Jun Sasaki TRANSTRON Inc
Yusuke Kinoshita TRANSTRON Inc
Keiji Shimotani TRANSTRON Inc
Ryuji Iizawa TRANSTRON Inc

Grand Ballroom (12F)

Invited Lecture I

Chair: Hisaya Fujioka Kyoto University
13:20–14:10

Robotics and Automation in Shipbuilding Industry

Jae-Hoon Kim Samsung Heavy Industries Co., Ltd.

Auditorium (10F)

Invited Lecture II

Chair: Ching-Chih Tsai National Chung Hsing University
13:20–14:10

Computational Intelligent Brain Computer Interaction and Its Applications on Driving Cognition

Chin-Teng Lin National Chiao Tung University

TB01

Control Applications I

Sky Lounge (12F)

Chair: Masaaki Nagahara Kyoto University
Chair: Koji Tsumura University of Tokyo
14:30–14:45, TB01.01

Design of Observation for Multi-qubit Preparation based on Equilibrium Point Analysis

Daisuke Matsuna The University of Tokyo
Koji Tsumura The University of Tokyo

14:45–15:00, TB01.02

Synchronization Detection of Biological CAM Plants Using Instantaneous Lyapunov Exponent

Yusuke Totoki Oita University
Akira Goto Oita University
Haruo Suemitsu Oita University
Takami Matsuo Oita University

15:00–15:15, TB01.03

Design of State Predictive Congestion Controllers considering Effective Equilibrium Points

Takehito Azuma Utsunomiya University
Kazuki Fukuyama Utsunomiya University

15:15–15:30, TB01.04

2DOF Control System Design for Maneuverability Matching and Gust Disturbance Rejection in In-Flight Simulator MuPAL-alpha

Yoshio Ebihara Kyoto University
Yoshinori Fujiwara Kyoto University
Tomomichi Hagiwara Kyoto University
Masayuki Sato JAXA

15:30–15:45, TB01.05

An Analysis on Two-Joint Tendon Driven Hybrid Control Systems

Akira Shimada Shibaura Institute of Technology
Atsushi Maruta Shibaura Institute of Technology
Yutaka Uchimura Shibaura Institute of Technology

15:45–16:00, TB01.06

Quadratic Programming for Monotone Control Theoretic Splines

Masaaki Nagahara Kyoto University
Clyde Martin Texas Tech University
Yutaka Yamamoto Kyoto University

TB02

Service Engineering and Interface to Support High-Quality Life I (Organized Session)

North Foyer (12F)

Organizer: Sho Yokota Setsunan University
Chair: Hiroshi Hashimoto

Advanced Institute of Industrial Technology

Chair: Sho Yokota Setsunan University

14:30–14:45, TB02.01

A Measuring Method of Satisfaction Rating in Service Engineering

Mitsunari Uozumi Mitsubishi Electric Corp.
Hajime Asama University of Tokyo

14:45–15:00, TB02.02

Development of an EMG Acquisition System of Universal Bio-Signal Interface for High-Quality Life

Hiroyuki Kobayashi Osaka Institute of Technology
Tetsuya Sasakura Osaka Institute of Technology
Minoru Ishidzuka Osaka Institute of Technology

15:00–15:15, TB02.03

Adaptive Rate Datagram Protocol Suitable for Real-Time Communication in Ad-Hoc Networks

Toshinori Tsuboi Tokyo University of Technology
Chang Yi-Luo Tokyo University of Technology
Komuro Nobuyoshi Chiba University
Ueda Hiromi Tokyo University of Technology

15:15–15:30, TB02.04

Dynamical Analysis of Grasping with Hand Model for High Quality Product Design

Hiroshi Hashimoto Advanced Institute of Industrial Technology
Hideki Murakoshi Advanced Institute of Industrial Technology
Akinori Sasaki Tokyo University of Technology
Yasuhiro Ohyama Tokyo University of Technology
Koji Makino Tokyo University of Technology
Sho Yokota Setsunan University

15:30–15:45, TB02.05

A Service Design Methodology Based on the Discrete Event

Simulation — Proposal of the PLAN —

Seiichi Kawata Advanced Institute of the Industrial Technology
Yosuke Tenma Advanced Institute of the Industrial Technology
Harunobu Satakuni
Advanced Institute of the Industrial Technology
Chinatsu Sugita
Advanced Institute of the Industrial Technology
Tsuyoshi Aziro Advanced Institute of the Industrial Technology
Hiroshi Hashimoto Advanced Institute of Industrial Technology

TB03 South Foyer (12F)
Autonomous Decentralized Systems

Chair: Toshihiko Sasama Tottori University
Chair: Takao Terano Tokyo Institute of Technology
14:30–14:45, TB03.01

Swarm Robot Simulation Using Object-Oriented Programming

Somar Muhammad Boubou Kyushu Institute of Technology
Yoshihiko Tagawa Kyushu Institute of Technology
14:45–15:00, TB03.02

Theoretical and Experimental Study on Excluded Volume Effect in Pedestrian Queue

Daichi Yanagisawa The University of Tokyo
Yuki Tanaka The University of Tokyo
Rui Jiang University of Science and Technology of China
Akiyasu Tomoeda Meiji University
Kazumichi Ohtsuka The University of Tokyo
Yushi Suma The University of Tokyo
Katsuhiko Nishinari The University of Tokyo
15:00–15:15, TB03.03

Determining the Length of Static Message for Efficient Use of FlexRay Network

Byungseok Seo Kyungpook National University
Dongik Lee Kyungpook National University
15:15–15:30, TB03.04

Agent-Based Modeling for Analyzing Labor Migration in Economic Activities

Bin Jiang Tokyo Institute of Technology
Rio Nishida Tokyo Institute of Technology
Takashi Yamada Tokyo Institute of Technology
Takao Terano Tokyo Institute of Technology
15:30–15:45, TB03.05

Detection Method to Continue Tracking of Automatic Human Tracking System

Shinya Iwasaki Tottori University
Takao Kawamura Tottori University
Toshihiko Sasama Tottori University
Kazunori Sugahara Tottori University
Hiroto Kakiuchi Melco Power System Co., Ltd.
15:45–16:00, TB03.06

A Method of Transparent Swapping Control for Mobile Agents

Masayuki Higashino Tottori University
Toshihiko Sasama Tottori University
Takao Kawamura Tottori University

Kazunori Sugahara Tottori University

TB04 Auditorium (10F)
Advanced Pattern Measurement II (Organized Session)

Organizer: Shinpei Okawa The University of Electro-Communications
Chair: Toshiyuki Tanaka Keio University
Chair: Yoshimitsu Aoki Keio University
14:30–14:45, TB04.01

High Accuracy Analysis Method for 3D Nanoscale Deformation / Fracture Characteristics inside a Material

Mitsuru Nakazawa Keio University
Masakazu Kobayashi Toyohashi University of Technology
Hiroyuki Toda Toyohashi University of Technology
Yoshimitsu Aoki Keio University
14:45–15:00, TB04.02

Severity Analysis of Pulmonary Emphysema based on the Comparison of Expiratory and Inspiratory States

Kazuaki Neda Keio University
Toshiyuki Tanaka Keio University
Toru Shirahata Keio University
Hiroaki Sugiura Keio University
15:00–15:15, TB04.03

Accurate Estimation of Tone Duration in Automatic Music Transcription

Noboru Funakoshi Keio University
Toshiyuki Tanaka Keio University
15:15–15:30, TB04.04

Reduction of Poisson Noise for Time-Resolved Diffuse Optical Measurement

Shinpei Okawa The University of Electro-Communications
Yukio Yamada The University of Electro-Communications
15:30–15:45, TB04.05

Fast Positioning using N4SID Model Referenced Predictive Anti-phase Pitch Driving Vibration Suppression Control

Kazuaki Akagi Ibaraki University
Sumiya Hideyasu Ibaraki University

TB05 Chang Chin Room (10F)
Sponsored Workshop: Symbolic Mathematical Approach to Virtual Plant Prototyping

14:30–14:50
A Historical Review of Symbolic Computation Techniques for Control Engineering
Maplesoft
14:50–15:10
Component-Based Physical Modeling for Multidomain and Other Modern Applications
Maplesoft
15:10–15:40
Computer Algebra — What Does It Bring to Control System Design ?
Hirokazu Anai Fujitsu Laboratories Ltd/Kyushu University

15:40–16:00
Discussions
Moderator: Maplesoft

TB06 Song Bo Room (10F)
Adaptive & Learning Control II (Organized Session)

Organizer: Kenji Ikeda The University of Tokushima
Chair: Masanori Takahashi Tokai University
Chair: Takao Sato University of Hyogo
14:30–14:45, TB06.01

A Simple Redesign of Model Reference Adaptive Control for State-Delayed Systems with General Relative Degrees

Yoshihiko Miyasato The Institute of Statistical Mathematics
14:45–15:00, TB06.02

Generalized Structure for Stable Model Reference Adaptive Control System

Seitaro Tanahashi National Defense Academy
Keietsu Itamiya National Defense Academy
15:00–15:15, TB06.03

Control Performance Amelioration with Gain Retuning

Yoshihiro Ohnishi Ehime University
15:15–15:30, TB06.04

Design of a Data-Driven Internal Model Controller

Kento Tsutsumi Hiroshima University
Toru Yamamoto Hiroshima University
15:30–15:45, TB06.05

Estimation of a Transition Time in Piecewise Linear Systems

Kenji Ikeda The University of Tokushima
Tomoaki Kashiwao Niihama National College of Technology
Shimomura Takao The University of Tokushima
15:45–16:00, TB06.06

Conditions for Mixed Small Gain and Positive Real Property for LTI Systems

Sirisak Wongsura The University of Tokyo
Lu Liu The University of Tokyo
Shinji Hara The University of Tokyo

TB07 101 (VF)
Tracking Control with Some Control Issues (Organized Session)

Organizer: Toru Asai Osaka University
Chair: Kenji Sawada University of Electro-Communications
Chair: Toru Asai Osaka University
14:30–14:45, TB07.01

State-Space Controller Design for Stabilization of Descriptor Systems

Masaki Inoue Osaka University
Teruyo Wada Osaka University
Masao Ikeda Osaka University
14:45–15:00, TB07.02

Trajectory Tracking and Collision Avoidance Against a Non-cooperative Omnidirectional Vehicle Based on Minimal Collision Time

Isoda Naritaka Osaka University
Ayumu Kitagaki Osaka University
Toru Asai Osaka University

15:00–15:15, TB07.03

A Design Procedure of Discrete-Time Tracking Control Systems with Actuator Saturation

Kenji Sawada The University of Electro-Communications
Tsuyoshi Kiyama Osaka University

15:15–15:30, TB07.04

Direct Yaw-Moment Control Method for Electric Vehicles to Follow the Desired Path by Driver

Hiroshi Okajima Kumamoto University
Shouhei Yonaha Kumamoto University
Nobutomo Matsunaga Kumamoto University
Shigeyasu Kawaji Kumamoto University

15:30–15:45, TB07.05

Extension of Reference Signal in Iterative Learning Control for Non-minimum Phase Systems

Chee Leong Ooi Deutsche Securities
Toru Asai Osaka University
Hiroshi Okajima Kumamoto University

TB08 102 (VF)
Networked Sensing and Control Systems I

Chair: Jyh-Ching Juang National Cheng Kung University
Chair: Shinji Ohyama Tokyo Institute of Technology

14:30–14:45, TB08.01

Switching Control Algorithm for Sensor Scheduling

Yuta Kochiyama Keio University
Hirotomitsu Ohmori Keio University

14:45–15:00, TB08.02

Outlier Detection Technique for RSS-Based Localization Problems in Wireless Sensor Networks

Yu Chi Chen National Cheng Kung University
Wei Chih Sun National Cheng Kung University
Jyh Ching Juang National Cheng Kung University
Wei-Chih Sun National Cheng Kung University

15:00–15:15, TB08.03

Output Feedback Controller Design of Networked Control Systems with Nonlinearity: An LMI Approach

Young Jun Yoo POSTECH
Jahoo Koo POSTECH
Sang-Chul Won POSTECH

15:15–15:30, TB08.04
Synch-Free RF Time-of-Flight Measurement System for Wireless Sensor Networks Based on Vernier Effect

Sang-Il Ko Tokyo Institute of Technology
Go Aikawa Tokyo Institute of Technology
Jun-ya Takayama Tokyo Institute of Technology
Shinji Ohyama Tokyo Institute of Technology

15:30–15:45, TB08.05

Compensating Network Delays for Smart Actuator Using Lagrange Polynomial Curve Fitting

Sunyoung Kang Kyungpook National University
 Dongik Lee Kyungpook National University
 15:45–16:00, TB08.06

A Robust Adaptive Algorithm for Bilateral Control System without Force Sensor with Time Delay

Suangsamorn Nurung Thammasat University
 Itthisek Nilkhamhang Thammasat University

TB09 103 (VF)
Evolutionary Technology and its Applications I (Organized Session)

Organizer: Kazuhiro Ohkura Hiroshima University
 Chair: Kazuhiro Ohkura Hiroshima University
 Chair: Yukiko Orito Hiroshima University

14:30–14:45, TB09.01

Effective Diversification of Ant-Based Search by Considering Agent Traffic in Edges

Akira Hara Hiroshima City University
 Souichi Tanabe Hiroshima City University
 Takumi Ichimura Prefectural University of Hiroshima
 Tetsuyuki Takahama Hiroshima City University

14:45–15:00, TB09.02

Construction of Players' Action for Robocup Soccer Using Graph Structured Program Evolution

Yasuaki Horima Yokohama National University
 Shinichi Shirakawa Yokohama National University
 Noriko Yata Yokohama National University
 Tomoharu Nagao Yokohama National University

15:00–15:15, TB09.03

Estimation of ZigBee's RSSI Fluctuated by Crowd Behavior in Indoor Space

Masaya Arai Hokkaido University
 Hidenori Kawamura Hokkaido University
 Keiji Suzuki Hokkaido University

15:15–15:30, TB09.04

Particle Filter Based Indoor Localization with ZigBee Sensor Networks

Junpei Tsuji Hokkaido University
 Hidenori Kawamura Hokkaido University
 Keiji Suzuki Hokkaido University
 Takeshi Ikeda

National Institute of Advanced Industrial Science and Technology
 Akio Sashima

National Institute of Advanced Industrial Science and Technology
 Koichi Kurumatani

National Institute of Advanced Industrial Science and Technology
 15:30–15:45, TB09.05

A Swarm Robotics Approach to Cooperative Package-Pushing Problems with Evolving Recurrent Neural Networks

Kazuhiro Ohkura Hiroshima University
 Toshiyuki Yasuda Hiroshima University
 Yukihiko Kotani Hiroshima University
 Yoshiyuki Matsumura Shinshu University

TB10 104 (VF)
Challenges for Information Sharing on Industrial Network I (Organized Session)

Organizer: Tsutomu Yamada Hitachi, Ltd.
 Chair: Tsutomu Yamada Hitachi, Ltd.
 Chair: Akio Ito Yokogawa Electric Corporation

14:30–14:45, TB10.01

Energy Efficiency Requires Information Sharing on Industrial Networks

Tsutomu Yamada Hitachi, Ltd.
 Masatoshi Takano TOYOTA MOTOR CORPORATION
 Takayanagi Yoichi TOSHIBA CORPORATION
 Ito Akio Yokogawa Electric Corporation

14:45–15:00, TB10.02

Extending Field Device Functionality using FDT/DTM Technology

Ito Akio Yokogawa Electric Corporation

15:00–15:15, TB10.03

Combination of FDT and EDDL Technologies

Stefan Lugert Endress+Hauser Process Solutions AG
 Sandra Gisy Endress+Hauser Process Solutions
 Kato Mamoru Endress+Hauser Japan

15:15–15:30, TB10.04

OPC Server for Real-Time Ethernet

Genki Tateno TOSHIBA CORPORATION
 Yoshitomo Mizoguchi TOSHIBA CORPORATION
 Masako Koyama TOSHIBA CORPORATION
 Yoichi Takayanagi TOSHIBA CORPORATION
 Akira Nojima

TOSHIBA MITSUBISHI-ELECTRIC INDUSTRIAL SYSTEMS CORPORATION

15:30–15:45, TB10.05

Multiplexing by MIMO that FA expects

Hisato Yoneda Murata Machinery, LTD.
 Kenji Kumagai Murata Machinery, LTD.

TB11 105 (VF)
Image Processing

Chair: Kohji Kamejima Osaka Institute of Technology
 Chair: Shigeru Takayama Ritsumeikan University

14:30–14:45, TB11.01

Motion Segmentation Scheme using Multichannel Optical Flow Estimator

Teruo Yamaguchi Kumamoto University
 Jun Hirai Kumamoto University

14:45–15:00, TB11.02

Perceptual Equivalence of Environmental Saliency in Naturally Complex Scene

Kohji Kamejima Osaka Institute of Technology

15:00–15:15, TB11.03

Extraction of Dense Urban Area from High Resolution Satellite Images

Yuta Mizumoto Nagasaki University
 Senya Kiyasu Nagasaki University

Kotaro Sonoda Nagasaki University
Sueharu Miyahara Nagasaki University
15:15–15:30, TB11.04

Active Ranging System Based on Structured Laser Light Image

Sooyeong Yi Seoul National University of Technology
Jinhu Suh Pohang Institute of Intelligent Robotics
Youngjin Hong Pohang Institute of Intelligent Robotics
David Hwang ThinkLife Robotics, Inc.
15:30–15:45, TB11.05

Velocity Measurement of River Flow for River Disaster Prevention

Hideto Nishikado Ritsumeikan University
Shigeru Takayama Ritsumeikan University
15:45–16:00, TB11.06

A Progressive Approach for Building Extraction by Fusing LIDAR Data and Co-Registered Bands

Hong Wei University of Reading
Wei Xu Surrey University

TB12 107 (VF)
Mechatronic Systems and Control I

Chair: Masahide Ito Seikei University
Chair: Yoichi Shiraishi Gunma University
14:30–14:45, TB12.01

Backward Swing Noise Reduction of Windshield Wiper Using an Embedded System

Youg Zhe Chu Gunma University
Wataru Kawauchi Gunma University
Mona Abo El Dahb Gunma University
Yoichi Shiraishi Gunma University
Takanori Saito Realize Computer Engineering, co., Ltd.
14:45–15:00, TB12.02

Development and Application of Flexible Pneumatic Cylinder with Linear Encoder

Akimasa Fukuhara Okayama University of Science
Tetsuya Akagi Okayama University of Science
Shujiro Dohta Okayama University of Science
15:00–15:15, TB12.03

Dynamic Analysis of a Three-Axis Robot Wrist and Optimization of its Structure

Hong Dae Sun Changwon National University
Jang U-il Changwon National University
Kwon Jung-Hee Changwon National University
15:15–15:30, TB12.04

Maximal Admission of Joint Range of Motion Based on Redundancy Resolution for Kinematically Redundant Manipulators

Masahide Ito Seikei University
Kazuyoshi Kawatsu Seikei University
Masaaki Shibata Seikei University
15:30–15:45, TB12.05

Development and Analysis of Small-sized Quasi-servo Valve Using On/Off Valves

Tetsuya Akagi Okayama University of Science
Shujiro Dohta Okayama University of Science

FeiFei Zhao Okayama University of Science
Keiji Fujita Okayama University of Science
15:45–16:00, TB12.06

Sliding Mode Control for a Ball and Arc System

Ming-Tzu Ho National Cheng Kung University
Sho-Tsung Kao National Cheng Kung University
Yu-Sheng Lu National Cheng Kung University

TB13 108 (VF)
Navigation, Guidance, and Control in Aerospace Systems I
(Organized Session)

Organizer: Tsutomu Ichikawa
Japan Aerospace Exploration Agency
Chair: Shin-Ichiro Nishida Japan Aerospace Exploration Agency
Chair: Tsutomu Ichikawa Japan Aerospace Exploration Agency
14:30–14:45, TB13.01

Analyses for Mobility and Control System of Lunar Rover

Shin-Ichiro Nishida Japan Aerospace Exploration Agency
Sachiko Wakabayashi Japan Aerospace Exploration Agency
14:45–15:00, TB13.02

Low-Thrust Trajectory Optimization Using Second-Order Generating Functions

Mai Bando Kyoto University
Hiroshi Yamakawa Kyoto University
15:00–15:15, TB13.03

Control System Design for Visual Based Indoor Inspection Helicopter

Takehiro Higuchi Yokohama National University
Fuyuto Takeyama Yokohama National University
Seiya Ueno Yokohama National University
15:15–15:30, TB13.04

Application of High-Precision two-way Ranging to the spacecraft navigation

Tsutomu Ichikawa Japan Aerospace Exploration Agency
15:30–15:45, TB13.05

Operation Scenario of PLANET-C: Venus Climate Orbiter (AKAT-SUKI)

Shinichiro Narita Japan Aerospace Exploration Agency
Yasuhiro Kawakatsu Japan Aerospace Exploration Agency
Toshihiro Kurii NEC TOSHIBA Space Systems, Ltd
Takeshi Yoshizawa NEC TOSHIBA Space Systems, Ltd
Nobuaki Ishii Japan Aerospace Exploration Agency
Masato Nakamura Japan Aerospace Exploration Agency

TB14 109 (VF)
System Theory and Engineering

Chair: Koichi Kobayashi
Japan Advanced Institute of Science and Technology
Chair: Shunji Tanaka Kyoto University
14:30–14:45, TB14.01

Reachability Analysis of Probabilistic Boolean Networks using Model Checking

Koichi Kobayashi

Japan Advanced Institute of Science and Technology
Kunihiko Hiraishi

Japan Advanced Institute of Science and Technology
14:45–15:00, TB14.02

Global Optimization using the Draining Method and the Simultaneous Perturbation Gradient Approximation

Takashi Okamoto Chiba University
Hironori Hirata Chiba University

15:00–15:15, TB14.03

Integrated Optimization Based on Successive Adaptive Modeling

Tomoyuki Tanaka Tokyo Metropolitan University
Kenichi Tamura Tokyo Metropolitan University
Keiichiro Yasuda Tokyo Metropolitan University

15:15–15:30, TB14.04

Improvement of the Optimization-Based Collision Avoidance Method for Reversal- and Livelock-Free Operation in Multi-Car Elevator Systems

Shunji Tanaka Kyoto University
Watanabe Masashi Kyoto University

15:30–15:45, TB14.05

A Multi-Agent Arrival and Flow Rotary Intersection Model using Safe Petri-net for Congestion Avoidance

Makoto Katoh Osaka Institute of Technology
Xue Li Kobe University

15:45–16:00, TB14.06

Control Frame of Cognition in Cognitive System Engineering

Rui Wang Northeastern University
Tianyou Chai Northeastern University
Heng Yue Northeastern University
Keiji Watanabe

TB15 110 (VF)

Disaster Response Robotics I (Organized Session)

Organizer: Hisanori Amano
National Research Institute of Fire and Disaster
Chair: Kenichi Tokuda Wakayama University
Chair: Hisanori Amano National Research Institute of Fire and Disaster

14:30–14:45, TB15.01

Forereaching Motion Generation of Mobile Robots for Pedestrian Face Identification

Kazushi Tanaka Tohoku University
Eijiro Takeuchi Tohoku University
Kazunori Ohno Tohoku University
Satoshi Tadokoro Tohoku University
Toru Yonezawa GLORY LTD.

14:45–15:00, TB15.02

Proposal of a Simulation Platform to Evaluate Rescue Robots in Active Disaster Environment

Masaru Shimizu Chukyo University
Yotsukura Shigeru Meijo University
Takahashi Tomoichi Meijo University

15:00–15:15, TB15.03

Measurement of Flexed Posture for Flexible Mono-Tread Mobile Track

Tetsuya Kinugasa Okayama University of Science
Tetsuya Akagi Okayama University of Science
Kuniaki Ishii Okayama University of Science
Yuta Otani Pacific software development
Takafumi Haji Okayama University of Science
Koji Yoshida Okayama University of Science
Hisanori Amano

National Research Institute of Fire and Disaster
Ryota Hayashi Kagoshima University
Kenichi Tokuda Wakayama University
Koichi Osuka Osaka University

15:15–15:30, TB15.04

Motion Control of Multi-Linked Stretcher Robot DUCKS

Koichi Osuka Osaka University
Shingo Isayama Kobe University

15:30–15:45, TB15.05

Design and Implementation of User Friendly Remote Controllers for Rescue Robots in Fire Sites

YoungDuk Kim DGIST
JeongHo Kang Hoya Robot Co. LTD
DukHan Sun Hoya Robot Co. LTD
Jeonil Moon Hoseo University
YoungSun Ryuh KITECH
Jinung An

Daegu Gyeongbuk Institute of Science and Technology
15:45–16:00, TB15.06

Wheel & Track Hybrid Robot Platform for Optimal Navigation in an Urban Environment

Jinwook Kim Daegu Gyeongbuk Institute of Science and Technology
Yoon-Gu Kim Daegu Gyeongbuk Institute of Science and Technology
Jeong-Hwan Kwak Daegu Gyeongbuk Institute of Science and Technology
Jinung An Daegu Gyeongbuk Institute of Science and Technology

TB17 Fu-Chuon Room (BF)

Mobile Robots I

Chair: Kazuyuki Kobayashi Hosei University
Chair: Hiroshi Mizoguchi Tokyo University of Science
14:30–14:45, TB17.01

Performance Evaluation of Contra-Rotating Drill for DIGBOT

Ryouhei Abe University of Tsukuba
Youhei Kawamura University of Tsukuba
Kazushi Kamijima HDK CORPORATION
Kazutosi Murakami UNIVANCE CORPORATION

14:45–15:00, TB17.02

A Study of Functions for Robot Returned from Parking to Store Autonomously

Ryoma Arai Tokyo University of Science

Hiroshi Takemura Tokyo University of Science
Hiroshi Mizoguchi Tokyo University of Science
15:00–15:15, TB17.03

Development of Path Planning Algorithm Using Potential Field Based on Two Fixed Angle Laser Scanners

Takuya Yamakawa Hosei University
Kazuyuki Kobayashi Hosei University
Kajiro Watanabe Hosei University
Yosuke Kurihara Seikei University

15:15–15:30, TB17.04

Experimental Verification of Fastest Guidance Control Preventing Carrying Objects from Slipping

Kosuke Okumura University of Fukui
Masanori Mukono University of Fukui
Mamoru Minami Okayama University

15:30–15:45, TB17.05

Development of a Simulation Model for Inner-Gas-Pipe Inspection Robot: SPRING

Takashi Nishihara Osaka University
Koichi Osuka Osaka University
Itaru Tamura Osaka Gas Co., Ltd.

15:45–16:00, TB17.06

Path Planning Through Local Tree Exploration with RRTs Method

Jorge Sofrony Universidad Nacional de Colombia
Edwin Francis Cardenas Universidad Nacional de Colombia
Luis Miguel Mendez Universidad Nacional de Colombia

TB18 Der-Hou Room East (BF)
Intelligent Human-Machine Systems I (Organized Session)

Organizer: Toshihiro Hiraoka Kyoto University
Chair: Toshihiro Hiraoka Kyoto University
Chair: Hironori Suzuki Nippon Institute of Technology

14:30–14:45, TB18.01

Analysis of Time Delay in User's Awareness of ACC System Mode Transitions

Yukio Horiguchi Kyoto University
Takanori Suzuki Kyoto University
Hiroaki Nakanishi Kyoto University
Tetsuo Sawaragi Kyoto University

14:45–15:00, TB18.02

Toward Inference of Driver's Lane-Change Intent under Cognitive Distraction

Huiping Zhou University of Tsukuba
Makoto Itoh University of Tsukuba
Toshiyuki Inagaki University of Tsukuba

15:00–15:15, TB18.03

Comparison Between Emotional and Objective Views to Promote Understanding of Risks for Elderly Drivers

Midori Inaba University of Electro-Communications

15:15–15:30, TB18.04

New Approach to Evaluating Macroscopic Safety of Platooned Vehicles Based on Shockwave Theory

Hironori Suzuki Nippon Institute of Technology

Kouichi Matsunaga Bestpartner Inc.
15:30–15:45, TB18.05

Behavioral Adaptation to Advanced Driver-Assistance Systems

Toshihiro Hiraoka Kyoto University
Junya Masui Kyoto University
Seimei Nishikawa Kyoto University

TB19 Der-Hou Room East (BF)
Advances in Control I

Chair: Mitsuaki Ishitobi Kumamoto University
Chair: Masanobu Koga Kyusyu Institute of Technology

14:30–14:45, TB19.01

Sampled-Data Models for Decouplable Nonlinear Multivariable Systems

Masatoshi Nishi Kumamoto University
Mitsuaki Ishitobi Kumamoto University
Liang Shan Chongqing University
Sadaaki Kunimatsu Kumamoto University

14:45–15:00, TB19.02

Complete Intervals for D-stability of Single-Parameter Polynomially-Dependent Matrices — Generalization of the Stability Feeler

Tadasuke Matsuda Toyota Technological Institute
Michihiro Kawanishi Toyota Technological Institute
Tatsuo Narikiyo Toyota Technological Institute

15:00–15:15, TB19.03

Decentralized Impulsive Control of Uncertain Large Scale Systems

Cheng Fa Cheng National Taiwan Ocean University
15:15–15:30, TB19.04

Validated Pole Assignment Method based on Verified Numerical Computation

Kentaro Yano Fukuoka Institute of Technology
Masanobu koga Kyushu Institute of Technology
Hiromasa Nakashima Kyushu Institute of Technology

15:30–15:45, TB19.05

An improved Approach to Stability Analysis of Fixed-Point Digital Control Systems under Finite Word Length Effects

Hsien-Ju Ko Asia University
15:45–16:00, TB19.06

Design of Speed Control Systems Using Digital Controllers

Huaider Pai MEC

TC01 Sky Lounge (12F)
Control Applications II

Chair: Makoto Katoh Osaka Institute of Technology
Chair: Kazuhiko Terashima Toyohashi University of Technology

16:30–16:45, TC01.01

Sloshing Suppression Control of Liquid Container Transfer with Tilting Motion Using Principal Component Analysis

Ryota Shibuya Toyohashi University of Technology
Yoshiyuki Noda Toyohashi University of Technology
Kazuhiko Terashima Toyohashi University of Technology

16:45–17:00, TC01.02

Air-Conditioning Control System using PD Control with Adjustable

Manual Reset

Yuji Yamakawa University of Tokyo
Takanori Yamazaki Oyama National College of Technology
Kamimura Kazuyuki National Institute for Environmental Studies
Kurosu Shigeru Research Instit. "Crotech"

17:00–17:15, TC01.03

Static and Dynamic Robust Parameters and PI Control Tuning of TV-MITE Model for Liquid Level in a Single Tank

Makoto Katoh Osaka Institute of Technology
17:15–17:30, TC01.04

Multistep Optimal Scheduling of Automated Guided Vehicles in a Semiconductor Fabrication

Fumihiko Kato University of Electro-Communications
Seiichi Shin University of Electro-Communications
17:30–17:45, TC01.05

Design and Control of MR Mount for Vibration Isolation

Jinsiang Shaw National Taipei University of Technology
Ray Pan National Taipei University of Technology
W. Kuo Tungnan University
G. Lin Tungnan University
17:45–18:00, TC01.06

Heat Inflow Control of Peltier Device Based on Heat Inflow Observer

Hidetaka Morimitsu Keio University
Seiichiro Katsura Keio University

TC02 North Foyer (12F) Service Engineering and Interface to Support High-Quality Life II (Organized Session)

Organizer: Sho Yokota Setsunan University
Chair: Hiroshi Hashimoto Advanced Institute of Industrial Technology
Chair: Hiroyuki Kobayashi Osaka Institute of Technology
16:30–16:45, TC02.01

Evaluation of Activity Level of Daily Life Based on Heart rate and Acceleration

Syunji Yazaki University of Electro-Communications
Toshio Matsunaga Tokyo University of Technology
16:45–17:00, TC02.02

Construction of Virtual Human Model by Using ODE — Study on Sitting Motion —

Sho Yokota Setsunan University
Hiroshi Hashimoto Advanced Institute of Industrial Technology
Yasuhiro Ohyama Tokyo University of Technology
Jin-Hua She Tokyo University of Technology
Daisuke Chugo Kwansai Gakuin University
17:00–17:15, TC02.03

Camera-based Indoor Navigation for Service Robots

Daisuke Chugo Kwansai Gakuin University
Shinya Matsushima The University of Electro-Communications
Sho Yokota Setsunan University
Kunikatsu Takase The University of Electro-Communications

17:15–17:30, TC02.04

Study of Evaluation Method for Mental Activities and Application to Intelligent Power Wheelchair

Yasunari Fujimoto Tokyo Metropolitan University
Gen Obayashi Tokyo Metropolitan University
Nobuyuki Sekine Tokyo Metropolitan University
Toru Yamaguchi Tokyo Metropolitan University

TC03 South Foyer (12F) Autonomous Decentralized Approaches for Systems Management (Organized Session)

Organizer: Haruhiko Suwa Setsunan University
Chair: Tatsushi Yamasaki Setsunan University
Chair: Kazutoshi Sakakibara Ritsumeikan University

16:30–16:45, TC03.01

Simulated Annealing Method Based on Recursive Problem Decomposition for Vehicle Routing Problems

Kazutoshi Sakakibara Ritsumeikan University
Takahiro Tsuda Ritsumeikan University
Ikuko Nishikawa Ritsumeikan University

16:45–17:00, TC03.02

Autonomous Decentralized Simulation Model of City and Urban Traffic

Takuya Matsumoto Kobe University
Hisashi Tamaki Kobe University
Tsutomu Inamoto Kobe University

17:00–17:15, TC03.03

Adaptive Supervisory Control Based on a Preference of Agents for Decentralized Discrete Event Systems

Kouji Kajiwara Setsunan University
Tatsushi Yamasaki Setsunan University

17:15–17:30, TC03.04

Management of Multimedia Data on a Distributed e-Learning System

Daisuke Yamamoto Tottori University
Kazunari Meguro Tottori University
Takao Kawamura Tottori University
Shinichi Motomura Tottori University
Toshihiko Sasama Tottori University
Kazunori Sugahara Tottori University

17:30–17:45, TC03.05

Development of User Interface Supporting Multi Web Browsers for Distributed e-Learning System

Takashi Hirata Tottori University
Kazunari Meguro Tottori University
Takao Kawamura Tottori University
Toshihiko Sasama Tottori University
Kazunori Sugahara Tottori University

17:45–18:00, TC03.06

Realization of Persistency for Meeting Scheduling System Based on Mobile Agent Technology

Takayuki Onishi Tottori University
Takao Kawamura Tottori University

Toshihiko Sasama Tottori University
Kazunori Sugahara Tottori University

TC04 Auditorium (10F)
Advanced Pattern Measurement III (Organized Session)

Organizer: Shinpei Okawa
The University of Electro-Communications

Chair: Toshiyuki Tanaka Keio University

Chair: Yoshimitsu Aoki Keio University

16:30–16:45, TC04.01

Study of Feature Extraction for Diagnosing Prostate Cancer

Yoshiteru Toki Keio University

Toshiyuki Tanaka Keio University

16:45–17:00, TC04.02

Case Classification of Pulmonary Emphysema using Shape and Distribution of Lesions

Shotaro Yoshie Keio University

Toshiyuki Tanaka Keio University

Toru Shirahata Keio University

Hiroaki Sugiura Keio University

17:00–17:15, TC04.03

Authentication System based on Computer Generated Hologram

Naoki Murakami Keio University

Toshiyuki Tanaka Keio University

17:15–17:30, TC04.04

Knowledge Simplification of Hierarchical Neural Network for Multidimensional Pattern Recognition Problems

Satoru Suzuki Tokyo University of Agriculture and Technology

Yasue Mitsukura Tokyo University of Agriculture and Technology

17:30–17:45, TC04.05

Eye Movement-Related EEG Potential Pattern Recognition for Real-Time BMI

Takuma Ito Ibaraki University

Tomoyuki Shinji Ibaraki University

Hideyasu Sumiya Ibaraki University

Mituru Baba Ibaraki University

17:45–18:00, TC04.06

Pipe Wall Thickness Inspection with Current Driven Thermal Method

Satoshi Honda Keio University

TC06 Song Bo Room (10F)
Adaptive & Learning Control III (Organized Session)

Organizer: Kenji Ikeda The University of Tokushima

Chair: Yohihiko Miyasato Institute of Statistical Mathematics

Chair: Yoshihiro Ohnishi Ehime University

16:30–16:45, TC06.01

Evolutionary Identification Using Closed-Loop Data for a Mechanical System

Kazuo Kawada Hiroshima University

Toru Yamamoto Hiroshima University

16:45–17:00, TC06.02

Logic-based Switching Control of Trains with Actuator Failures

Taro Takagi Tokai University

Masanori Takahashi Tokai University

17:00–17:15, TC06.03

Adaptive Compensation Method of Friction Forces Using Differential Estimator

Kazuya Sato Saga University

Obata Shin-ichiro Saga University

Nomura Jyun Saga University

Kazuhiro Tsuruta Kyushu Sangyo University

17:15–17:30, TC06.04

Adaptive Output Recurrent Neural Network for Overhead Crane System

Chih-Hui Chiu Yuan Ze University

Chun Hsien Lin Yuan Ze University

17:30–17:45, TC06.05

Adaptive State Feedback Control for Descriptor Systems

Kenichi Tamura Tokyo Metropolitan University

Keiichiro Yasuda Tokyo Metropolitan University

TC07 101 (VF)

Control Theoretic Approaches to Future Control Technology (Organized Session)

Organizer: Toru Asai Osaka University

Chair: Toru Asai Osaka University

Chair: Tomoaki Hashimoto Osaka University

16:30–16:45, TC07.01

A Numerical Solution Method to Receding Horizon Control for Nonlinear Diffusion Systems

Yusuke Yoshioka Osaka University

Tomoaki Hashimoto Shinshu University

Toshiyuki Ohtsuka Osaka University

16:45–17:00, TC07.02

Approach to Relocate Sampled Zeros for Feedforward Control Application

Takuya Sogo Chubu University

Masafumi Joe Chubu University

17:00–17:15, TC07.03

Synthesis of Continuous-time Linear Reset Feedback System with L_2 Stability

Atsushi Satoh Iwate University

17:15–17:30, TC07.04

Output Feedback Stabilization of Systems with Ternary Valued PWM Control Input

Toru Asai Osaka University

17:30–17:45, TC07.05

An Inverse Halftoning Algorithm Based on Super-Resolution Image Reconstruction

Yuki Minami Maizuru National College of Technology

Shun-ichi Azuma Kyoto University

Toshiharu Sugie Kyoto University

17:45–18:00, TC07.06

Super-Resolution Image Reconstruction using an Observer of a Motorized Camera Head

Satoru Onishi Nara Institute of Science and Technology
Kiminao Kogiso Nara Institute of Science and Technology

TC08 102 (VF)
Networked Sensing and Control Systems II

Chair: Takehito Azuma Utsunomiya University
Chair: Akira Kojima Tokyo Metropolitan University
16:30–16:45, TC08.01

Convergence Analysis of Consensus Problem with Communication Delays

Satoshi Maki Tokyo Metropolitan University
Akira Kojima Tokyo metropolitan University
16:45–17:00, TC08.02

A Study of RSSI Based Formation Control Algorithm for Multiple Mobile Robots

Takanori Komatsu Hosei University
Tomoyuki Ohkubo Hosei University
Kazuyuki Kobayashi Hosei University
Kajiro Watanabe Hosei University
Yosuke Kurihara Seikei University
17:00–17:15, TC08.03

Robust Feedback Stabilizability of Periodic Networked Control Systems

Cheng Fa Cheng National Taiwan Ocean University
Shuang Yu Chung National Taiwan Ocean University
17:15–17:30, TC08.04

Formation Control with Fault-Tolerance Based on Rigid Graph Theory

Takehito Azuma Utsunomiya University
Tatsuya Karube Utsunomiya University
17:30–17:45, TC08.05

Adaptive Consensus on a Class of Nonlinear Multi-Agent Dynamical Systems

Kouichi Sumizaki The University of Tokyo
Lu Liu The University of Tokyo
Shinji Hara The University of Tokyo
17:45–18:00, TC08.06

Online Leader-Following Formation Navigation with Initial Movements of Followers and Its Experimental Verification

Manabu Suzuki The University of Electro-Communications
Kazunori Sakurama The University of Electro-Communications
Kazushi Nakano The University of Electro-Communications

TC09 103 (VF)
Evolutionary Technology and its Applications II (Organized Session)

Organizer: Kazuhiro Ohkura Hiroshima University
Chair: Yukiko Orito Hiroshima University
Chair: Kazuhiro Ohkura Hiroshima University
16:30–16:45, TC09.01

Extended TSP Model as Conflicting Resource Utilizations by

Individual Optimizers

Ryota Ono Hokkaido University
Hidenori Kawamura Hokkaido University
Keiji Suzuki Hokkaido University
16:45–17:00, TC09.02

A Feasibility Study of the Intelligent Cart System

Yasushi Kambayashi Nippon Institute of Technology
Hidemi Yamachi Nippon Institute of Technology
Munehiro Takimoto Tokyo University of Science
17:00–17:15, TC09.03

Generating Stock Trading Signals Based on Matching Degree with Extracted Rules by Genetic Network Programming

Shingo Mabu Waseda University
Yuzhu Lian Waseda University
Yan Chen Waseda University
Kotaro Hirasawa Waseda University
17:15–17:30, TC09.04

Evolutionary Trend Prediction Using Plural Technical Indicators for Foreign Exchange Transaction

Daigo Kato Yokohama National University
Noriko Yata Yokohama National University
Tomoharu Nagao Yokohama National University
17:30–17:45, TC09.05

Stock Market Prediction Using Classifier System Based on Incident Pattern of Wave Template

Ryota Kato Yokohama National University
Noriko Yata Yokohama National University
Tomoharu Nagao Yokohama National University
17:45–18:00, TC09.06

Extended Information Ratio Proposal for Portfolio Optimization Based on Market Dynamics

Yukiko Orito Hiroshima University
Hisashi Yamamoto Tokyo Metropolitan University
Tomokazu Sasaki Tokyo Metropolitan University
Toru Kurazumi Tokyo Metropolitan University
Yasuhiro Tsujimura Nippon Institute of Technology
Yasushi Kambayashi Nippon Institute of Technology

TC10 104 (VF)
Challenges for Information Sharing on Industrial Network II (Organized Session)

Organizer: Tsutomu Yamada Hitachi, Ltd.
Chair: Tsutomu Yamada Hitachi, Ltd.
Chair: Yoichi Takayanagi TOSHIBA CORPORATION
16:30–16:45, TC10.01

Industrial Wireless Sensor Networks and Standardizations

Li Zheng Yamatake Corporation
16:45–17:00, TC10.02

Development of the Landslide Observation System Using ZigBee

Yuya Nakahata University of Tsukuba
Youhei Kawamura University of Tsukuba
17:00–17:15, TC10.03

Implementing Localization Scheme on ZigBee Wireless Sensor

Network

Junya Ohtsuka University of Hyogo
Teijiro Isokawa University of Hyogo
Hironobu Kawa Step One Limited
Satoshi Nakashima Step One Limited
Ayumu Saitoh University of Hyogo
Naotake Kamiura University of Hyogo
Nobuyuki Matsui University of Hyogo

17:15–17:30, TC10.04

Consideration on Vulnerability Handling for Control Systems

Miyachi Toshio JPCERT Coordination Center
Hiroki Narita JPCERT Coordination Center
Oguma Nobutaka JPCERT Coordination Center
Furuta Hirohisa JPCERT Coordination Center

17:30–17:45, TC10.05

Security Measures of Manufacture & Control System

Yuuji Umeda JEMIMA
Satoshi Kuboya JEMIMA

TC11 105 (VF) Signal Processing

Chair: Rong-Jian Chen National United University
Chair: Seiji Hata Kagawa University

16:30–16:45, TC11.01

Person Localization using TDOA of Non-speech Sound Signal based on Multiplexed CSP Analysis

Yasuhiro Teshima Tokyo Institute of Technology
Jun-ya Takayama Tokyo Institute of Technology
Shinji Ohyama Tokyo Institute of Technology
Kazuo Oshima NTT Facilities Research Institute INC.

16:45–17:00, TC11.02

Nano-level 3-D shape Measurement Method from Analysis of Interference Fringes Using RGB LED Lightings

Seiji Hata Kagawa University
Masanobu Kaneda Kagawa University
Daichi Kimura Kagawa University
Jun'ichiro Hayashi Kagawa University
Ichirou Ishimaru Kagawa University
Shigeaki Morimoto REXXAM
Masakatsu Iwamoto REXXAM
Hiroaki Kobayashi Kagawa Industrial Technology Center

17:00–17:15, TC11.03

Precise Diameter Measurement of Reinforcing Bar and Steel Pipe based on Bi-static Model using Microwave Radar

Junya Takayama Tokyo Institute of Technology
Tsubasa Yoshinaga Tokyo Institute of Technology
Shinji Ohyama Tokyo Institute of Technology
Yusuke Ohtake Tokyo Institute of Technology

17:15–17:30, TC11.04

Novel Multi-bit and Bitwise Minimum Error Replacement Technique for Watermarking and Data Hiding

Rong-Jian Chen National United University
Su-Min Hung National United University

Yu-Cheng Peng National United University
Jui-Lin Lai National United University
Shi-Jinn Horng National Taiwan University of Science and Technology

17:30–17:45, TC11.05

Spacecraft Telemetry Data Monitoring by Dimensionality Reduction Techniques

Takehisa Yairi University of Tokyo
Akihiro Yoshiki University of Tokyo
Minoru Inui University of Tokyo
Yoshinobu Kawahara Osaka University
Noboru Takata Japan Aerospace Exploration Agency

17:45–18:00, TC11.06

Frequency and Amplitude Estimation in Microwave Doppler Signal and its Application to Car Driver's Foot Motion Estimation

Norikazu Ikoma Kyushu Institute of Technology
Ryosuke Nagayama Kyushu Institute of Technology
Hiroshi Kumamoto TOTO LTD.
Nobuharu Nishiyama TOTO LTD.

TC12 107 (VF) Mechatronic Systems and Control II

Chair: Kiyoshi Ioi Kinki University
Chair: Shinya Kajikawa Tohoku Gakuin University

16:30–16:45, TC12.01

Basic Performance of a Joint Mechanism with Multi-Directional Adjustable Stiffness

Shinya Kajikawa Tohoku Gakuin University
Masashi Nasuno Tohoku Gakuin University
Kazuto Hayasaka Tohoku Gakuin University

16:45–17:00, TC12.02

Development of 2-Position 3-Port Control Valve with Self-Holding Function

Hirofumi Ueda Okayama University of Science
Tetsuya Akagi Okayama University of Science
Shujiro Dohta Okayama University of Science

17:00–17:15, TC12.03

Precise Tracking Control of Piezo Actuator Using Sliding Mode Control with Feedforward Compensation

Joo Yong Lee POSTECH
Dong Wook Lee POSTECH
Sang-Chul Won POSTECH

17:15–17:30, TC12.04

Dynamic Analysis of Wagon Caster with Shock Absorber

Koji Moriya Kinki University
Takashi Kawabuchi Kinki University
Kiyoshi Ioi Kinki University
Atsushi Suda Yuei Caster Co. Ltd.
Masahiko Yamamoto Yuei Caster Co. Ltd.

17:30–17:45, TC12.05

A Practical Approach to Detecting External Force Applied to Hydraulic Cylinder for Construction Manipulator

Mitsuhiro Kamezaki Waseda University

Hiroyasu Iwata Waseda University
 Shigeki Sugano Waseda University
 17:45–18:00, TC12.06
Modal Separation Control of Circular Cylindrical Wedge Wave Ultrasonic Motors
 Tai Ho Yu National United University
 Ching-Chung Yin National Chiao Tung University

TC13 108 (VF)
Navigation, Guidance, and Control in Aerospace Systems II (Organized Session)

Organizer: Tsutomu Ichikawa
 Japan Aerospace Exploration Agency
 Chair: Tsutomu Ichikawa Japan Aerospace Exploration Agency
 Chair: Takehiro Higuchi Yokohama National University
 16:30–16:45, TC13.01
Wavelet-based Method for Signal Acquisition in GNSS Receivers
 Chung-Liang Chang
 National Pingtung University of Science and Technology
 Ho Nien Shou Air Force Institute of Technology
 Jyh-Ching Juang National Cheng Kung University
 16:45–17:00, TC13.02

Path Tracking of UAV Using Self-Tuning PID Controller Based on Fuzzy Logic
 Pined Laohapiengsak Thammasat University
 Theerasak Sangyam Thammasat University
 Wonlop Chongcharoen Thammasat University
 Itthisek Nilkhamhang Thammasat University
 17:00–17:15, TC13.03

A Tight Path Following Algorithm of an UAS Based on PID control
 Sanghyuk Park Inha University
 Ihnseok Rhee Korea University of Technology and Education
 Chang-Kyung Ryoo Inha University
 17:15–17:30, TC13.04

Path Generation Algorithm for Intelligence, Surveillance, Reconnaissance of UAV
 Chan-Wook Lim Inha University
 Chang-Kyung Ryoo Inha University
 Keeyoung Choi Inha University
 Jung-Hee Cho Agency for Defense Development
 17:30–17:45, TC13.05

Micro-Satellite Attitude Angle Rate Estimation: Unscened Kalman Filter Approach
 Ho Nien Shou Air Force Institute of Technology
 Chen Tsung Lin National Space Organization
 Chung-Liang Chang
 National Pingtung University of Science and Technology

TC14 109 (VF)
Advances in System and Information

Chair: Setsuya Kurahashi University of Tsukuba
 Chair: Yohei Saika Wakayama National College of Technology

16:30–16:45, TC14.01
Optimizing of Support Plan for New Graduate Employment Market: Reinforcement learning

Keiko Mori University of Tsukuba
 Setsuya Kurahashi University of Tsukuba

16:45–17:00, TC14.02
A Consideration of Pan-Sharp Images by HSI Transformation Approach

Yoshihiro Mitani Ube National College of Technology
 Yoshihiko Hamamoto Yamaguchi University

17:00–17:15, TC14.03
Visualizing Similar Text Documents Based on 3D Dendrogram
 Tomohito Kinoshita Hosei University
 Tomoyuki Ohkubo Hosei University
 Kazuyuki Kobayashi Hosei University
 Kajiro Watanabe Hosei University
 Yosuke Kurihara Seikei University

17:15–17:30, TC14.04
A Memorization Network Model of Normal Environment for Anomaly Detection

Masato Takeda Yokohama National University
 Noriko Yata Yokohama National University
 Tomoharu Nagao Yokohama National University

17:30–17:45, TC14.05
Quantum Annealing via Transverse Interaction with XY-type Anisotropy

Yohei Saika Wakayama National College of Technology
 Tetsuya Kakimoto Wakayama National College of Technology
 Jun-ichi Inoue Hokkaido University

17:45–18:00, TC14.06
Japanese Language Proficiency Index for Koreans by N400
 Hisaya Tanaka Kogakuin University
 Song Chol Choi Kogakuin University

TC15 110 (VF)
Disaster Response Robotics II (Organized Session)

Organizer: Hisanori Amano
 National Research Institute of Fire and Disaster
 Chair: Tetsuya Kimura Nagaoka University of Technology
 Chair: Masaru Shimizu Chukyo University

16:30–16:45, TC15.01
Concept of a hopping sphere robot for rescue
 Kenichi Tokuda Wakayama University
 Hidenori Yagi Wakayama University
 Tetsuya Kinugasa Okayama University of Science
 Masafumi Miwa The University of Tokushima

16:45–17:00, TC15.02
Torque Transfer Characteristics of the Flexible Shafts for Movement Mechanism of a Crawler-type Rescue Robot

Ryota Hayashi Kagoshima University
 Ichiro Nakamura Kagoshima University
 Yong Yu Kagoshima University
 Hisanori Amano

National Research Institute of Fire and Disaster
Tetsuya Kinugasa Okayama University of Science
17:00–17:15, TC15.03

Development of Heavy Duty Mobile Unit for Disaster Response

Hisanori Amano
National Research Institute of Fire and Disaster
Ryutaro Morisono
Mitsubishi Electric TOKKI Systems Cooperation
Ryuichi Hodoshima
National Research Institute of Fire and Disaster
17:15–17:30, TC15.04

Development of a Search Type Rescue Robot Driven by Pneumatic Actuator

Kengo Harihara Okayama University of Science
Tetsuya Akagi Okayama University of Science
Shujiro Dohta Okayama University of Science
Feng Zhang Sanki Engineering Co., Ltd.
17:30–17:45, TC15.05

Summary of the 9th Rescue Robot Contest

Tomoharu Doi Osaka Prefectural College of Technology
Masayuki Okugawa Aichi Institute of Technology
Yoshiomi Munosawa Okayama University
Hitoshi Yamauchi Okayama Prefectural University
Seisuke Yamanaka Osaka Prefectural College of Technology
Executive committee of Rescue Robot Contest
17:45–18:00, TC15.06

RT Development for Local Area Disaster Mitigation via Local Area Human Network: A Case Study in Nagaoka Area in Japan

Tetsuya Kimura Nagaoka University of Technology

TC17 Fu-Chuon Room (BF)
Mobile Robots II

Chair: Changsoo Han Hanyang University
Chair: Tatsuo Narikiyo Toyota Technical Institute
16:30–16:45, TC17.01

Robust Adaptive Position/Force Control of Mobile Manipulators — Theory and Experiments

Tatsuo Narikiyo Toyota Technological Institute
Michihiro Kawanishi Toyota Technological Institute
Tomohiko Mizuno Toyota Technological Institute
Yasuo Hanada Toyota Technological Institute
16:45–17:00, TC17.02

Study of Locomotion Strategy of Humanoid Robot Using Whole Body

Hirofumi Niimi College of Industrial Technology
Minoru Koike College of Industrial Technology
Seiichi Takeuchi College of Industrial Technology
Noriyoshi Douhara College of Industrial Technology
17:00–17:15, TC17.03

Localization Algorithm using Virtual Label for a Mobile Robot in Indoor and Outdoor Environment

Ki-Ho Yu Pusan National University
Min Cheol Lee Pusan National University

Seok Jo Go Dong-Eui Institute of Technology
17:15–17:30, TC17.04

Path Planning of Unmanned Vehicle Using Potential Field and Lane Detection

Jun Young Baek Pusan National University
Sung Hyun Kim Busan College of Information Technology
Min Cheol Lee Pusan National University
17:30–17:45, TC17.05

Performance Comparison between Neural Network and SVM for Terrain Classification of Legged Robot

Kisung Kim Hanyang University
Kwangjin Ko Hanyang University
Wansoo Kim Hanyang University
Seungnam Yu Hanyang University
Changsoo Han Hanyang University
17:45–18:00, TC17.06

Development of the Mowing Robot of Trimmer Type

Yuki Iwano Akashi National College of Technology

TC18 Der-Hou Room East (BF)
Intelligent Human-Machine Systems II (Organized Session)

Organizer: Toshihiro Hiraoka Kyoto University
Chair: Yoshitaka Marumo Nihon University
Chair: Takahiro Wada Kagawa University
16:30–16:45, TC18.01

Braking Assistance System for Train Drivers by Indicating Predicted Stopping Position

Hiroyasu Sato Nihon University
Yoshitaka Marumo Nihon University
Hitoshi Tsunashima Nihon University
Takashi Kojima Railway Technical Research Institute
16:45–17:00, TC18.02

A Collision Risk Criterion Based on Imaginary Brakes

Yuta Inoue Nara Institute of Science and Technology
Kazushi Ikeda Nara Institute of Science and Technology
Hiroki Mima Nara Institute of Science and Technology
Tomohiro Shibata Nara Institute of Science and Technology
Naoki Fukaya DENSO CORPORATION
Kentaro Hitomi DENSO CORPORATION
Takashi Bando DENSO CORPORATION
17:00–17:15, TC18.03

Proposal of Warning Methods for Rear Obstacle Warning System Using Sensor Recognition Reliability

Shigeyoshi Tsutsumi Kagawa University
Tokihiko Akita AISIN SEIKI CO., LTD.
Takahiro Wada Kagawa University
Shun'ichi Doi Kagawa University
17:15–17:30, TC18.04

Effect of Activation Timing of Automatic Braking System on Driver Behaviors

Takahiro Wada Kagawa University
Shoji Hiraoka Kagawa University
Shigeyoshi Tsutsumi Kagawa University

Shun'ichi Doi Kagawa University
17:30–17:45, TC18.05

Seat Vibrotactile Warning Interface for Forward Vehicle Collision Avoidance

Pongsathorn Raksincharoensak
Tokyo University of Agriculture and Technology
Masato Higuchi Tokyo University of Agriculture and Technology
17:45–18:00, TC18.06

Method for Evaluating the Collision Mitigation Ratio When Using Collision Avoidance Alarm at Intersection

Keisuke Suzuki Kagawa University
Kiichi Yamada Daido University

TC19 Der-Hou Room East (BF)
Advances in Control II

Chair: Chieh-Neng Chang Kao Yuan University
Chair: Tadashi Ishihara Fukushima University
16:30–16:45, TC19.01

Design of Optimal Output Disturbance Cancellation Controllers for Non-minimum Phase Plants via Loop Transfer Recovery

Tadashi Ishihara Fukushima University
Hai-Jiao Guo Tohoku Gakuin University
16:45–17:00, TC19.02

Stability Analysis of Discrete-Time Systems with Two State Delays

Kun Feng Chen National Taiwan University
I-Kong Fong National Taiwan University
17:00–17:15, TC19.03

The Key Stability Determinants for Low-order Interval Polynomials

Jerome Chang Kao Yuan University
17:15–17:30, TC19.04

The Sufficient Condition of System Matrix to Find A Lyapunov Function

Jerome Chang Kao Yuan University
17:30–17:45, TC19.05

Design of Terminal Sliding Mode Control System for Second-Order Systems

Young-Hun Jo Korea University
Yong-Hwa Lee Korea University
Kang-Bak Park Korea University
17:45–18:00, TC19.06

Model-Reference Type Discretized PID Control for Continuous PLants

Yoshifumi Okuyama Humanitech Laboratory

Technical Program for Friday August 20, 2010

Grand Ballroom (12F)
Plenary Talk II

Chair: Yasumasa Fujisaki Kobe University
9:00–9:50
The PageRank Computation in Google, Randomized Algorithms and Consensus of Multi-Agent Systems
Roberto Tempo IEIIT-CNR, Politecnico di Torino

FA01 Sky Lounge (12F)
Robot Therapy System (Organized Session)

Organizer: Toshimitsu Hamada Tsukuba Gakuin University
Chair: Toshimitsu Hamada Tsukuba Gakuin University
Chair: Yoshihito Kagawa Takushoku University
10:20–10:35, FA01.01

Production and Evaluation of a Walking Simulator in a VR Town

Tomomi Hashimoto Saitama Institute of Technology
Yasuyuki Takakura Saitama Medical University
Toshimitsu Hamada Tsukuba Gakuin University
Toshiko Akazawa Kitasato University
10:35–10:50, FA01.02

Proposal and Trial of Robot Assisted Rehabilitation System Using Remote Controlled Robotic Pet

Eiichi Ohkubo Teikyo Junior College
Kazuhiro Miura Teikyo University of Science and Technology
Hidekazu Murata Teikyo University of Science and Technology
Toshihiro Tetsui Teikyo University of Science and Technology
Ryuhei Kimura Teikyo University of Science and Technology
Noriko Kato Tokorozawa Royal Hospital
Mitsuru Naganuma Teikyo University of Science and Technology
10:50–11:05, FA01.03

Gait Learning Method for Stable Motion Using Quadrupedal Robot

Hidekazu Suzuki Tokyo Polytechnic University
Hitoshi Nishi Fukui National College of Technology
Seiya Tsuchiya Tokyo Polytechnic University
11:05–11:20, FA01.04

Consideration of Physiological Effect of Robot Assisted Activity on Dementia Elderly by Electroencephalogram (EEG) — Estimation of Positive Effect of RAA by Neuroactivity Diagram —

Ryuhei Kimura Teikyo University of Science and Technology
Kazuhiro Miura Teikyo University of Science and Technology
Hidekazu Murata Teikyo University of Science and Technology
Akimitsu Yokoyama Teikyo University of Science and Technology
Mitsuru Naganuma Teikyo University of Science and Technology
11:20–11:35, FA01.05

The Effect of the Distance Between Human and Robot in RAA Setting

Akimitsu Yokoyama Teikyo University of Science and Technology

Megumi Hakata Teikyo University of Science and Technology

Yasuaki Kuroe Kyoto Institute of Technology
10:50–11:05, FA03.03

FA02 North Foyer (12F)
Designing the Service Engineering in Post Ubiquitous Society I (Organized Session)

Evolution strategies for biped locomotion learning using nonlinear oscillators

Takeshi Uchitane Osaka University
Toshiharu Hatanaka Osaka University
Katsuji Uosaki Fukui University of Technology

11:05–11:20, FA03.04

Simultaneous Perturbation Particle Swarm Optimization and FPGA Realization

Takahiro Yamada Kansai University
Yutaka Maeda Kansai University
Seiji Miyoshi Kansai University
Hiroomi Hikawa Kansai University

11:20–11:35, FA03.05

Multiple-Attribute Decision Making with Estimation of Preferences of Multiple Evaluators

Junichi Murata Kyushu University
Masato Saruwatari Kyushu University
Satoshi Hashikawa Kyushu University

11:35–11:50, FA03.06

Simultaneous Bayesian Inference of Motion Velocity Fields and Probabilistic Models in Successive Video-Frames Described by Spatio-Temporal MRFs

Yuya Inagaki Hokkaido University
Jun-ichi Inoue Hokkaido University

FA04 Auditorium (10F)
Process Control and Process Automation

Chair: Tetsuya Tabaru Yamatake Corporation
Chair: Masatoshi Ogawa Waseda University

10:20–10:35, FA04.01

Just-In-Time Statistical Process Control for Flexible Fault Management

Manabu Kano Kyoto University
Takeaki Sakata Kyoto University
Shinji Hasebe Kyoto University

10:35–10:50, FA04.02

An Application of Tracking Simulator to Depropanizer Process

Shin Ishimaru Yokogawa Electric Corporation
Makoto Nakaya Yokogawa Electric Corporation
Tetsuya Ohtani Yokogawa Electric Corporation

10:50–11:05, FA04.03

Long-term Prediction of Industrial Furnace by Extended Sequential Prediction Method of LOM

Masatoshi Ogawa Waseda University
Yichun Yeh Waseda University
Syou Kawanari Waseda University
Harutoshi Ogai Waseda University

11:05–11:20, FA04.04

An Application of Nonlinear Model Predictive Control Using C/GMRES Method to a pH Neutralization Process

Masahiro Takekawa Yokogawa Electric Corporation

Organizer: Sakae Yamamoto Tokyo University of Science
Chair: Hirohiko Mori Tokyo City University
Chair: Sakae Yamamoto Tokyo University of Science
10:20–10:35, FA02.01

Visualization in Service Sciences

Hiroyuki Miki Oki Electric Ind. Co., Ltd.
Naotune Hosono Oki Consulting Solutions Co., Ltd.
Sakae Yamamoto Tokyo University of Science

10:35–10:50, FA02.02

Effectiveness of Introducing Human-Centered Design Process

Naotake Hirasawa Otaru University of Commerce
Kiko Yamada-Kawai Otaru University of Commerce
Hideaki Kasai Otaru University of Commerce
Shinya Ogata U'eyes Design Inc.

10:50–11:05, FA02.03

Privacy Protection against Ubiquitous Marketing

Yumi Asahi Tokyo University of Science

11:05–11:20, FA02.04

Implications of Envisioning Citizen-centered Administrative Services

Kiko Yamada-Kawai Otaru University of Commerce
Naotake Hirasawa Otaru University of Commerce
Hidemi Fukada Otaru University of Commerce
Shou Ohtsu Otaru University of Commerce

11:20–11:35, FA02.05

A Study on Color Conversion for the Anomalous Trichromat to Identify Color

Makoto Oka Tokyo City University
Naoki Ozawa Keio University
Hirohiko Mori Tokyo City University
Akito Sakurai Keio University

FA03 South Foyer (12F)
Computational Intelligence and Its Applications I (Organized Session)

Organizer: Eitaro Aiyoshi Keio University
Chair: Toshiharu Hatanaka Osaka University
Chair: Yoshihiro Mori Kyoto Institute of Technology
10:20–10:35, FA03.01

Dynamic Associative Memory by Using Chaos of a Simple Associative Memory Model with Euler's Finite Difference Scheme

Kazuaki Masuda Kanagawa University
Eitaro Aiyoshi Keio University

10:35–10:50, FA03.02

Gene Expression Pattern Based Controller Design for Gene Regulatory Networks

Yoshihiro Mori Kyoto Institute of Technology

Jun Aoki Yokogawa Electric Corporation
 Makoto Nakaya Yokogawa Electric Corporation
 Tetsuya Ohtani Yokogawa Electric Corporation
 Toshiyuki Ohtsuka Osaka University
 11:20–11:35, FA04.05

A Process Simulator Based on Hybrid Model of Physical Model and Just-In-Time Model

Akio Nakabayashi Yokogawa Electric Corporation
 Makoto Nakaya Yokogawa Electric Corporation
 Tetsuya Ohtani Yokogawa Electric Corporation
 Dong Chen Yokogawa Beijing Development Center
 Dong Wang Yokogawa Beijing Development Center
 Xinchun Li Yokogawa Beijing Development Center

11:35–11:50, FA04.06

Diagnosis of Impulse Line Blockage by Frequency Count Approach

Tetsuya Tabaru Yamatake Corporation
 Naoyuki Aota Yamatake Corporation

FA05 Chang Chin Room (10F)
Vision Systems I

Chair: Chin-Sheng Chen National Taipei University of Technology

Chair: Joo Kooi Tan Kyushu Institute of Technology
 10:20–10:35, FA05.01

Viewpoint-oriented Human Activity Recognition in a Cluttered Outdoor Environment

S. M. Ashik Eftakhar Kyushu Institute of Technology
 Joo Kooi Tan Kyushu Institute of Technology
 Hyongseop Kim Kyushu Institute of Technology
 Seiji Ishikawa Kyushu Institute of Technology

10:35–10:50, FA05.02

Human Motion Recognition Using Directional Motion History Images

Makoto Murakami Kyusyu Insutitute of Technology
 Joo Kooi Tan Kyusyu Insutitute of Technology
 Hyoungseop Kim Kyusyu Insutitute of Technology
 Seiji Ishikawa Kyusyu Insutitute of Technology

10:50–11:05, FA05.03

Three-dimensional Scene Reconstruction Using Stereo Camera and Laser Range Finder

Kota Saito Yokohama National University
 Noriko Yata Yokohama National University
 Tomoharu Nagao Yokohama National University

11:05–11:20, FA05.04

On Detecting a Human Body Direction Using an Image Information

Yuuki Nakashima Kyushu Institute of Technology
 Joo Kooi Tan Kyushu Institute of Technology
 Seiji Ishikawa Kyushu Institute of Technology
 Takashi Morie Kyushu Institute of Technology

11:20–11:35, FA05.05

Fast Object recognition based on Corner Geometric Relationship

Chin Sheng Chen National Taipei University of Technology

Yu Hung Ku National Taipei University of Technology
 Shun-Hung Tsai National Taipei University of Technology
 11:35–11:50, FA05.06

A Method of Object Tracking Based on Particle Filter and Optical Flow to Avoid Degeneration Problem

Takahiro Kodama Kumamoto University
 Teruo Yamaguchi Kumamoto University
 Hiroshi Harada Kumamoto University

FA06 Song Bo Room (10F)
Healthcare and Welfare I

Chair: Taisuke Sakaki Kyushu Sangyo University
 Chair: Seiji Nishifuji Yamaguchi University

10:20–10:35, FA06.01

Robotic Stretcher for SMA Patient

Sakaki Taisuke Kyushu Sangyo University
 Takayuki Iribe Kyushu Sangyo University
 Kuniharu Ushijima Kyushu Sangyo University
 Kanta Aoki Kyushu Sangyo University
 Mihoko Sakuragi Kitakyushu City Technical Aid Center
 Keiichi Miyanaga Disabled Citizens' Welfare Center of Kitakyushu City

10:35–10:50, FA06.02

Proposal of Non-restrictive Sleep Assessment Method for Children Using Video Images

Shima Okada Ritsumeikan University
 Shinya Furushima Ritsumeikan University
 Naruhiro Shiozawa Ritsumeikan University
 Masaaki Makikawa Ritsumeikan University

10:50–11:05, FA06.03

Estimation of Feeling Based on EEG by Using NN and k-means Algorithm for Massage System

Tatsuya Teramae Tottori University
 Daisuke Kushida Tottori University
 Fumiaki Takemori Tottori University
 Akira Kitamura Tottori University

11:05–11:20, FA06.04

Effect of Acoustic Stimuli and Mental Task on Alpha, Beta and Gamma Rhythms in Brain Wave

Seiji Nishifuji Yamaguchi University
 Masahiro Sato Yamaguchi University
 Daisuke Maino Yamaguchi University
 Shogo Tanaka Yamaguchi University

11:20–11:35, FA06.05

Noncontact Measurement of Sleep Depth by Using Pressure Sensors

Yuji Shimada Hosei University
 Kajiro Watanabe Hosei University
 Yosuke Kurihara Hosei University
 Kazuyuki Kobayashi Hosei University

11:35–11:50, FA06.06

Noninvasive Biosignal Measurement of a Subject in Bed Using Ceramic Sensors

Yuya Kida
Noriko Yata
Tomoharu Nagao
11:20–11:35, FA09.05

Yokohama National University
Yokohama National University
Yokohama National University

Down-hill Simplex Method Based Differential Evolution

Daichi Kamiyama
Kenichi Tamura
Keiichiro Yasuda
11:35–11:50, FA09.06

Tokyo Metropolitan University
Tokyo Metropolitan University
Tokyo Metropolitan University

A Nature-Inspired Evolutionary Algorithm Based on Spiral Movements

Gang-Gyoo Jin
Thanh-Do Tran

Korea Maritime University
Korea Maritime University

FA10 104 (VF)
FLUCOME-J (Organized Session)

Organizer: Toshiharu Kagawa
Chair: Xin Li
Chair: Tatsuya Funaki
10:20–10:35, FA10.01

Tokyo Institute of Technology
Tokyo Institute of Technology
AIST

Estimation of Fluid Transients in a Pipe using Kalman Filter based on Optimized Finite Element Model

Akira Ozawa
Bingzhao Gao
Kazushi Sanada
10:35–10:50, FA10.02

Yokohama National University
Yokohama National University
Yokohama National University

Analysis of levitation using porous media

Wei Zhong
Guoliang Tao
Xin Li
Kenji Kawashima
Toshiharu Kagawa
10:50–11:05, FA10.03

Tokyo Institute of Technology
Zhejiang University
Tokyo Institute of Technology
Tokyo Institute of Technology
Tokyo Institute of Technology

Transient Pressure and Flow Rate Measurement of Pneumatic Power Supply Line in Shinkansen

Kenji Fujino
Kouji Taniguchi
Nobuaki Yamamoto
Chongho Youn
Toshiharu Kagawa
11:05–11:20, FA10.04

EAST JAPAN RAILWAY COMPANY
Tokyu Car Corporation
TOKYO METER CO, LTD.
Tokyo Institute of Technology
Tokyo Institute of Technology

Analysis of Pneumatic Pipeline Using CCUP (CIP-Combined and Unified Procedure) Method

Mitsuhiro Nakao
Kenji Kawashima
Toshiharu Kagawa
11:20–11:35, FA10.05

Tokyo Institute of Technology
Tokyo Institute of Technology
Tokyo Institute of Technology

Study on Flow Rate Control System of Oscillatory Gas Flow Generator

Tatsuya Funaki
11:35–11:50, FA10.06

AIST

Diagnosis of Aerated Flow at Water Line with Coriolis Flowmeter Using Hilbert Transform

Akira Uehara
Takumi Hashizume
Tetsuya Wakui
Akinori Yoshino
Akimichi Kadoguchi
Nobuo Miyaji

Waseda University
Waseda University
Osaka Prefecture University
Yokogawa Electric Corporation
Yokogawa Electric Corporation
Yokogawa Electric Corporation

FA11 105 (VF)
Analytical Measurement

Chair: Yuichi Chida
Chair: Daisuke Chugo
10:20–10:35, FA11.01

Shinshu University
Kwansei Gakuin University

On-Line Distinction Methods of Human Falling Motions Based on Machine Learning

Shunichi Aoyagi
Yuichi Chida
Hidetoshi Kobayashi
Shunichi Yoshimatsu
Masahiro Oya
10:35–10:50, FA11.02

Shinshu University
Shinshu University
Nishizawa Electric Meters Manufacturing CO.
Chikuma Central Hospital.
Chikuma Central Hospital.

Error Analysis of FST for Accuracy Improvement

Kazuki Maeda
Koichi Osuka
10:50–11:05, FA11.03

Osaka University
Osaka University

Detection of a Person Hiding in an Automobile by Using Human-Generated Microvibrations

Kyousuke Imamura
Kajiro Watanabe
Kazuyuki Kobayashi
Yosuke Kurihara
11:05–11:20, FA11.04

Hosei University
Hosei University
Hosei University
Seikei University

A Single-shot Laser Rangefinder with Quadrature Reference Signals Sampling

Masahiro Ohishi
Fumio Ohtomo
Yosikatsu Tokuda
Chikao Nagasawa
11:20–11:35, FA11.05

Topcon Corporation
Topcon Corporation
Topcon Corporation
Tokyo Metropolitan University

The Analysis of Upper Arm Movement When a Human Lift Up a Dummy Doll

Yuki Sakaida
Daisuke Chugo
Ryojun Ikeura
11:35–11:50, FA11.06

RIKEN
Kwansei Gakuin University
Mie University

High-accuracy Shape Measurement by Whole-space Tabulation Board Applied to Electronic Packaging

Akihiro Masaya
Motoharu Fujigaki
Ryosuke Murakami
Yoshiharu Morimoto

Wakayama University
Wakayama University
Wakayama University
Moire Institute

FA12 107 (VF)
System Design based on "Further Benefit of a Kind of Inconvenience" I (Organized Session)

Organizer: Hiroshi Kawakami Kyoto University
Chair: Hiroshi Kawakami Kyoto University
Chair: Hidetsugu Suto Muroran Institute of Technology
10:20–10:35, FA12.01

A Vowel and Semivowel Synthesizer for Prompt and Expressive Communication

Hisataka Yuasa Kyoto University
Hiroshi Kawakami Kyoto University
Osamu Katai Kyoto University

10:35–10:50, FA12.02

Evolutionary Algorithms for Gesture Segmentation

Hisashi Handa Okayama University
Hiroshi Kawakami Kyoto University

10:50–11:05, FA12.03

Multi-agent Simulation on Relationship Between Individuals' Travel Behavior and Residential Choice Behavior

Tadahiro Taniguchi Ritsumeikan University
Yusuke Takahashi Ritsumeikan University
Ikuko Nishikawa Ritsumeikan University

11:05–11:20, FA12.04

A System Design Based on Safety Benefit of Affording Inconvenience Affairs

Kohei Okabe JNIOOSH
Shigeo Umezaki JNIOOSH

11:20–11:35, FA12.05

Degrading Navigation System as an Explanatory Example of "Benefits of Inconvenience"

Hiroyuki Kitagawa Kyoto University
Hiroshi Kawakami Kyoto University
Osamu Katai Kyoto University

FA13 108 (VF)
Identification and Estimation

Chair: Michihiko Kawanishi Toyota Institute of Technology
Chair: Yukinori Nakamura Tokyo University of Agriculture and Technology

10:20–10:35, FA13.01

Adaptive Estimation of Firing Patterns of Hindmarsh-Rose Neurons and Synchronization Detection with Instantaneous Lyapunov Exponents

Ryuta Ito Oita University
Yusuke Totoki Oita University
Haruo Suemitsu Oita University
Takami Matsuo Oita University

10:35–10:50, FA13.02

Gain Switching Observer for Compensating Outliers — Experimental Validation with Non-contact Sensor —

Yukinori Nakamura Tokyo University of Agriculture and Technology

Kenji Sugimoto Nara Institute of Science and Technology
Kensuke Nagai Mitsubishi Heavy Industries, Ltd.
Shinji Wakui Tokyo University of Agriculture and Technology

10:50–11:05, FA13.03

Zero Velocity Detection for Inertial Sensor-Based Personal Navigation Systems

Sang Kyeong Park University of Ulsan
Young Soo Suh University of Ulsan
Hee Jun Kang University of Ulsan
Young Shick Ro University of Ulsan

11:05–11:20, FA13.04

Comparison of Estimation Performance Between Single and Multiple Disturbance Observers for LTI Systems

Takahiko Ono Hiroshima City University
Tadashi Ishihara Fukushima University

11:20–11:35, FA13.05

Multi-Class System based on SVM for Real-Time Gas Mixture Classification

Guk Hee Kim Kyungpook National University
Young-Wung Kim Kyungpook National University
Sang-Jin Lee Kyungpook National University
Gi Joon Jeon Kyungpook National University

11:35–11:50, FA13.06

Design of a Digital Frequency Discriminator using Least Squares based Phase Calibration

Jin Oh Park Hanyang University
Jae Beom Seo Hanyang University
Jung Hee Kim Hanyang University
Sang Won Nam Hanyang University

FA14 109 (VF)
Application of Actuator and Sensor in Intelligent Technology (Organized Session)

Organizer: Mi-Ching Tsai National Cheng Kung University
Chair: Mi-Ching Tsai National Cheng Kung University
Chair: Tay-Sheng Jeng National Cheng Kung University

10:20–10:35, FA14.01

Development of Mobile Robot for Intelligent Living Space

Mi-Ching Tsai National Cheng-Kung University
Wu-Sung Yao National Cheng-Kung University
Shih-Wei Hsiao National Cheng-Kung University
Lien-Kai Chang National Cheng-Kung University

10:35–10:50, FA14.02

Analysis of High Efficiency Piezoelectric Floor on Intelligent Buildings

Tsung-Tsi Wu National Cheng-Kung University
Sheng-He Wang National Cheng-Kung University
Wu-Sung Yao National Cheng-Kung University
Mi-Ching Tsai National Cheng-Kung University

10:50–11:05, FA14.03

IR Indoor Localization and Wireless Transmission for Motion Control in Smart Building Applications based on Wiimote Technology

Po-Wei Chen National Cheng Kung University

Kuang-Shun Ou National Cheng Kung University
Kuo-Shen Chen National Cheng Kung University
11:05–11:20, FA14.04

Recurrent Fuzzy Neural Network Controller For Linear Ultrasonic Motor

Tien-Chi Chen Kun-Shan University
Tsai-Jiun Ren Kun-Shan University
Pon-Loon Chen National Chen-Kung University
Yi-Wei Lou Kun-Shan University

11:20–11:35, FA14.05

A Robotic and Kinetic Design for Interactive Architecture

Taysheng Jeng National Cheng Kung University
Cheng-An Pan National Cheng Kung University

FA15 110 (VF)
Robot Walking

Chair: Akinori Sekiguchi Tokyo University of Technology
Chair: Tung-Yung Huang Southern Taiwan University

10:20–10:35, FA15.01

Gait Generation of Compass-type Biped Robot via Angle Control of Hip Joint

Hiroumi Takai Nara Institute of Science and Technology
Hisakazu Nakamura Nara Institute of Science and Technology
Nami Nakamura Nara Institute of Science and Technology
Hirokazu Nishitani Nara Institute of Science and Technology

10:35–10:50, FA15.02

Gait and Path Planning for MOS-2009 Humanoid Soccer Robot

Shunan Ren Harbin Institute of Technology
Jinjiao Xie Harbin Institute of Technology

10:50–11:05, FA15.03

A Prototype Foot Shape for Human-like Walk of Humanoid Robot

Akinori Sekiguchi Tokyo University of Technology
Yuichi Tsumaki Yamagata University

11:05–11:20, FA15.04

Global Stability Analysis for Plane Limit Cycle Walking Models with Feet and Actuation

Yonggwon Jeon KAIST
Youn-sik Park KAIST
Youngjin Park KAIST

11:20–11:35, FA15.05

Walk Control of a Four-legged Machine

Akira Ono Hosei University
Kajiro Watanabe Hosei University
Kazuyuki Kobayashi Hosei University
Yosuke Kurihara Hosei University

11:35–11:50, FA15.06

Gait Control of a Biped Robot Using an Exact Limit Cycle Trajectory and the Backstepping Method

Tung-Yung Huang Southern Taiwan University
Ssu-Hsien Wu Southern Taiwan University
Huu Khoa Tran Southern Taiwan University

FA16 West Gallery (VF)
Interactive Session II

10:20–11:50, FA16.01

Non-invasive Measurement of Blood Glucose of Diabetic Based on IR Spectroscopy

Shouhei Koyama Shinshu University
Hiroaki Ishizawa Shinshu University
Yuki Miyauchi Shinshu University
Takuro Horiguchi Shinshu University

10:20–11:50, FA16.02

Basis Examination for Development of Noninvasive Blood Glucose Measuring Instrument by Near-Infrared Confocal Optical System

Yuki Miyauchi Shinshu University
Takuro Horiguchi Shinshu University
Hiroaki Ishizawa Shinshu University
Shin-ichirou Tezuka Yokogawa Electric Corporation
Hitoshi Hara Yokogawa Electric Corporation

10:20–11:50, FA16.03

Prompt Quantitative Analysis of Fiber Mixtures Based on Infrared Absorption Features

Shota Tokutake Shinshu University
Tomomi Dozono Shinshu University
Hiroaki Ishizawa Shinshu University
Shouhei Koyama Shinshu University
Takashi Miki

Japan Textile Products Quality and Technology Center

10:20–11:50, FA16.04

Recognition of Breathing Route During Snoring for Simple Monitoring of Sleep Apnea

Tsuyoshi Mikami Tomakomai College of Technology
Yohichiro Kojima Tomakomai College of Technology
Masahito Yamamoto Hokkaido University
Masashi Furukawa Hokkaido University

10:20–11:50, FA16.05

Development of Magnetic Field Sensor System for Lateral Position Estimation on Power Supplying Road

Sunjong Lee KAIST
Choi Youjun KAIST
Jinkyu Kim KAIST

10:20–11:50, FA16.06

3-dimensional Real-time BSS-microphone with Spatio-temporal Gradient Analysis

Kenbu Teramoto Saga University
Shota Inoue Saga University
Takanori Yokowo Saga University

10:20–11:50, FA16.07

Holonic MAXCS and its Application to Hot Strip Roller Scheduling

Elias Mohammad Abu Hasnat Tokyo Institute of Technology
Takashi Yamada Tokyo Institute of Technology
Takao Terano Tokyo Institute of Technology

10:20–11:50, FA16.08

Trajectory Tracking Control of the Four-Wheeled Vehicle according

to Speed Change

Misawa Kasahara

Tokyo Metropolitan College of Industrial echnology

Yasuchika Mori

Tokyo Metropolitan University

10:20–11:50, FA16.09

On Partial State Setting for the Improvement of Transient Response: Experimental Evaluation with an Inverted Pendulum

Shintarou Mochizuki

Tokyo Metropolitan University

Akira Kojima

Tokyo Metropolitan University

10:20–11:50, FA16.10

A New Parametrization of A Class of Causal Stabilizing Controllers

Kazuyoshi Mori

The University of Aizu

10:20–11:50, FA16.11

A Multivariable Adaptive Control Strategy for a Recycled Depollution Bioprocess

Emil Petre

University of Craiova

Dan Selisteanu

University of Craiova

Dorin Sendrescu

University of Craiova

10:20–11:50, FA16.12

Bifurcation Analysis of Time-Delayed Parabolic Heat-Transfer with 2D Transfer Function

Boe-Shong Hong

National Chung Cheng University

Po-Jen Su

National Cheng Kung University

Chia-Yu Chou

National Chung Cheng University

Chen-I Hung

National Cheng Kung University

10:20–11:50, FA16.13

Task Execution of a Wheelchair Mounted Robotic Arm Incorporated with Active Compliance Control

Wei Wang

Waseda University

Yuuki Nishi

Waseda University

Shigeki Sugano

Waseda University

10:20–11:50, FA16.14

Robustness of Pole Assignment of an Interval Polynomial Using Like $\tilde{\lambda}$ -Degree Feedback Gain Based on the Kharitonov Theorem

Bin Yih Juang St. John's University/National Taiwan University

10:20–11:50, FA16.15

Variational Calculation for Optimal Feedback Synthesis

Teturo Itami

Hiroshima International University

10:20–11:50, FA16.16

Parametrization of All Three Impulse Zero Vibration Input Shapers

Milos Schlegel

University of West Bohemia in Pilsen

Lukas Blaha

University of West Bohemia in Pilsen

Chi-Sheng Tsai

Chienkuo Technology University

10:20–11:50, FA16.17

ILQ Servo Design Method Incorporating Min-Max Type Optimal Observer

Sadaaki Kunimatsu

Kumamoto University

Kosuke Tateishi

Kumamoto University

Takehiro Araki

Kumamoto University

Makoto Kumon

Kumamoto University

Mitsuaki Ishitobi

Kumamoto University

10:20–11:50, FA16.18

An Identification Method of Generalized Electromechanical Coupling Coefficient with Compact Structure and Simple Procedure

Yoshiki Sugawara

Aoyama Gakuin University

Takeshi Baba

Aoyama Gakuin University

Nobuyuki Kobayashi

Aoyama Gakuin University

10:20–11:50, FA16.19

YUV Luma/Chroma Quantization and Sparse Correspondence for Real Time Video Stereo Matching

Kunio Takaya

University of Saskatchewan

10:20–11:50, FA16.20

Object Identification by Hough Data Verification

Kazuki Ueno

Kagawa University

Jun'ichi Yamaguchi

Kagawa University

10:20–11:50, FA16.21

A New Collision-free Path Planning for a Shape-shifting Robot

Tonglin Liu

Chinese Academy of Sciences

Chengdong Wu

Shenyang Institute of Automation

Bin Li

Shenyang Institute of Automation

Minghui Wang

Shenyang Institute of Automation

10:20–11:50, FA16.22

Development of Cellular Phone Based JAUS-Compliant Unmanned System Controller

Kenji Sawada

Hosei University

Kazuyuki Kobayashi

Hosei University

Kajiro Watanabe

Hosei University

Tomoyuki Ohkubo

Hosei University

Yosuke Kurihara

Seikei University

10:20–11:50, FA16.23

Development of a Generic Procedure Model for the Enterprise Resource Planning Implementation in Small and Medium Enterprises

Kuo-En Fu

Diwan University

10:20–11:50, FA16.24

Design of Microprocessor-based Communication Interface and Local-loop Control System for Intelligent Humanoid Robot

Hsiung-Cheng Lin

National Chin-Yi University of Technology

G. S. Huang

National Chin-Yi University of Technology

C. K. Tung

National Chin-Yi University of Technology

C. H. Chen

Chienkuo Technology University

L. Y. Liu

Chienkuo Technology University

FA17 Fu-Chuon Room (BF)
Motion/Function Control in Biological and Mechanical Systems I (Organized Session)

Organizer: Masato Ishikawa

Osaka University

Chair: Masato Ishikawa

Osaka University

Chair: Satoru Sakai

Shinshu University

10:20–10:35, FA17.01

Experimental Analysis of 3D Passive Dynamic Walking

Tetsuya Kinugasa

Okayama University of Science

Tetsuya Akiyama

Okayama University of Science

Muhammad Atif Jauhari Bin Idris

Okayama University of Science

Koji Yoshida

Okayama University of Science

Masatsugu Iribe

Osaka Electro-Communication University

10:35–10:50, FA17.02

Shuo-Suei Hung Buddhist Xindian Tzu Chi General Hospital
15:00–15:15, FB01.03

Skill Learning for Assistive Robotics

Hsien-I Lin

National Taipei University of Science and Technology

15:15–15:30, FB01.04

Human Gait Estimation Using a Reduced Number of Accelerometers

Jwu-Sheng Hu

National Chiao Tung University

Sun Kuan-Chun

National Chiao Tung University

15:30–15:45, FB01.05

Concurrent Multiple Cameras Calibration and Robot Localization from Visual and 3D Inertial Measurements

Hsiang-Wen Hsieh

Industrial Technology Research Institute

Chin-Chia Wu

National Chiao Tung University

Hung-Hsiu Yu

Industrial Technology Research Institute

Jwu-Sheng Hu

National Chiao Tung University

15:45–16:00, FB01.06

Mobile Robot Loop Closing Using Monocular Vision SLAM

Kai-Tai Song

National Chiao-Tung University

Li-Deh Yuan

National Chiao Tung University

FB02

North Foyer (12F)

Designing the Service Engineering in Post Ubiquitous Society II (Organized Session)

Organizer: Sakae Yamamoto

Tokyo University of Science

Chair: Sakae Yamamoto

Tokyo University of Science

Chair: Hirohiko Mori

Tokyo City University

14:30–14:45, FB02.01

Universal Communication Service for Inclusive Use

Hosono Naotsune

Oki Consulting Solutions Co., Ltd.

Hirimitsu Inoue Chiba Prefectural University of Health Sciences

Miki Hiroyuki

Oki Electric Ind. Co., Ltd.

Michio Suzuki

AAJD

Yuji Nagashima

Kogakuin University

Yutaka Tomita

Keio University

14:45–15:00, FB02.02

Distributed Autonomous System for Victims of The Earthquake

Yuichi Takahashi

Tokyo University of Science

Daiji Kobayashi Chitose Institute of Science and Technology

Sakae Yamamoto

Tokyo University of Science

15:00–15:15, FB02.03

Deployment of Remote-control Slit Lamp Microscopes and its Effect on Local Medical Service

Kentaro Go

University of Yamanashi

Kenji Kashiwagi

University of Yamanashi

Naohiko Tanabe

University of Yamanashi

15:15–15:30, FB02.04

A Study on Selection Ability in the 3D Space by the Finger

Ryuta Yamada

Tokyo City University

Hidetaka Kuriwa

Tokyo City University

Makoto Oka

Tokyo City University

Hirohiko Mori

Tokyo City University

FB03

South Foyer (12F)

Computational Intelligence and Its Applications II (Organized Session)

Organizer: Eitaro Aiyoshi

Keio University

Chair: Keigo Watanabe

Okayama University

Chair: Eitaro Aiyoshi

Keio University

14:30–14:45, FB03.01

Acquisition of Deterministic Exploration and Purposive Memory through Reinforcement Learning with a Recurrent Neural Network

Katsunari Shibata

Oita University

Kenta Goto

Oita University

14:45–15:00, FB03.02

Acquisition of Active Perception and Recognition through Actor-Q Learning Using a Movable Camera

Ahmad Afif Mohd Faudzi

Oita University

Katsunari Shibata

Oita University

15:00–15:15, FB03.03

Intelligent Chaos Fish-Catching Based on Neural-Network-Differential-Equation

Ryohei Endo

University of Fukui

Jun Hirao

University of Fukui

Mamoru Minami

Okayama University

15:15–15:30, FB03.04

Attentive and Corrective Feedback for Adapting Robot's Perception on Fuzzy Linguistic Information

Kiyotaka Izumi

Saga University

Buddhika Jayasekara

Saga University

Keigo Watanabe

Okayama University

Kazuo Kiguchi

Saga University

15:30–15:45, FB03.05

Analysis of Various Interestingness Measures in Classification Rule Mining for Traffic Prediction

Xianneng Li

Waseda University

Shingo Mabu

Waseda University

Huiyu Zhou

Waseda University

Kaoru Shimada

Waseda University

Kotaro Hirasawa

Waseda University

FB04

Auditorium (10F)

Panel Discussion: Glocal Control

14:30–16:00

Panelist: Graham Goodwin

University of Newcastle

Panelist: Roberto Tempo

IEIIT-CNR, Politecnico di Torino

Panelist: Koichiro Deguchi

Tohoku University

Panelist: Keiko Takahashi

JAMSTEC

Panelist: Shinji Hara

The University of Tokyo

FB05

Chang Chin Room (10F)

Vision Systems II

Chair: Satoru Goto

Saga University

Chair: Kazunori Sakurama

University of Electro-Communications
14:30–14:45, FB05.01

Teleoperation System of Robot Arms Combined with Remote Control and Visual Servo Control

Satoru Goto Saga University
Takuya Naka Saga University
Yoshitaka Matsuda Saga University
Naruto Egashira Kurume National College of Technology

14:45–15:00, FB05.02

A Quantitative Evaluation of Robust Detecting and Tracking Methods under Illumination Changes Using Color Stereo Camera

Yuta Kimura Tokyo University of Science
Hiroshi Takemura Tokyo University of Science
Hiroshi Mizoguchi Tokyo University of Science

15:00–15:15, FB05.03

Robust Tracking Method by MeanShift using Spatiograms

Kazuki Tada Tokyo University of Science
Hiroshi Takemura Tokyo University of Science
Hiroshi Mizoguchi Tokyo University of Science

15:15–15:30, FB05.04

Map Building by 3D Map Matching

Tetsuya Ishimaru University of Fukui
Kanji Tanaka University of Fukui
Kenichi Saeki University of Fukui
Takehiro Daitou University of Fukui

15:30–15:45, FB05.05

Robot Self-Localization Using Simulated Experience

Tomomi Nagasaka University of Fukui
Kanji Tanaka University of Fukui
Tetsuya Ishimaru University of Fukui
Ikuyo Uesaka University of Fukui

15:45–16:00, FB05.06

The Robot Visual Servoing Control Systems with Double Cameras for the Grasping Task

Suolin Duan Changzhou University
Lanping Chen Changzhou University
Guirong Lu Changzhou University
Zhenhua Ma Changzhou University
Lanping Chen Shanghai Jiaotong University

Takanori Miyoshi Toyohashi University of Technology
Kazuhiko Terashima Toyohashi University of Technology

15:00–15:15, FB06.03

Modeling and Control on Passenger Posture Behavior Considering Seat Angle of Electrical Wheelchair

Masaya Yamada Toyohashi University of Technology
Yoshiyuki Noda Toyohashi University of Technology
Takanori Miyoshi Toyohashi University of Technology
Kazuhiko Terashima Toyohashi University of Technology

15:15–15:30, FB06.04

Movement Analysis of Power-Assistive Machinery with High Strength-Amplification

Tomoyuki Ishida Osaka University
Tsuyoshi Kiyama Osaka University
Koichi Osuka Osaka University
Go Shirogauchi Activelink Co.,Ltd.
Reishi Oya Activelink Co.,Ltd.
Hiromichi Fujimoto Activelink Co.,Ltd.

15:30–15:45, FB06.05

A Dynamic Model of Power-Assistive Machinery with High Strength-Amplification

Atsushi Okubo Osaka University
Tsuyoshi Kiyama Osaka University
Koichi Osuka Osaka University
Go Shirogauchi Activelink Co., Ltd.
Reishi Oya Activelink Co., Ltd.
Hiromichi Fujimoto Activelink Co., Ltd.

15:45–16:00, FB06.06

An Electrical Prehension Orthosis Operated through Activity of Mastication Muscle

Shunnji Moromugi Nagasaki University
T. Ishimatsu Nagasaki University
Hideki Matsui Nagasaki University
Tsunaki Ikeda Nagasaki University
Masao Mizuta Nagasaki University
Takayoshi Koga Nagasaki University
Tomoaki Tateishi Nagasaki University
Takeshi Saoyama Nagasaki University
T. Takashima Nagasaki University

FB06

Song Bo Room (10F)

Healthcare and Welfare II

Chair: Kentaro Hirata Nara Institute of Science and Technology
Chair: Takakazu Ishimatsu Nagasaki University

14:30–14:45, FB06.01

Energy-Efficient Power Assist Control for Periodic Motions

Kazuyoshi Hatada Nara Institute of Science and Technology
Kentaro Hirata Nara Institute of Science and Technology

14:45–15:00, FB06.02

Sway Suppression Control to Passenger with Muscle Weakness on Electrical Wheelchair

Koumei Yamashita Toyohashi University of Technology
Yoshiyuki Noda Toyohashi University of Technology

FB07

101 (VF)

Advances in Nonlinear Systems Analysis and Controller Design (Organized Session)

Organizer: Hisakazu Nakamura
Nara Institute of Science and Technology

Chair: Hisakazu Nakamura
Nara Institute of Science and Technology

Chair: Noboru Sakamoto Nagoya University

14:30–14:45, FB07.01

On Negative Definiteness of Derivatives of Lyapunov Functions

Hisakazu Nakamura Nara Institute of Science and Technology

14:45–15:00, FB07.02

Global Observability of Polynomial Systems

Yu Kawano Osaka University
Toshiyuki Ohtsuka Osaka University
15:00–15:15, FB07.03

Optimal Control Designs for Systems with Input Saturations and Rate Limiters

Yuto Yuasa Nagoya University
Noboru Sakamoto Nagoya University
Yoshio Umemura AISIN AW CO.,LTD.
15:15–15:30, FB07.04

Consensus Control Problem of Nonlinear Sampled-data Fullyactuated Ships

Hitoshi Katayama Shizuoka University
Tatsuya Moriguchi Shizuoka University
15:30–15:45, FB07.05

Linearization based on Relative Degree Structure

Kazuma Sekiguchi Tokyo Institute of Technology
Mitsuji Sampei Tokyo Institute of Technology
15:45–16:00, FB07.06

Control of Multiple Left-Invariant Systems on Lie Groups Using Less Control Inputs

Masato Ishikawa Osaka University
Ryota Yoshimura Kyoto University
Toshiharu Sugie Kyoto University

FB08 102 (VF)
Fuzzy System Analysis and Control Applications II (Organized Session)

Organizer: Tzoo-Hseng S. Li National United University
Chair: Chung-Cheng Chen National Chiayi University
Chair: Chih-Yang Chen National Cheng Kung University
14:30–14:45, FB08.01

Improvement Performance of Marine Vehicle's Autopilot Using Piecewise Fuzzy Control

DaeYeong Lim Chonbuk National University
SungGoo Yoo Chonbuk National University
KilTo Chong Chonbuk National University
14:45–15:00, FB08.02

Solution of Almost Disturbance Decoupling Problem for Nonlinear Systems Based on Fuzzy Feedback Linearization Control

T. L. Chien Wufeng Institute of Technology
S. L. Wu National Chiayi University
Chung-Cheng Chen National Chiayi University
15:00–15:15, FB08.03

Combination of Fuzzy Logic Control and Back Propagation Neural Networks for the Autonomous Driving Control of Car-Like Mobile Robot Systems

Tzoo-Hseng S. Li National Cheng Kung University
Chih-Yang Chen National Cheng Kung University
Kai-Chuin Lim National Cheng Kung University
15:15–15:30, FB08.04

The Analysis of a Semi-Active Suspension System

Yaojung Shiao National Taipei University of Technology
Chun-chi Lai National Taipei University of Technology

Quang-Anh Nguyen National Taipei University of Technology
15:30–15:45, FB08.05

Application of the GA-PSO with the Fuzzy Controller to the Robot Soccer

Juing Shian Chiou Southern Taiwan University
15:45–16:00, FB08.06

Prediction-based Neural Fuzzy Controller Design Using Modified Electromagnetism-like Algorithm

Ching-Hung Lee Yuan Ze University
Feng-Yu Chang Yuan Ze University
Hsin-Wei Chiu Yuan Ze University
Fu-Kai Chang Yuan Ze University

FB09 103 (VF)
Applications of Evolutionary Optimization (Organized Session)

Organizer: Tung-Kuan Liu
National Kaohsiung First University of Science and Technology
Chair: Jyh-Horng Chou

National Kaohsiung First University of Science and Technology
Chair: Tung-Kuan Liu

National Kaohsiung First University of Science and Technology
14:30–14:45, FB09.01

Fuzzy Control of Nonlinear Plants through Rule-Based Cooperative Particle Swarm Optimization

Chia-Feng Juang National Chung Hsing University
Lu Chun-Feng Chung Chou Institute of Technology
Che-Meng Hsiao National Chung-Hsing University
Chia Hung Hsu National Chung-Hsing University
14:45–15:00, FB09.02

Dynamic Size-Based Multiobjective Genetic Algorithm to Solve the Crew Pairing Problem

Ta-Yuan Chou National Sun Yat-sen University
Chung-Nan Lee National Sun Yat-sen University
Tung-Kuan Liu
National Kaohsiung First University of Science and Technology

Chiu-Hung Chen
National Kaohsiung First University of Science and Technology

Fu-Sheng Chang National Sun Yat-sen University
15:00–15:15, FB09.03

Intelligent Design of Adjustable Six-Bar Mechanisms Using Genetic Algorithms

Tung-Kuan Liu
National Kaohsiung First University of Science and Technology
Chiu-Hung Chen
National Kaohsiung First University of Science and Technology

Dai De-Young
National Kaohsiung First University of Science and Technology

Jyh-Horng Chou
National Kaohsiung First University of Science and Technology

15:15–15:30, FB09.04

Application of Differential Evolution to Tolerance Design

Jinn-Tsong Tsai National Pingtung University of Education

Kuo-Ming Lee
National Kaohsiung First University of Science and Technology
Tung-Kuan Liu
National Kaohsiung First University of Science and Technology
Jyh-Horng Chou
National Kaohsiung First University of Science and Technology
15:30–15:45, FB09.05

Evolutionary Robot Action Development based upon Intelligent Composite Action Control

Masakazu Suzuki Tokai University

FB10 104 (VF)
Monitoring and Diagnosis

Chair: Huang-Lian Tsai Da-Yeh University
Chair: Noboru Sebe Kyushu Institute of Technology
14:30–14:45, FB10.01

Bridge Diagnosis System by Using Nonlinear Independent Component Analysis

Juanqing Zheng Waseda University
Qingwen Wang Shanghai University
Harutoshi Ogai Waseda University
Shao Chen Waseda University
Jingqiu Huang Waseda University
14:45–15:00, FB10.02

On Vibration Signal Analysis in Bridge Health Monitoring System by Using Independent Component Analysis

Jingqiu Huang Waseda University
Harutoshi Ogai Waseda University
Chen Shao Waseda University
Juanqing Zheng Waseda University
Izumi Maruyama Fukuyama Consultant Company
Shinji Nagata Measurement Examination Company
Hiroshi Inujima Waseda University
15:00–15:15, FB10.03

Landslide Disaster Monitoring by Distributed Sensing Nodes

Tuan Sariff Syarifah Sarina Ritsumeikan University
Shigeru Takayama Ritsumeikan University
15:15–15:30, FB10.04

The Health Monitoring System based on Distributed Data Aggregation for WSN used in Bridge Diagnosis

Haitao Xiao Waseda University
Tansheng Li Waseda University
Harutoshi Ogai Waseda University
Xiaohong Zou Logical Product Corporation
Takenari Otawa Logical Product Corporation
Shinya Umeda Logical Product Corporation
Takunori Tsuji Logical Product Corporation
15:30–15:45, FB10.05

Model-Based Performance Diagnosis for PV Systems

Chih-Hao Chang Da-Yeh University
Jia-Jun Zhu Da-Yeh University
Huan-Liang Tsai Da-Yeh University
15:45–16:00, FB10.06

Verification of Damage Identification Technique Based on Transfer Function and Using on a Real Bridge

Chen Shao Waseda University
Harutoshi Ogai Waseda University
Juan qing Zheng Waseda University
Jingqiu Huang Waseda University

FB11 105 (VF)
Pattern Analysis

Chair: Kazuyoshi Yoshino Kanagawa Institute of Technology
Chair: Toru Kurihara University of Tokyo
14:30–14:45, FB11.01

GPU Based High-Speed and High-Precision Visual Tracking

Eisuke Ito Tohoku University
Satoshi Saga Tohoku University
Takayuki Okatani Tohoku University
Koichiro Deguchi Tohoku University
14:45–15:00, FB11.02

An Automatic Through-hole Inspection System by Analyzing Laser Diffraction Pattern

Kazuyoshi Yoshino Kanagawa Institute of Technology
Motoatsu Miwa Kanagawa Institute of Technology
Akihiro Kanamaru Kanagawa Institute of Technology
Norikane Kanai Kanagawa Institute of Technology
15:00–15:15, FB11.03

Single-Frame Coaxial Projection 3D Profilometry System Using Correlation Detection of Depth-Dependent MTF

Toru Kurihara The University of Tokyo
Kazuaki Ochiai The University of Tokyo
Shigeru Ando The University of Tokyo
15:15–15:30, FB11.04

Determination of Optimal Compensation for Velocity Measurement Based on Compensation Method

Daiki Shibata Kumamoto University
Teruo Yamaguchi Kumamoto University
Hiroshi Harada Kumamoto University
15:30–15:45, FB11.05

Acceleration of Ceramic Tiles Machine Vision Quality Control Algorithm using CUDA

Zeljko Hocenski J. J. Strossmayer University of Osijek
Tomislav Matic J. J. Strossmayer University of Osijek
15:45–16:00, FB11.06

FPGA Based Hybrid System for Visual Inspection of Ceramic Tiles Using Moving Average Method

Zeljko Hocenski J. J. Strossmayer University of Osijek
Robert Mijaković J. J. Strossmayer University in Osijek
Alfonzo Baumgartner J. J. Strossmayer University in Osijek

FB12 107 (VF)
System Design based on “Further Benefit of a Kind of Inconvenience” II (Organized Session)

Organizer: Hiroshi Kawakami Kyoto University
Chair: Hiroshi Kawakami Kyoto University

Chair: Hisashi Handa
14:30–14:45, FB12.01

Media designing analogous with Biotope

Hidetsugu Suto
14:45–15:00, FB12.02

A Communication Medium Using Pictograms for Media Biotope

Makiko Okita
Hidetsugu Suto
15:00–15:15, FB12.03

Social Simulation Based on Perceptual Balance on the Influence of Communication Styles

Akira Notsu
Katsuhiro Honda
Hidetomo Ichihashi
15:15–15:30, FB12.04

Communication Media Based on the media Biotope

Makiba Sakamoto
Hidetsugu Suto
Masahiro Sawai

FB13 108 (VF)
Estimation

Chair: Takami Matsuo
Chair: Takahiko Ono
14:30–14:45, FB13.01

Estimation of Continuous-time Nonlinear Systems by using the Unscented Kalman Filter

Min Zheng
Kenji Ikeda
Shimomura Takao
14:45–15:00, FB13.02

Altitude Estimation Method using Assumed Altitude Reliability Based on Multipath Propagation Model

Yuki Takabayashi
Takashi Matsuzaki
Hiroshi Kameda
15:00–15:15, FB13.03

Quasi-Optimal Recursive Time Delay Estimator for Real Sinusoids

Seul Ki Han
Won Sang Ra
Jin Bae Park
Tae Sung Yoon
15:15–15:30, FB13.04

Unknown Input Observer Design Using Descriptor System Approach

Huan-Chan Ting
Jeang-Lin Chang
Yon-Ping Chen
15:30–15:45, FB13.05

Adaptive Information Matrix Filtering Fusion with Nonlinear Classifier

Li-Wei Fong
15:45–16:00, FB13.06

Risk-Sensitive Multiple Model Particle Filter for Jump Markov Nonlinear Systems

Wenling Li
Yingmin Jia
Junping Du
Fashan Yu

Beihang University
Beihang University
Beijing University of Posts and Telecommunications
Henan Polytechnic University

FB14 109 (VF)
Petri Nets and Discrete Event Systems (Organized Session)

Organizer: Kunihiko Hiraishi
Japan Advanced Institute of Science and Technology

Chair: Kunihiko Hiraishi
Japan Advanced Institute of Science and Technology

Chair: Shiro Masuda
14:30–14:45, FB14.01

Modeling and Control of Autonomous Soccer Robots Using High-level Petri Nets

Chung-Hsien Kuo
Ting-Shou Chen

14:45–15:00, FB14.02

On-line Calculation of the Latest Starting Time for Repetitive Process Progress Schedule Based on Feedback Control Approach

Shiro Masuda
Atsuya Tanaka
Hiroyuki Goto

15:00–15:15, FB14.03
A Study on Modeling and Analysis of Production Order and Process Deadlock Free Control for an Automated Production System using Petri Net Technique

YiShuo Huang
ShihSen Peng
WenLong Yao

Data based Construction of Bayesian Network for Fault Diagnosis of Event-Driven Systems

Takuma Yamaguchi
Shinkichi Inagaki
Tatsuya Suzuki

A Graph-based Deadlock Prevention Technique for FMSs Using Petri Nets

Yi-Sheng Huang
Ter-Chan Row
Pin-June Su

On Analysis of a Class of Timed Continuous Petri nets and Its Applications

Kunihiko Hiraishi
Japan Advanced Institute of Science and Technology

FB15 110 (VF)
Humanoid Robot System Design (Organized Session)

Organizer: Ching-Chang Wong Tamkang University
Chair: Ching-Chang Wong Tamkang University
Chair: Chih-Lyang Hwang Tamkang University
14:30–14:45, FB15.01

The Stepping over an Obstacle for the Humanoid Robot with the Consideration of Dynamic Balance

Chih-Lyang Hwang Tamkang University
Han-Chen Wu Tamkang University
Ming-Lung Lin Tamkang University
14:45–15:00, FB15.02

An Efficient Object Recognition and Self-Localization System for Humanoid Soccer Robot

Jen-Shiun Chiang Tamkang University
Chih-Hsien Hsia Tamkang University
Shih-Hung Chang Tamkang University
Wei-Hsuan Chang Tamkang University
Hung-Wei Hsu Tamkang University
Yi-Che Tai Tamkang University
Chun-Yi Li Tamkang University
Meng-Hsuan Ho Tamkang University
15:00–15:15, FB15.03

Research of Multi-thread Applications for Real-Time Control Systems on Humanoid Robot Embedded Platforms

Wei-Tsong Lee Tamkang University
Tin-Yu Wu Tamkang University
Ming-Yang Chen Tamkang University
Yan-Bo Wang Tamkang University
Hung-Yi Lin Tamkang University
Kuo-Hung Liao Tamkang University
15:15–15:30, FB15.04

Behaviors Design for Vision-Based Humanoid Robot

Yueh-Yang Hu Tamkang University
Kai-Hsiang Huang Tamkang University
Hsiang-Min Chan Tamkang University
Chih-Hui Hung Tamkang University
Ching-Chang Wong Tamkang University
15:30–15:45, FB15.05

Penalty Kick of a Humanoid Robot by a Neural-Network-Based Active Embedded Vision System

Chih-Lyang Hwang Tamkang University
Nien-Wen Lu Tamkang University
Tim-Chia Hsu Tamkang University
Chun-Hao Huang Tamkang University
15:45–16:00, FB15.06

Image Feature Tracker for SLAM with Monocular Vision

Yin-Tien Wang Tamkang University
Duen-Yan Hung Tamkang University
Sheng-Hsien Cheng Tamkang University

FB17 Fu-Chuon Room (BF)
Motion/Function Control in Biological and Mechanical Systems II (Organized Session)

Organizer: Masato Ishikawa Osaka University
Chair: Tetsushi Kamegawa Okayama University
Chair: Yoshiaki Futakata University of Tokyo
14:30–14:45, FB17.01

Development of a Musculoskeletal Model of the Hind Legs of the Rat Based on Anatomical Data and Generation of Locomotion Based on Kinematic Data

Takahiro Kondo Kyoto University
Shinya Aoi Kyoto University
Dai Yanagihara University of Tokyo
Sho Aoki University of Tokyo
Hiroshi Yamaura University of Tokyo
Naomichi Ogihara Keio University
Akira Ichikawa Kyoto University
Kazuo Tsuchiya Doshisha University
14:45–15:00, FB17.02

Dynamic Rolling Locomotion by Spherical Mobile Robots Considering its Generalized Momentum

Masato Ishikawa Osaka University
Ryohei Kitayoshi Kyoto University
Toshiharu Sugie Kyoto University
15:00–15:15, FB17.03

An Impedance Control for Simplified Hydraulic Model with Casimir Functions

Sakai Satoru Shinshu University
15:15–15:30, FB17.04

A Snake Robot Propelling Inside of a Pipe with Helical Rolling Motion

Toshimichi Baba Okayama University
Yoshihide Kameyama Okayama University
Tetsushi Kamegawa Okayama University
Akio Gofuku Okayama University

FB18 Der-Hou Room East (BF)
Robot Control and Sensing (Organized Session)

Organizer: Han-Pang Huang National Taiwan University
Chair: Han Pang Huang National Taiwan University
Chair: Pei Chun Lin National Taiwan University
14:30–14:45, FB18.01

Development of the Multi-Axis Control Platform for Robot Arm

Han-Pang Huang National Taiwan University
Yen-Tsung Chen National Taiwan University
Ren-Jeng Wang National Taiwan University
Meng-Ku Chi National Taiwan University
14:45–15:00, FB18.02

Using Dual Lights for Robotic Pavement Inspection

Yung-Shun Su National Taiwan University
Shih Chung Kang National Taiwan University
Jia-Ruey Change

Minghsin University of Science and Technology
Shang-Hsien Hsieh
15:00–15:15, FB18.03

Realization of a 9-axis Inertial Measurement Unit toward Robotic Applications

Jau-Ching Lu
Chia-Hung Tsai
Pei-Chun Lin

15:15–15:30, FB18.04

An Artificial Iris for Light Intensity Modulation of Humanoid Robot Vision

Wen-Pin Shih
Tsung-Chun Hsu
Ching-Heng Lu
Yu-Ting Huang
Wen-Shiang Chen

15:30–15:45, FB18.05

Human Intention Estimation Method for a New Compliant Rehabilitation and Assistive Robot

Jiun-Yih Kuan
Tz-How Huang
Han-Pang Huang

Mamoru Minami
15:45–16:00, FB19.06

Availability of Multi-Preview Control of PA10 with Avoidance Manipulability Analyses

Yang Hou
Yusaku Nakamura
Maki Yamazaki
Tongxiao Zhang
Mamoru Minami

Okayama University

University of Fukui
University of Fukui
University of Fukui
University of Fukui
Okayama University

FB19 Der-Hou Room East (BF)
Sensing, Control and Safety System for Intelligent Vehicle
(Organized Session)

Organizer: Naoki Suganuma
Chair: Naoki Suganuma
Chair: Masatoshi Hatano

14:30–14:45, FB19.01

Robust Environment Perception Based on Occupancy Grid Maps for Autonomous Vehicle

Naoki Suganuma
Toshiki Matsui

14:45–15:00, FB19.02

Research on Hitting Tasks Performed by the Tennis Robot

Masatoshi Hatano

Probabilistic Appearance Based Object Modeling and its Application to Car Recognition

Mamoru Saito
Katsuhisa Kitaguchi

15:15–15:30, FB19.04

Arbitrary 3D View Image Generation Using a Single Camera and a Spin Mirror

Fei Gu
Takayuki Nakata
Yue Bao

15:30–15:45, FB19.05

Modelling and Control of Hyper-Redundancy Mobile Manipulator Bracing Multi-Elbows for High Accuracy/Low-Energy Consumption

Geng Wang

Okayama University

10:35–10:50, SA03.02

Web-based Image Viewer for Agricultural High-definition Monitoring

Shohei Toda	Shinshu University
Kazuki Kobayashi	Shinshu University
Fumitoshi Kobayashi	Shinshu University
Yasunori Saitoh	Shinshu University

10:50–11:05, SA03.03

Color Appearance Evaluation of Agricultural Products Image Based on Spectral Information of Lighting

Kentarou Furusawa	Mie University
Ken-ichiro Suehara	Mie University
Takaharu Kameoka	Mie University
Atsushi Hashimoto	Mie University

11:05–11:20, SA03.04

Color Image Database Construction for the Strawberry Breeding

Kyosuke Yamamoto	Mie University
Yoshitsugu Kimura	Mie University
Takashi Togami	Mie University
Yosuke Yoshioka	National Agriculture and Food Research Organization

Atsushi Hashimoto Mie University

Takaharu Kameoka Mie University

11:20–11:35, SA03.05

Color Chart of European Pear 'Le Lectier' based on the Color Image Analysis

Yoshitaka Motonaga	Niigata University
Tatsuya Matsumoto	Niigata Agricultural Research Institute
Naohiko Motonaga	Niigata Agricultural Research Institute

11:35–11:50, SA03.06

Low Cost Image Acquisition System for Field Monitoring

Ryoei Ito	Mie University
Chiaki Yamaguchi	Mie University

SA04	Auditorium (10F)
Plant Modeling (Organized Session)	

Organizer: Kazushi Nakano
The University of Electro-Communications

Chair: Kazushi Nakano
The University of Electro-Communications

Chair: Masaki Yamakita Tokyo Institute of Technology

10:20–10:35, SA04.01

Frequency Domain Analysis of Plant Model Using Closed-Loop Step Response

Yoshihiro Matsui	Tokyo National College of Technology
Tomohiko Kimura	Tokyo National College of Technology
Kazushi Nakano	The University of Electro-Communications

10:35–10:50, SA04.02

Integrated Actuator-Sensor System of Bucky Gel Device

Kazuhiro Tanaka	Tokyo Institute of Technology
Sugiura Motonobu	Tokyo Institute of Technology
Yamakita Masaki	Tokyo Institute of Technology
Norihiro Kamamichi	Tokyo Denki University

Toshiharu Mukai RIKEN

10:50–11:05, SA04.03

Robust Falling-down Avoidance Control for Acrobat Robot Using Switching Controller

Yusuke Yashiro	Tokyo Institute of Technology
Masaki Yamakita	Tokyo Institute of Technology
Shinya Hirano	RIKEN
Zhi Wei Luo	Kobe University

11:05–11:20, SA04.04

Modeling and Calibration of Automatic Guided Vehicle

Kosuke Tanaka	The University of Electro-Communications
Kenji Sawada	The University of Electro-Communications
Seiichi Shin	The University of Electro-Communications
Kenji Kumagai	Murata Machinery, LTD.
Naoto Yoneda	Murata Machinery, LTD.

11:20–11:35, SA04.05

Shared Engine Model for Automotive Engine Calibration Platform Development in JCUJ

Akira Ohata Toyota Motor Co.

SA05	Chang Chin Room (10F)
Vision Systems III	

Chair: Seiji Ishikawa Kyushu Institute of Technology

Chair: Seungbin Moon Sejong University

10:20–10:35, SA05.01

Face-Recognition Based on Higher-Order Local Auto Correlation Feature for Speaker Array System

Yusuke Kitano	Tokyo University of Science
Hiroshi Takemura	Tokyo University of Science
Hiroshi Mizoguchi	Tokyo University of Science

10:35–10:50, SA05.02

Development of a Time-sharing-based Color-assisted Vision System for Persons with Color-vision Deficiency

Tomoyuki Ohkubo	Hosei University
Kazuyuki Kobayashi	Hosei University
Kajiro Watanabe	Hosei University
Yosuke Kurihara	Seikei University

10:50–11:05, SA05.03

Creating an Entire Object Model Employing Virtual See-through Cameras

Toshimasa Sone	Kyushu Institute of Technology
Meishan Piao	Kyushu Institute of Technology
Joo Kooi Tan	Kyushu Institute of Technology
Hyeongseop Kim	Kyushu Institute of Technology
Seiji Ishikawa	Kyushu Institute of Technology

11:05–11:20, SA05.04

A Study on Obstacle Detection Using 3D Hough Transform with Corner

Sun Min Hwang	Pusan National University
Chiyeon Kim	Pusan National University
JunYoung Baek	Pusan National University
Hyeon Seob Eom	Pusan National University
Mincheol Lee	Pusan National University

11:20–11:35, SA05.05

Improved Face Recognition Algorithm Employing SURF Descriptors

Minku Kang Sejong University
Wonkook Choo Sejong University
Seungbin Moon Sejong University

11:35–11:50, SA05.06

A Fast Feature Extraction Algorithm for Omni-directional Vision System

Zhu Jinhui South China University of Technology
Liang Mingjie South China University of Technology
Liang Yingju South China University of Technology
Min Huaquhing South China University of Technology
Zhang Mei South China University of Technology

University of Occupational and Environmental Health
Takunori Tsuji Logical Product Corporation

11:20–11:35, SA06.05

Gait Assessment for Elderly Using a Portable Acceleration Monitoring Device

Naruhiro Shiozawa Ritsumeikan University
Shima Okada Ritsumeikan University
Masaaki Makikawa Ritsumeikan University

11:35–11:50, SA06.06

Measurement of Side Unbalance of Body in Walking

Yuuki Matsuda Ritsumeikan University
Nobuaki Takahashi Ritsumeikan University
Tomohiro Tanaka Ritsumeikan University
Shigeru Takayama Ritsumeikan University

SA06

Song Bo Room (10F)

Healthcare and Welfare III

Chair: Naruhiro Shiozawa Ritsumeikan University
Chair: Shigeru Takayama Ritsumeikan University

10:20–10:35, SA06.01

A Study on Gait Analysis by Measuring Axis Rotation Based on 3D Magnetic and Acceleration Sensors

Akira Minami Hosei University
Teruo Horikawa Hosei University
Tomoyuki Ohkubo Hosei University
Kazuyuki Kobayashi Hosei University
Kajiro Watanabe Hosei University
Yosuke Kurihara Seikei University

10:35–10:50, SA06.02

Measurement of impacts on legs in walking

Nobuaki Takahashi Ritsumeikan University
Tomohiro Tanaka Ritsumeikan University
Yuuki Matsuda Ritsumeikan University
Shigeru Takayama Ritsumeikan University

10:50–11:05, SA06.03

Construction of Advice System to Keep Walking Ability for Physical Health

Tomohiro Tanaka Ritsumeikan University
Nobuaki Takahashi Ritsumeikan University
Yuuki Matsuda Ritsumeikan University
Shigeru Takayama Ritsumeikan University

11:05–11:20, SA06.04

Development of a Rehabilitation Support System with a Shoe-Type Measurement Device for Walking

Chikamune Wada Kyushu Institute of Technology
Yukinobu Sugimura Kyushu Institute of Technology
Takafumi Ienaga
Institute of System, Information Technologies and Nanotechnologies
Yoshihiko Kimuro
Institute of System, Information Technologies and Nanotechnologies
Futoshi Wada
University of Occupational and Environmental Health
Kenji Hachisuka

SA07

101 (VF)

Control Synthesis for Robustness, Synchronization, and Intelligent Adaptation (Organized Session)

Organizer: Chung-Yao Kao National Sun Yat-Sen University
Chair: Chung-Yao Kao National Sun Yat-Sen University
Chair: Hisaya Fujioka Kyoto University

10:20–10:35, SA07.01

A Disturbance Attenuation Controller Design for Two-inertia Systems which Explicitly Depends on Physical Parameters

Yasuhide Kobayashi Nagaoka University of Technology
Yuta Sugano Nagaoka University of Technology
Tetsuya Kimura Nagaoka University of Technology

10:35–10:50, SA07.02

Design of Adaptive Backstepping Tracking Controllers for a Class of Mismatched Perturbed Chaotic Synchronization Systems

Yan-Si Lin National Sun Yat-Sen University
Chih-Chiang Cheng National Sun Yat-Sen University

10:50–11:05, SA07.03

Design and Control of a RGB LED System

Chun-Wen Tang National Taiwan University
Fu-Cheng Wang National Taiwan University
Bin-Juine Huang National Taiwan University

11:05–11:20, SA07.04

Robust Control of a Furuta Pendulum

Chung-Huang Yu National Yang-Ming University
Fu-Cheng Wang National Taiwan University
Yu-Ju Lu National Taiwan University

11:20–11:35, SA07.05

A SVD Based Controller Reduction Method

Kin Cheong Sou Lund University
Anders Rantzer Lund University

11:35–11:50, SA07.06

Verification of Consensus in Networks of Heterogeneous LTI Agents

Ulf Torbjorn Jönsson Royal Institute of Technology
Chung-Yao Kao National Sun Yat-Sen University

SA08	102 (VF)
Fuzzy Systems Analysis and Control (Organized Session)	

Organizer: Ching Hsiang Lee
National Kaohsiung University of Applied Sciences
Chair: Ching Hsiang Lee
National Kaohsiung University of Applied Sciences

10:20–10:35, SA08.01

Self-constructing Recurrent Fuzzy Neural Network for Ultrasonic Motor Drive

Lin Hong National Kaohsiung University of Applied Sciences
Wei-Han Weng National Kaohsiung University of Applied Sciences
Yu-Che Chan National Kaohsiung University of Applied Sciences
Chun-Hsiung Fang National Kaohsiung University of Applied Sciences

10:35–10:50, SA08.02

Optimal Control of Uncertain Fuzzy Model Based Delay Systems

Ming-Ren Hsu National Kaohsiung University of Applied Sciences
Wen-Hsien Ho Kaohsiung Medical University
Ming-Chang Zheng National Kaohsiung First University of Science and Technology
Jyh-Horng Chou National Kaohsiung First University of Science and Technology

10:50–11:05, SA08.03

Control of Singular Fuzzy Systems with Time Delays

Ching Hsiang Lee National Kaohsiung University of Applied Science
Jine-Hua Wang National Kaohsiung University of Applied Sciences
Yen-Jen Chiu National Kaohsiung University of Applied Sciences
Shun-Yuan Hsu National Kaohsiung University of Applied Sciences

11:05–11:20, SA08.04

The Design of an Autonomous Parallel Parking Neuro-Fuzzy Controller for a Car-Like Mobile Robot

Zhi-Long Wang National Kaohsiung University of Applied Sciences
Chih-Hsiung Yang National Kaohsiung University of Applied Sciences
Tong-Yi Guo National Kaohsiung University of Applied Sciences

11:20–11:35, SA08.05

A New Approach to Stabilization of T-S Fuzzy Systems

Shih-Wei Kau National Kaohsiung University of Applied Sciences
Chung-Chih Yeh National Kaohsiung University of Applied Sciences
Yi-Min Su National Kaohsiung University of Applied Sciences
Chun-Hsiung Fang National Kaohsiung University of Applied Sciences

11:35–11:50, SA08.06

Fuzzy PID Controller Design using Self Adaptive Bacterial Foraging Optimization

Te-Jen Su National Kaohsiung University of Applied Sciences
Li-Wei Chen National Kaohsiung University of Applied Sciences
Chia-Jung Yu National Kaohsiung University of Applied Sciences
Jui-Chuan Cheng National Kaohsiung University of Applied Sciences

SA09	103 (VF)
Genetic Network Programming I	

Chair: Shingo Mabu Waseda University
Chair: Yan Chen Waseda University

10:20–10:35, SA09.01

Genetic Network Programming with Exception Control

QingBiao Meng Waseda University
Shingo Mabu Waseda University
Kotaro Hirasawa Waseda University

10:35–10:50, SA09.02

Hybrid Rule Mining based on Fuzzy GNP and Probabilistic Classification for Intrusion Detection

Nannan Lu Waseda University
Shingo Mabu Waseda University
Wenjing Li Waseda University
Kotaro Hirasawa Waseda University

10:50–11:05, SA09.03

A Bidding Strategy based on Genetic Network Programming in Continuous Double Auctions

Chuan Yue Waseda University
Shingo Mabu Waseda University
geng dong Yu Waseda University
Yu Wang Waseda University
Kotaro Hirasawa Waseda University

11:05–11:20, SA09.04

Functionally Distributed Systems Using Parallel Genetic Network Programming

Yiwen Zhang Waseda University
Xianneng Li Waseda University
Yang Yang Waseda University
Shingo Mabu Waseda University
Kotaro Hirasawa Waseda University

11:20–11:35, SA09.05

Generalized Rule Accumulation Based On Genetic Network Programming Considering Different Population Size and Rule Length

Lutao Wang Waseda University
Shingo Mabu Waseda University
Fengming Ye Waseda University
Kotaro Hirasawa Waseda University

11:35–11:50, SA09.06

Time Related Association Rules Mining with Attributes Accumulation Mechanism Applied to Large-scale Traffic System

Xiaoli Wang Waseda University
Shingo Mabu Waseda University

Huiyu Zhou Waseda University
Kotaro Hirasawa Waseda University

Masaya Izuchi AIST
Jun Tamba AIST
Masaru Arai AIST

10:50–11:05, SA11.03

High-Temperature Tungsten-Cell Fixed Points for on Site Calibration of Pyrometers for the Measurement of Melting Temperature of Nuclear Fuels

Naohiko Sasajima AIST
Yoshiro Yamada AIST
Juntaro Ishii AIST

11:05–11:20, SA11.04

Automatic Measurement Apparatus for Clinical Electrical Thermometers

Shu-Fei Tsai Center for Measurement Standards
Wei-Jeng Chang Center for Measurement Standards
Zong-Ying Chung Center for Measurement Standards

11:20–11:35, SA11.05

Standard source for skin type clinical thermometers

Hsinyi Ko Industrial Technology Research Institute

SA10 104 (VF)
Recent Development of Core Technology for Energy-saving Wheel Motors in Taiwan (Organized Session)

Organizer: Ming-Yang Cheng National Cheng Kung University
Chair: Ming-Yang Cheng National Cheng Kung University
Chair: Shyh-Jier Huang National Cheng Kung University

10:20–10:35, SA10.01

Analysis of Iron Loss in a Wheel Motor with High Quality Silicon Steel Plates

Po Wei Huang National Cheng Kung University
Mi-Ching Tsai National Cheng Kung University
Ming-Yang Cheng National Cheng Kung University

10:35–10:50, SA10.02

A Matching Design for Ultra-Capacitor and Li-Ion Battery Cooperation in Electric Wheel Motors

Shyh-Jier Huang National Cheng Kung University
Fu-Sheng Pai National University of Tainan
Bo-Ke Huang National Cheng Kung University

10:50–11:05, SA10.03

A Novel Changeover Technique for Variable-Winding Brushless DC Motor Drives

Ming-Shyan Wang Southern Taiwan University
Nai-Chiu Hsu Southern Taiwan University
Cheng-Yi Chiang Southern Taiwan University
Shih-Hao Wang National Cheng Kung University
Tzu-Chang Shau National Cheng Kung University

11:05–11:20, SA10.04

Driving and Regenerative Braking Method for Energy-Saving Wheel Motor

Tien-Chi Chen Kung Shan University
Tsai-Jiun Ren Kung Shan University
Yi-Shuo Chen National Cheng Kung University
Yi-Wei Lou Kung Shan University

SA11 105 (VF)
Recent Advances in Temperature Measurement (Organized Session)

Organizer: Masato Sugiura Nippon Steel Corp.
Chair: Masato Sugiura Nippon Steel Corp.
Chair: Naohiko Sasajima AIST

10:20–10:35, SA11.01

Evaluation of Fluorescent Inorganic Materials in Low Temperature Region

Hiroaki Aizawa Toyo University
Yukari Miyazaki Toyo University
Tooru Katsumata Toyo University
Shuji Komuro Toyo University

10:35–10:50, SA11.02

Thermoelectric Stability of Pt/Pd Thermocouples around 1500°C
Hideki Ogura AIST

SA12 107 (VF)
Recent Progress in Mechanical Metrology I (Organized Session)

Organizer: Yoshitaka Morimoto Kanazawa Institute of Technology

Chair: Takanori Yamazaki Oyama National College of Technology

Chair: Yoshitaka Morimoto Kanazawa Institute of Technology

10:20–10:35, SA12.01

Performance Evaluation of a Mass Comparator with a Readability of 0.1 µg

Masaaki Ueki AIST
Jian-Xin Sun AIST
Kazunaga Ueda AIST

10:35–10:50, SA12.02

Improvement in Precise Estimation of the Pressure Distortion Coefficient for Controlled-Clearance Piston-Cylinders at Higher Pressures

Hiroaki Kajikawa AIST
Kazunori Ide AIST
Tokihiko Kobata AIST

10:50–11:05, SA12.03

Long-Term Evaluation of Effective Area Ratio of Pressure Balances

Tokihiko Kobata AIST
Momoko Kojima AIST
Hiroaki Kajikawa AIST

11:05–11:20, SA12.04

Development of Calibration System for Pressure Transducers in the Range of 10 kPa Absolute Pressure

Momoko Kojima AIST
Tokihiko Kobata AIST

11:20–11:35, SA12.05

Proposal and Evaluation of the Center of Gravity Estimate Method

by Using the Lower Limb Positional Data

Yukinobu Sugimura Kyushu Institute of Technology
Chikamune Wada Kyushu Institute of Technology

SA13 108 (VF)
Modeling and System Identification I

Chair: Masaaki Kanno Niigata University
Chair: Der-Cherng Liaw National Chiao Tung University
10:20–10:35, SA13.01

A New Discrete-Time Model for a van der Pol Oscillator

Triet Nguyen Van University of Tsukuba
Noriyuki Hori University of Tsukuba
10:35–10:50, SA13.02

H₂ Model Reduction Using an Algebraic Approach

Masaaki Kanno Niigata University
10:50–11:05, SA13.03

Distributed Control Architecture for “Multi-Agent Transportation (MAT) System” with {3,6} Configuration

Keizo Miyahara Shibaura Institute of Technology
11:05–11:20, SA13.04

Active Noise Control with Noise Power Scheduling for Online Acoustic Feedback Path Modeling

Sang-Won Nam Hanyang University
Jaebeom Seo Hanyang University
Kyoung Jae Kim Hanyang University
Jinoh Park Hanyang University
11:20–11:35, SA13.05

Dynamical Analysis of a Third-Order Nonlinear Amplitude Equation for Plasma Torch

Der-Cherng Liaw National Chiao Tung University
Shih-Tse Chang National Chiao Tung University
Heng-Yi Li Institute of Nuclear Energy Research
Chin-Ching Tzeng Institute of Nuclear Energy Research
Shiaw-Huei Chen Institute of Nuclear Energy Research
11:35–11:50, SA13.06

Accuracy Improvement of Practical PV Model

Huan-Liang Tsai Da-Yeh University
Po-Wen Hsiao Da-Yeh University
Chih-Hao Chang Da-Yeh University

SA14 109 (VF)
Inverse Problems I (Organized Session)

Organizer: Kenbu Teramoto Saga University
Chair: Kenbu Teramoto Saga University
Chair: Tadashi Ito Gunma University
10:20–10:35, SA14.01

Nondestructive Measurement of Diameter of Reinforcing Bars in Concrete Using an Electromagnetic Wave Radar Under the Effect of Cross Bars

Shogo Tanaka Yamaguchi University
Halima Begum Yamaguchi University
10:35–10:50, SA14.02

Measurement of Body Fat Distribution by Using 3-D Electrical

Impedance Tomography: Numeric and Phantom Experiments

Tadashi Ito Gunma University
Toshihide Sakui Gunma University
Tokichika Inose Gunma University
10:50–11:05, SA14.03

Near-field Acoustical Imaging of Cracks over the A₀-mode Lamb-wave Field

Kenbu Teramoto Saga University
Naohiro Tamachi Saga University
11:05–11:20, SA14.04

Free Viewpoint Video Synthesis on Human Action Using Shape From Silhouette Method

Taku Watanabe Keio University
Toshiyuki Tanaka Keio University
11:20–11:35, SA14.05

Direct estimation of wave source location from weighted integral measurements on finite boundary

Shigeru Ando The University of Tokyo
Toru Kurihara The University of Tokyo
11:35–11:50, SA14.06

Partially Filled Flow Tomography with Electro-Magnetic Induction

Miki Sakuratani Keio University
Satoshi Honda Keio University

SA15 110 (VF)
Nexus System Design: New Interaction among Humans, Agents, and Robots I (Organized Session)

Organizer: Keiki Takadama
The University of Electro-Communications

Chair: Keiki Takadama
The University of Electro-Communications

Chair: Katsunori Shimohara Doshisha University
10:20–10:35, SA15.01

Towards an Objective Generation as an Autonomous Agent Architecture

Ayano Kanamaru The University of Electro-Communications
Kiyohiko Hattori The University of Electro Communications
Hiroyuki Sato The University of Electro Communications
Keiki Takadama The University of Electro-Communications
10:35–10:50, SA15.02

Entrainment Between Speech and Gestures in Human-Robot Interaction

Takamasa Iio ATR/Doshisha University
Masahiro Shiomi ATR Intelligent Robotics and Communication Laboratories
Kazuhiko Shinozawa ATR Intelligent Robotics and Communication Laboratories
Takaaki Akimoto ATR Intelligent Robotics and Communication Laboratories
Katsunori Shimohara Doshisha University
Norihiro Hagita ATR Intelligent Robotics and Communication Laboratories
10:50–11:05, SA15.03

Comic Live Chat: Communication Tool Based on Concept of Downgrading

Misaki Matsuda Doshisha University
Ivan Tanev Doshisha University
Katsunori Shimohara Doshisha University

11:05–11:20, SA15.04

Context Dependency of Facial Expressions in Communications

Hiroto Fukushima Doshisha University
Ivan Tanev Doshisha University
Katsunori Shimohara Doshisha University

11:20–11:35, SA15.05

Proposal of Highly Accurate Position Estimation System Using Movement History of Wireless Terminals and Wireless Communications

Kiyohiko Hattori The University of Electro Communications
Nobuo Nakajima The University of Electro-Communications
Keiki Takadama The University of Electro-Communications

SA16 West Gallery (VF)
Interactive Session III

10:20–11:50, SA16.01

Non-Contact and Non-Attached Human Hand Motion Sensing Technique for Application to the Human Machine Interface

Koichi Kurita Kochi National College of Technology

10:20–11:50, SA16.02

A Sensing System Using Resonant Sensor That is Excited and Detected by Semiconductor Laser Lights through Optical Fibers

Hideto Iwaoka Kanazawa Institute of Technology

10:20–11:50, SA16.03

A Low-cost Noncontact Potentiometer with Fault Isolation for Electric Scooter Speed Regulation

Chi-Sheng Tsai Chienkuo Technology University
Lukas Blaha University of West Bohemia in Pilsen

10:20–11:50, SA16.04

Research and Practice about Positioning Algorithms of Humanoid Robot in Robocup Soccer Stadium

Xu Ying Kong Beijing Information Technology College
Zhi Bin Zhang Beijing Information Technology College
Zhi Hong Lin Beijing Information Technology College
Li Jun Gao Beijing Information Technology College

10:20–11:50, SA16.05

Research on Improvement of Algorithm about Identifying Robot Soccer

Zhi Hong Lin Beijing Information Technology College
Xu Ying Kong Beijing Information Technology College
Peng Chang Beijing Information Technology College

10:20–11:50, SA16.06

Ethernet for Networked Control

Cosmin Ionete University of Craiova
Dorin Sendrescu University of Craiova
Dorin Popescu University of Craiova
Adina Ionete ELPREST SRL

10:20–11:50, SA16.07

Estimation Strategies for Kinetic Parameters of an Alcoholic Fermentation Bioprocess

Dan Selisteanu University of Craiova
Emil Petre University of Craiova
Monica Roman University of Craiova
Cosmin Ionete University of Craiova
Dorin Popescu University of Craiova

10:20–11:50, SA16.08

Autonomous Steering Control Simulator for On-Line Electric Vehicle

Choi Youjun KAIST
Sunjong Lee KAIST
Jinkyu Kim KAIST

10:20–11:50, SA16.09

Integral Sliding Mode Control for Underactuated Robots

Dong Sang Yoo Hankyong National University

10:20–11:50, SA16.10

Robustness of Pole Assignment for an Interval Polynomial in a Damping-Cone Based on the Positive Interval Routh-Table

Bin Yih Juang St. John's University/National Taiwan University

10:20–11:50, SA16.11

Control Characteristics of Cooperative Conveyance System for Multiple Mobile Robots using Complex-Valued Neural Network

Hiroshi Suzuki The University of Tokushima
Takashi Yasuno The University of Tokushima
Shiro Urushihara Nagaoka University of Technology
Emiko Yasuno Anan National College of Technology
Akinobu Kuwahara The University of Tokushima

10:20–11:50, SA16.12

A Simultaneous Design of Structural and Control Systems Using an Infeasible Controller Sequence

Yasushi Kami Akashi National College of Technology
Takashi Terada Akashi National College of Technology
Eitaku Nobuyama Kyushu Institute of Technology

10:20–11:50, SA16.13

Robust Stabilizing PID Controllers Design for Networked Control Systems with Time-Varying Communication Delays

Yuan-Jay Wang Tunghnan University
Song-Hong Shih Tunghnan University

10:20–11:50, SA16.14

Parameterization for Multi-Degree of Freedom Control in State Space

Rui Wang Northeastern University
Tianyou Chai Northeastern University
Heng Yue Northeastern University

10:20–11:50, SA16.15

An Image Processing for Surface Inspection

Tomoko Fujidai Kagawa University
Jun'ichi Yamaguchi Kagawa University
Motoki Nagai West Nippon Expressway Engineering Shikoku, Co.Ltd

10:20–11:50, SA16.16

Adaptive Walking Control Using CPG Network for Quadruped

Robot with Bi-articular Muscles Model

Yong Zhang The University of Tokushima
Takashi Yasuno The University of Tokushima
Ryohei Nogami The University of Tokushima
Hiroshi Suzuki The University of Tokushima

10:20–11:50, SA16.17

Output Prediction of Wind Power Generation System Using Complex-valued Neural Network

Takahiro Kitajima The University of Tokushima
Takashi Yasuno The University of Tokushima

10:20–11:50, SA16.18

Orientation Measurement Method for a Car Using its License Plate Image

Nozomu Araki University of Hyogo
Takao Sato University of Hyogo
Yasuo Konishi University of Hyogo
Hiroyuki Ishigaki University of Hyogo

10:20–11:50, SA16.19

Development of a Remote Visitor Robot System — Attending a Remote Conference and Visiting to an Aged Care Center —

Kyoichi Tatsuno Meijo University
Tatsuya Kawai Meijo University
Mikio Nako Meijo University
Yuki Yasuda Meijo University
Takahisa Fukuta Meijo University

10:20–11:50, SA16.20

Study of a Vehicular Drive-by-Wire System Based on FlexRay Protocol

Chau-Chung Song National Formosa University
Wei-Chi Chen National Formosa University
Chen-Fu Feng National Formosa University
Der-Cherng Liaw National Chiao Tung University

10:20–11:50, SA16.21

Transceiver Design for the Bus Driver of the FlexRay Communication System

Shi-Hao Zheng National Changhua University of Education
Zhi-Ming Lin National Changhua University of Education
Der-Cherng Liaw National Chiao Tung University

10:20–11:50, SA16.22

Study on Dedicated Radio Frequency for Railway Use

Zhong-Hua Quan POSCO ICT
Myung-Seon Ryou POSCO ICT
Duk-Kyu Park Mokwon University

SA17 Fu-Chuon Room (BF)
Passive Dynamic Walk (Organized Session)

Organizer: Kazuyuki Hyodo Toyota Technological Institute
Chair: Kazuyuki Hyodo Toyota Technological Institute
Chair: Koichi Osuka Osaka University

10:20–10:35, SA17.01

Implicit Control Law in Passive Dynamic Walking

Koichi Osuka Osaka University
Yasuhiro Sugimoto Osaka University

Akio Ishiguro Tohoku University
Dai Owaki Tohoku University
Xin-Zhi Zheng ASTEM RI

10:35–10:50, SA17.02

Realization and Motion Analysis of Multi-legged Passive Dynamic Walking

Yasuhiro Sugimoto Osaka University
Hidetaka Yoshioka Kobe University
Koichi Osuka Osaka University

10:50–11:05, SA17.03

Modification of Learning Optimal Gait Generation Method in Considering Discontinuous Velocity Transitions

Satoshi Satoh Hiroshima University
Masahito Ikeda Nagoya University
Kenji Fujimoto Nagoya University
Yoshikazu Hayakawa Nagoya University

11:05–11:20, SA17.04

Dynamical Model Verification of Passive Dynamic Walking with a Compass Model Prototype

Masatsugu Iribe Osaka Electro-Communication University
Tetsuya Kinugasa Okayama University of Science
Yasuhiro Sugimoto Osaka University
Koichi Osuka Osaka University

11:20–11:35, SA17.05

Turning Motion by Control Constraint Mechanism of Passive Dynamic Walking

Kazuyuki Hyodo Toyota Technological Institute
Sadayoshi Mikami Future University–Hakodate
Tatsuo Narikiyo Toyota Technological Institute
Michihiro Kawanishi Toyota Technological Institute

SA18 Der-Hou Room East (BF)
Networked and/or Embedded Systems

Chair: Wataru Uemura Ryukoku University
Chair: Takashi Yoshimi Shibaura Institute of Technology

10:20–10:35, SA18.01

Design and Development of RT-Component Plug and Play system for USB devices

Yusuke Zama Shibaura Institute of Technology
Motomasa Tanaka Shibaura Institute of Technology
Tsunehiko Fujita Shibaura Institute of Technology
Makoto Mizukawa Shibaura Institute of Technology
Takashi Yoshimi Shibaura Institute of Technology
Yoshinobu Ando Shibaura Institute of Technology

10:35–10:50, SA18.02

Design of the Redundant RTC-CANopen Component

Yuhki Ishiguro Shibaura Institute of Technology
Motomasa Tanaka Shibaura Institute of Technology
Makoto Mizukawa Shibaura Institute of Technology
Takashi Yoshimi Shibaura Institute of Technology
Yoshinobu Ando Shibaura Institute of Technology

10:50–11:05, SA18.03

Design of Firmware Update System of RT-Middleware for Embed-

ded System

Katsuhiro Mayama Shibaura Institute of Technology
Motomasa Tanaka Shibaura Institute of Technology
Yoshinobu Ando Shibaura Institute of Technology
Takashi Yoshimi Shibaura Institute of Technology
Makoto Mizukawa Shibaura Institute of Technology
11:05–11:20, SA18.04

Development of the Protocol System for the Data Communication in the Ship

HagTae Kim Chonbuk National University
Vista Felipe Chonbuk National University
MoonKyou Song Wonkwang University
KilTo Chong Chonbuk National University
11:20–11:35, SA18.05

Ad-hoc Network Routing Protocol for an Application Layer

Wataru Uemura Ryukoku University
Masashi Murata Ryukoku University
11:35–11:50, SA18.06

Evaluation of Intelligent battery using CANopen

Koji Ishida Shibaura Institute of Technology
Motomasa Tanaka Shibaura Institute of Technology
Yoshinobu Ando Shibaura Institute of Technology
Takashi Yoshimi Shibaura Institute of Technology
Makoto Mizukawa Shibaura Institute of Technology

SA19 Der-Hou Room East (BF) **Intelligent System and Control**

Chair: Chi-Ying Lin
National Taiwan University of Science and Technology
Chair: Toshihiro Shinohara Kinki University
10:20–10:35, SA19.01

Control System Design Based on Distributed Probabilistic Model-Building Genetic Algorithm

Michihiro Kawanishi Toyota Technological Institute
Tomohiro Kaneko Toyota Technological Institute
Tatsuo Narikiyo Toyota Technological Institute
10:35–10:50, SA19.02

Balance Control for Two-Wheeled Robot via Neural-Fuzzy Technique

Kuo-Ho Su Chinese Culture University
Yih-Young Chen Chinese Culture University
10:50–11:05, SA19.03

Neural Network Adaptive Control and Repetitive Control for High Performance Precision Motion Control

Chi-Ying Lin
National Taiwan University of Science and Technology
11:05–11:20, SA19.04

Repetitive Tracking Control of DC Motors Using a Fuzzy Iterative Learning Controller

Chiang-Ju Chien Huafan University
Ssu-Lung Hsu Huafan University
11:20–11:35, SA19.05

A Study of Color Features for Reading a Resistor

Yoshihiro Mitani Ube National College of Technology
Yoshihiko Hamamoto Yamaguchi University
11:35–11:50, SA19.06

Automatic Construction of Weave Diagram of Warp-knitted Fabric Using Positional Information on Yarn

Toshihiro Shinohara Kinki University

Invited Lecture III Grand Ballroom (12F)

Chair: Tatsuya Suzuki Nagoya University
13:20–14:10

Design and Evolution of Autonomous Molecular Systems in DNA Nanoengineering and Synthetic Biology

Masami Hagiya University of Tokyo

Invited Lecture IV Auditorium (10F)

Chair: Tadashi Ito Gunma University
13:20–14:10

Toward the Redefinition of the SI Base Units

Kenichi Fujii
National Institute of Advanced Industrial Science and Technology

SB01 Sky Lounge (12F) **Advanced Industrial Control II** (Organized Session)

Organizer: Chi Huang Lu Hsiuping Institute of Technology
Chair: Chi-Huang Lu Hsiuping Institute of Technology
Chair: Hsu-Chih Huang HungKuang University
14:30–14:45, SB01.01

Neural-Network-Based Predictive Control for Nonlinear Processes

Chi-Huang Lu Hsiuping Institute of Technology
Yuan-Hai Charng Hsiuping Institute of Technology
Chi-Ming Liu Hsiuping Institute of Technology

14:45–15:00, SB01.02

Trajectory Planning and Motion Control of a Two-Armed Robot

Ching-Chih Tsai National Chung-Hsing University
Liang Ting-Ting National Chung Hsing University
YiYu Li National Chung Hsing University

15:00–15:15, SB01.03

Particle Swarm Optimization Algorithm for Optimal Configurations of an Omnidirectional Mobile Service Robot

Hsu-Chih Huang HungKuang University
Ching-Chih Tsai National Chung Hsing University
15:15–15:30, SB01.04

FPGA Implementation of a Real-Time Image Tracking System

Yuan-Pao Hsu National Formosa University
Hsiao-Chun Miao National Formosa University
Ching-Chih Tsai National Chung-Hsing University

SB02 North Foyer (12F) **Information Systems for Transportation II**

Chair: Hikaru Shimizu Fukuyama University
Chair: Li Sheng Wang National Taiwan University

14:30–14:45, SB02.01

The Next Generation Digital Road Map Creation Support System Using a Mobile Mapping System

Kiichiro Ishikawa	Waseda University
Masashi Takano	Waseda University
Yoshiharu Amano	Waseda University
Takumi Hashizume	Waseda University

14:45–15:00, SB02.02

Navigation System Based on GPS and Dead-Reckoning Data Fusion

Tase Yeong Kim	Chonbuk National University
Young Chul Kim	Kunsan National University
Kil To Chong	Chonbuk national University

15:00–15:15, SB02.03

Intelligent Collision Risk Assessment Based on Neural Network Ensemble

Bumsung Kim	Yonsei University
Seongkeun Park	Yonsei University
Baehoon Choi	Yonsei University
Euntai Kim	Yonsei University

15:15–15:30, SB02.04

Collision Risk Assessment for Pedestrians' Safety: Neural Network with Interacting Multiple Model Approach

Seongkeun Park	Yonsei University
Beomseong Kim	Yonsei University
Baehoon Choi	Yonsei University
Euntai Kim	Yonsei University

15:30–15:45, SB02.05

An Estimation of Link Travel Time in Urban Road Networks

Hikaru Shimizu	Fukuyama University
Yoshiyuki Moritou	Fukuyama University
Masa-aki Kobayashi	Fukuyama University

15:45–16:00, SB02.06

Long-term Prediction of GPS Satellite Orbit

Tin-An Hsu	National Taiwan University
Li-Sheng Wang	National Taiwan University
Fan-Ren Chang	National Taiwan University
Yi-Fen Tseng	Fujitsu Microelectronics Pacific Asia Ltd.

Takaharu Kameoka

Mie University

14:45–15:00, SB03.02

Thermal Image Utilization on the Vigor Diagnosis of Mandarin Orange Tree

Yuichi Ohtani	Mie University
Takashi Togami	Mie University
Yoshitsugu Kimura	Mie University
Atsushi Hashimoto	Mie University
Takaharu Kameoka	Mie University

15:00–15:15, SB03.03

Conceptualization and Implementation of Food User Experience Technologies

Shih-Chieh Li	Academia Sinica
Hajime Nagai	Suntory Holdings Ltd.
Yoshinori Sato	Tohoku Gakuin University
Takaharu Kameoka	Mie University

15:15–15:30, SB03.04

Deployment and Improvement of Field Servers in India

Masayuki Hirafuji	National Agricultural Research Center
Hideo Yoichi	

National Agriculture and Food Research Organization

Yugo Miki

National Agriculture and Food Research Organization

Takuji Kiura

National Agriculture and Food Research Organization

Kei Tanaka

National Agriculture and Food Research Organization

Tokihiro Fukatsu

National Agriculture and Food Research Organization

Seishi Ninomiya

National Agriculture and Food Research Organization

15:30–15:45, SB03.05

Laser Speckle Pattern Measurement for Plant State Monitoring

Hiroaki Ishizawa	Shinshu University
Masaki Kawamura	Shinshu University
Takuro Horiguchi	Shinshu University
Shouhei Koyama	Shinshu University

SB03	South Foyer (12F)
ICT Applications in Food and Agriculture (Organized Session)	

Organizer: Takaharu Kameoka	Mie University
Chair: Atsushi Hashimoto	Mie University
Chair: Hiroaki Ishizawa	Shinshu University

14:30–14:45, SB03.01

Visual Guideware as an Information Tools in the Farm

Takashi Togami	Mie University
Yasuhiro Sakakibara	Mie University
Kyosuke Yamamoto	Mie University
Yoshitsugu Kimura	Mie University
Ryoei Ito	Mie University
Atsushi Hashimoto	Mie University

SB04	Auditorium (10F)
Advances in Industrial Applications	

Chair: Takayuki Ohta	Wakayama University
Chair: Soichiro Shimoda	Yokogawa Electric Corporation

14:30–14:45, SB04.01

A Design Method for Minimum Cost Path of Flying Probe In-circuit Testers

Yuki Hiratsuka	The University of Electro-Communications
Fumihiko Kato	The University of Electro-Communications
Katsumi Konishi	Kogakuin University
Seiichi Shin	The University of Electro-Communications

14:45–15:00, SB04.02

Temperature Monitoring of Si Wafer Using Optical Low-Coherence Interferometry

Takayuki Ohta	Wakayama University
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Masafumi Ito Meijo University
 Chisio Koshimizu Tokyo Electron AT Ltd.
 15:00–15:15, SB04.03

Average Trajectory Calculation for Batch Processes Using Dynamic Time Warping

Toru Kashima Yamatake Corporation
 15:15–15:30, SB04.04

Development of Innovative Two-Dimensional Absolute Intensity Measurement System for Fluorescence Measurement of Biomolecules

Soichiro Shimoda Yokogawa Electric Corporation
 Toshio Iino Yokogawa Electric Corporation
 Takeo Tanaami Yokogawa Electric Corporation

15:30–15:45, SB04.05

Recovery of Micro Gas Sensor Array Response from Drift Effect by Means of DWT and Feature Extraction for Discriminating Gas Mixture

Sang Jin Lee Kyungpook National University
 Young Wung Kim Kyungpook National University
 Guk Hee Kim Kyungpook National University
 In Soo Lee Kyungpook National University

15:45–16:00, SB04.06

A Study of Efficient Power Generation by Utilizing Temperature Difference

Tetsuya Otaki Hosei University
 Kajiro Watanabe Hosei University
 Kazuyuki Kobayashi Hosei University
 Yosuke Kurihara Hosei University

SB05 Chang Chin Room (10F)
Vision Systems IV

Chair: Taro Suzuki Waseda University
 Chair: Ming-Tzu Ho National Cheng Kung University

14:30–14:45, SB05.01

A Study of Real-Time Path Planning for Mobile Robots Based on Environmental Recognition by Using Omni-Directional Images

Kosuke Hasegawa Hosei University
 Tomoyuki Ohkubo Hosei University
 Kazuyuki Kobayashi Hosei University
 Kajiro Watanabe Hosei University
 Yosuke Kurihara Seikei University

14:45–15:00, SB05.02

A Study of Visual Odometry for Mobile Robot Using Omni-Directional Camera

Takahito Nakada Hosei University
 Tomoyuki Ohkubo Hosei University
 Kazuyuki Kobayashi Hosei University
 Kajiro Watanabe Hosei University
 Yosuke Kurihara Seikei University

15:00–15:15, SB05.03

Vision Based Localization of a Small UAV for Generating a Large Mosaic Image

Taro Suzuki Waseda University

Yoshiharu Amano Waseda University
 Takumi Hashizume Waseda University
 15:15–15:30, SB05.04

Design and Implementation of a Stereo Vision-Guided Omnidirectional Mobile Robot for Real-Time Object Tracking

Sho-Tsung Kao National Cheng Kung University
 Chung-Yi Yen National Cheng Kung University
 Ming-Tzu Ho National Cheng Kung University

15:30–15:45, SB05.05

Three-dimensional Modeling of a Non-rigid Object Employing a Single Camera

Tsukasa Horinouchi Kyushu Institute of Technology
 Heewook Jung Kyushu Institute of Technology
 Joo Kooi Tan Kyushu Institute of Technology
 Hyongseop Kim Kyushu Institute of Technology
 Seiji Ishikawa Kyushu Institute of Technology

15:45–16:00, SB05.06

Omnidirectional Vision-based Robot Localization on Soccer Field by Particle Filter

Chia-Yang Chen Tamkang University
 Cheng-Yao Ho Tamkang University
 Ching-Chang Wong Tamkang University
 Hisayuki Aoyama The University of Electro-Communications

SB06 Song Bo Room (10F)
Healthcare and Welfare IV

Chair: Piyamas Suapang Rangsit University
 Chair: Ikuko Eguchi Yairi Sophia University

14:30–14:45, SB06.01

Tele-Care System for Man and Machine in Isolated Island

Kazuya Miura Nagasaki University
 Yoshitaka Yamaguchi Nagasaki University
 H. Nakashima Nagasaki University
 K. Endoh Nagasaki University
 T. Takakura Nagasaki University
 Yu Nakamura Nagasaki University
 S. Moromugi Nagasaki University
 Takakazu Ishimtsu Nagasaki University
 Motohiro Tanaka Nagasaki University

14:45–15:00, SB06.02

Web-based 3D Visualization and Interaction of Medical Data using Web3D

Sittapong Settapat Shibaura Institute of Technology
 Tiranee Achalakul King Mongkut's University of Technology Thonburi
 Michiko Ohkura Shibaura Institute of Technology

15:00–15:15, SB06.03

Sound Presentation Method for Touch Panels Regarding The Use of Visually Impaired People

Keiji Usui Sophia University
 Masamitsu Takano Sophia University
 Ikuko Eguchi Yairi Sophia University

15:15–15:30, SB06.04

Investigation of figure recognition with touch panel of visually impaired people from the perspective of braille proficiency

Kumi Naoe Sophia University
Masamitsu Takano Sophia University
Ikuko Eguchi Yairi Sophia University
15:30–15:45, SB06.05

A Web-based DICOM-Format Image Archive, Medical Image Compression and DICOM Viewer System for Teleradiology Application

Piyamas Suapang
King Mongkut's Institute of Technology Ladkrabang
Kobchai Dejhan
King Mongkut's Institute of Technology Ladkrabang
Surapun Yimmun
King Mongkut's University of Technology North Bangkok
15:45–16:00, SB06.06

Development of a Multi-Channel Wireless Medical Data Acquisition System

Wei Xu University of Surrey
Chun Liu Shenyang Aerospace University
Hong Wei University of Reading

SB07 101 (VF)
Robust Control

Chair: Masami Saeki Hiroshima University
Chair: Takao Fujii Fukui University of Technology
14:30–14:45, SB07.01

Effects Induced by Noncausality of Scaling on Robust Stability Analysis of Discrete-Time Periodically Time-Varying Systems

Yohei Hosoe Kyoto University
Tomomichi Hagiwara Kyoto University
14:45–15:00, SB07.02

A Search Method for a Fixed-Order Controller of H_2/H_∞ Control Problems

Masami Saeki Hiroshima University
Keisuke Kawanishi Sumitomo Metal Industries
Nobutaka Wada Tottori University
15:00–15:15, SB07.03

An Improved SOS-Based Stabilization Condition for Uncertain Polynomial Systems

Tanagorn Jennawasin Toyota Technological Institute
Tatsuo Narikiyo Toyota Technological Institute
Michihiro Kawanishi Toyota Technological Institute
15:15–15:30, SB07.04

Exact Robust \mathcal{H}_2 Performance Analysis for Linear Parameter Dependent Systems

Hiroko Fukumoto Kobe University
Yasumasa Fujisaki Kobe University
15:30–15:45, SB07.05

Inverse LQ Approach to Robust Stabilization of Linear Systems with Input Delay

Takao Fujii Fukui University of Technology
Sadaaki Kunimatsu Kumamoto University

Taro Tsujino Fukuoka Institute of Technology
15:45–16:00, SB07.06

On Robust Synthesis of Gain-Scheduled Controllers under Stochastic Measurement Noise on the Scheduling Parameter

Izumi Masubuchi Hiroshima University
Yoshihisa Fujimoto Hiroshima University

SB08 102 (VF)
Applications of Sliding Mode and T-S Fuzzy Control (Organized Session)

Organizer: Shun-Hung Tsai
National Taipei University of Technology
Chair: Shun-Hung Tsai
National Taipei University of Technology
Chair: Ming-Ying Hsiao Fortune Institute of Technology
14:30–14:45, SB08.01

Design of Simplex-Type Adaptive Sliding-Mode Controller

Ming-Ying Hsiao Fortune Institute of Technology
Chi-Hua Liu Fortune Institute of Technology
Shun-Hung Tsai National Taipei University of Technology
Ta-Tau Chen Kun Shan University
Shun-Tsai Liu Fortune Institute of Technology
14:45–15:00, SB08.02

Design of Simplex-Type Adaptive Fuzzy Sliding-Mode Controller

Ta-Tau Chen Kun Shan University
Ming-Ying Hsiao Fortune Institute of Technology
Chi-Hua Liu Fortune Institute of Technology
Shun-Hung Tsai National Taipei University of Technology
Chih-Chia Fan National Taipei University of Technology
Chih-Hsiang Chang National Taipei University of Technology
Chan-Hong Chao National Cheng Kung University
15:00–15:15, SB08.03

Composite Observer-Based Feedback Design for Singularly Perturbed Systems via LMI Approach

Kuo Jung Lin Fortune Institute of Technology
15:15–15:30, SB08.04

Simplex-Type Sliding-Mode Control for A Class of Linear Discrete-Time Systems

Ta-Tau Chen Kun Shan University
Ming-Ying Hsiao Fortune Institute of Technology
Chi-Hua Liu Fortune Institute of Technology
Shun-Hung Tsai National Taipei University of Technology
Tzu-Ming Huang Fortune Institute of Technology
15:30–15:45, SB08.05

Model Reference T-S Fuzzy Tracking Control in an Eccentric Mechanism

Chin-Sheng Chen National Taipei University of Technology
Shun-Hung Tsai National Taipei University of Technology

SB09 103 (VF)
Genetic Network Programming II

Chair: Shingo Mabu Waseda University
Chair: Yan Chen Waseda University

14:30–14:45, SB09.01

Face Recognition using PCA with GNP-Fuzzy Data Mining

Deng Zhang	Waseda University
Shingo Mabu	Waseda University
Karla Taboada	Waseda University
Feng Wen	Waseda University
Kotaro Hirasawa	Waseda University

14:45–15:00, SB09.02

Enhancing Global Portfolio Optimization using Genetic Network Programming

Victor Parque	Waseda University
Shingo Mabu	Waseda University
Kotaro Hirasawa	Waseda University

15:00–15:15, SB09.03

Trading Rules on Stock Markets Using Genetic Network Programming with Subroutines

JianHua Li	Waseda University/Shanghai University
QinBiao Meng	Waseda University
Yang Yang	Waseda University
Shingo Mabu	Waseda University
Yifei Wang	Shanghai University
Kotaro Hirasawa	Waseda University

15:15–15:30, SB09.04

Automatic Program Generation with Genetic Network Programming using Subroutines

Bing Li	Waseda University
Shingo Mabu	Waseda University
Kotaro Hirasawa	Waseda University

15:30–15:45, SB09.05

Generating Trading Rules on the Stock Markets with Robust Genetic Network Programming Using Variance of Fitness Values

Yan Chen	Waseda University
Kotaro Hirasawa	Waseda University

SB10	104 (VF)
Manufacturing Systems and System Development Support	

Chair: Masafumi Miwa	The University of Tokushima
Chair: Yoichi Shiraishi	Gunma University

14:30–14:45, SB10.01

MDA Development of Manufacturing Execution System Based on Automatic Code Generation

Kenji Mizuoka	Kyushu Institute of Technology
Masanobu Koga	Kyushu Institute of Technology

14:45–15:00, SB10.02

Embedded Program Development Environment for Windshield Wiper Controller

Yong Zhe Chu	Gunma University
Masaya Nishikawa	Gunma University
Mona Abo El Dahb	Gunma University
Yoichi Shiraishi	Gunma University
Takanori Saito	Realize Computer Engineering, co., ltd.

15:00–15:15, SB10.03

Evaluation of Remote Control Support System for R/C Helicopter

Masafumi Miwa	The University of Tokushima
Kentaro Kinohita	The University of Tokushima
Kenichi Tokuda	Wakayama University

15:15–15:30, SB10.04

A Uniform Laser Energy Control for Ceramic Sintering Rapid Prototyping

Stephen P. Tseng	National Taipei University of Technology
Hwa-Hsing Tang	National Taipei University of Technology

15:30–15:45, SB10.05

Simulation based Design for Inverter Power Supply

Mona Abo El Dahb	Gunma University
Yoichi Shiraishi	Gunma University
Shoji Tatsuno	Tokyo Seiden, co., ltd

15:45–16:00, SB10.06

Development of a SOFC Dynamic Simulation Environment

Yousuke Iida	Yamatake Corporation
Kenji Otsuka	Yamatake Corporation
Yousuke Komatsu	Shibaura Institute of Technology
Shinji Kimijima	Shibaura Institute of Technology

SB11	105 (VF)
Sensors and Transducers	

Chair: Masahiro Tanaka	Konan University
Chair: Hiroo Wakaumi	

Tokyo Metropolitan College of Industrial Technology

14:30–14:45, SB11.01

Development of Traffic Counters by Laser Range Scanners

Masahiro Tanaka	Konan University
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14:45–15:00, SB11.02

An Advanced Laser Rangefinder Equipped with a Scanning Simulator

Ohtani Kozo	Hiroshima Institute of Technology
Yamamoto Shin	Hiroshima Institute of Technology
Li Li	Ibaraki University
Baba Mitsuru	Ibaraki University

15:00–15:15, SB11.03

A High-Density Ternary Barcode Detection System with a Fixed Period Delay Method

Hiroo Wakaumi	
	Tokyo Metropolitan College of Industrial Technology

15:15–15:30, SB11.04

3D Reconstruction of Reflective Surface on Reflection Type Tactile Sensor Using Constraints of Geometrical Optics

Ryosuke Taira	Tohoku University
Satoshi Saga	Tohoku University
Takayuki Okatani	Tohoku University
Koichiro Deguchi	Tohoku University

15:30–15:45, SB11.05

Position and Orientation Sensor for Two-Dimensional Communication Network

Kei Nakatsuma	The University of Tokyo
Hiroyuki Shinoda	The University of Tokyo

15:45–16:00, SB11.06

Enhanced Differential Voltage-to-Frequency Converter for Telemetry Applications

Amphawan Julsereewong
King Mongkut's Institute of Technology Ladkrabang
Wandee Petchmaneelumka
King Mongkut's Institute of Technology Ladkrabang

SB12 107 (VF)
Recent Progress in Mechanical Metrology II (Organized Session)

Organizer: Yoshitaka Morimoto
Kanazawa Institute of Technology

Chair: Tokihiko Kobata AIST

Chair: Masaaki Ueki AIST

14:30–14:45, SB12.01

Evaluation of stroke and force of enlargement mechanism

Yoshitaka Morimoto Kanazawa Institute of Technology

Okada Suguru Kanazawa Institute of Technology

14:45–15:00, SB12.02

Variable speed control of hydraulically driven weight stacks in the 540 kN force standard machine

Toshiyuki Hayashi AIST

Yoshihisa Katase AIST

Hiroshi Maejima AIST

Yukio Yamaguchi AIST

Kazunaga Ueda AIST

15:00–15:15, SB12.03

Introduction to Research Activities on Traceable Force Measurements below 10 micronewton in Center for Measurement Standards

Sheng-Jui Chen Industrial Technology Research Institute

Sheau-Shi Pan Industrial Technology Research Institute

15:15–15:30, SB12.04

Improvement of Formability by Servo Die Cushion in Deep Drawing

Akihiro Watanabe Gunma University

Hisaki Watari Gunma University

Yuji Kotani Gunma Industrial Technology Center

Takehiro Shimizu Komatsu Industries Corporation

Takanori Yamazaki Oyama National College of Technology

15:30–15:45, SB12.05

The Design and Characteristic Study of a 3-dimensional Piezoelectric Nano-Positioner

Yu-Chi Wang National Chiao Tung University

Li-Kang Chen National Chiao Tung University

Shao-Kang Hung National Chiao Tung University

15:45–16:00, SB12.06

Combination of VCA based Micro Force Generator and Micro Robot for Micro Hardness and Stiffness Test

Montree Pakkratoke The University of Electro-Communications

Natchapon Luekiatphaisan The University of Electro-Communications

Hisayuki Aoyama The University of Electro-Communications

SB13 108 (VF)
Modeling and System Identification II

Chair: Hiroshi Harada Kumamoto University

Chair: Pau-Lo Hsu National Chiao-Tung University

14:30–14:45, SB13.01

An Application of System Identification Theory to the Ultrasound Doppler Image Processing System

Tatsuro Baba Toshiba Medical Systems Corp.

Fumiya Mukai Keio University

Shuichi Adachi Keio University

Naohisa Kamiyama Toshiba Medical Systems Corporation

14:45–15:00, SB13.02

A Method for On-line Identification of Mechanical System by Use of M-sequence

Yukio Toyozawa FANUC Corp.

Naoto Sonoda FANUC Corp.

Hiroshi Harada Kumamoto University

Hiroshi Kashiwagi

15:00–15:15, SB13.03

The Identification of the Magnetic Bearing System with the Real Coded Genetic Algorithm

HwangHun Jeong Korea Institute of Machinery & Materials

JooHo Yang Pukyong National University

YoungBok Kim Pukyong National University

SoNam Yun Korea Institute of Machinery & Materials

15:15–15:30, SB13.04

Embedded Spectrum Identification for Lightly-Damped Systems

Wei-Chih Hsu National Chiao-Tung University

Chien-Liang Lai National Chiao-Tung University

Wei-Sheng Huang National Chiao-Tung University

Pau-Lo Hsu National Chiao-Tung University

15:30–15:45, SB13.05

Radial Quantization Method for Just-In-Time Approach

Atsushi Kidono Keio University

Shuichi Adachi Keio University

15:45–16:00, SB13.06

Model Reduction of Biochemical Networks

Chun-Liang Lin National Chung Hsing University

Yen-Chang Liu National Chung Hsing University

SB14 109 (VF)
Inverse Problems II (Organized Session)

Organizer: Kenbu Teramoto Saga University

Chair: Tadashi Ito Gunma University

Chair: Kenbu Teramoto Saga University

14:30–14:45, SB14.01

Two-dimensional Localization of a Magnetic Dipole from its First Order Fourier Coefficients of the Magnetic Flux Density

Takaaki Nara The University of Electro-Communications

Yuushi Takanashi The University of Electro-Communications

Hirotohi Watanabe The University of Electro-Communications

14:45–15:00, SB14.02

Source Reconstruction with Spatial Filter and Reduction of Artifacts in Fluorescence/Bioluminescence Diffuse Optical Tomography

Shinpei Okawa The University of Electro-Communications
Yukio Yamada The University of Electro-Communications

15:00–15:15, SB14.03

Show-through Cancellation in Scanned Images of Thick-printed Documents

Kousuke Kojima Shibaura Institute of Technology
Masanobu Takahashi Shibaura Institute of Technology

15:15–15:30, SB14.04

Electrical Capacitance Tomography System for Monitoring Process Flow in Pipe

Apinai Rerkratn
King Mongkut's Institute of Technology Ladkrabang
Kitiphol Chitsakul
King Mongkut's Institute of Technology Ladkrabang
Anek Soisup
King Mongkut's Institute of Technology Ladkrabang
Virot Wuti King Mongkut's Institute of Technology Ladkrabang

SB15 110 (VF)
Nexus System Design: New Interaction among Humans, Agents, and Robots II (Organized Session)

Organizer: Keiki Takadama
The University of Electro-Communications
Chair: Keiki Takadama
The University of Electro-Communications
Chair: Katsunori Shimohara Doshisha University

14:30–14:45, SB15.01

Harmonic Pulse Analysis to detect biologically plausible gene regulatory networks

Tetsuya Maeshiro University of Tsukuba
Shin-ichi Nakayama University of Tsukuba

14:45–15:00, SB15.02

Threshold Learning in the Improved Penalty Avoiding Rational Policy Making Algorithm

Kazuteru Miyazaki
National Institution for Academic Degrees and University Evaluation
Ryouhei Kobayashi Hitachi Engineering & Service Co. Ltd.
Hiroaki Kobayashi Meiji University

15:00–15:15, SB15.03

Automatic Tuning of Judgement Parameter in Continuous State Exploitation-oriented Learning

Miyazaki Kazuteru
National Institution for Academic Degrees and University Evaluation

15:15–15:30, SB15.04

Scene Evaluation of a Ball Game for Solving Batting Order Optimization

Yuya Kakui Chiba University
Sachiyo Arai Chiba University

15:30–15:45, SB15.05

Towards Care Plans of Aged Person by Multi-Objective Optimization

Tomohiro Shimada University of Electro Communications
Hiroyasu Matsushima University of Electro Communications
Hiroyuki Sato University of Electro Communications
Kiyohiko Hattori University of Electro Communications
Keiki Takadama University of Electro-Communications

SB17 Fu-Chuon Room (BF)
Biomimetic Approach in Robotics and Machines (Organized Session)

Organizer: Kiyotaka Izumi Saga University
Chair: Kiyotaka Izumi Saga University

14:30–14:45, SB17.01

Visual Feedback Robot System via Fuzzy Control

Kyouhei Sakai Kansai University
Yutaka Maeda Kansai University
Seiji Miyoshi Kansai University
Hiroomi Hikawa Kansai University

14:45–15:00, SB17.02

Visual Servoing with Quick Eye-Vergence to Enhance Trackability and Stability

Fujia Yu Fukui University
Wei Song University of Shanghai
Mamoru Minami Okayama University

15:00–15:15, SB17.03

A Formation Method for Heterogeneous Multiple Robots by Specifying the Relative Position of Each Robot

Tatsuya Kato Okayama University
Keigo Watanabe Okayama University
Shoichi Maeyama Okayama University

15:15–15:30, SB17.04

A Switching Control Method for Stabilizing a Nonholonomic Mobile Robot Using Invariant Manifold Method

Takahiro Yamamoto Okayama University
Keigo Watanabe Okayama University

SB18 Der-Hou Room East (BF)
Advances in System Integration

Chair: Ruilin Lin Chienkuo Technology University
Chair: Kai Essig Bielefeld University

14:30–14:45, SB18.01

Anti-theft Thermal Box for Dairy Bottles

Ruilin Lin Chienkuo Technology University
Jingchen Xie Chienkuo Technology University

14:45–15:00, SB18.02

The Design of a Display Device for Swimming Caps

Ruilin Lin Chienkuo Technology University
Jingchen Xie Chienkuo Technology University

15:00–15:15, SB18.03

Projection and Least Square Fitting with Perpendicular Offsets based Vehicle License Plate Tilt Correction

Kaushik Deb University of Ulsan

Andrey Vavilin University of Ulsan
Jong-Won Kim University of Ulsan
Taeho Kim University of Ulsan
Kang-Hyun Jo University of Ulsan

15:15–15:30, SB18.04

Development of Contact-type Alcohol Checking System

Yasufumi Hamada Hosei University
Kajiro Watanabe Hosei University
Kazuyuki Kobayashi Hosei University
Yousuke Kurihara Hosei University

15:30–15:45, SB18.05

A Position-Variied Plate Utilized for a Thai License Plate Recognition

Adisorn Leelasantitham University of the Thai Chamber of Commerce
Supaporn Kiattisin University of the Thai Chamber of Commerce

15:45–16:00, SB18.06

Full-Automatic Annotation of Scene Videos — Establish Eye Tracking Effectively in Various Industrial Applications

Kai Essig Bielefeld University
Norbert Sand Bielefeld University
Joern Kuensemoeller Bielefeld University
Matthias Weigelt Saarland University
Helge Ritter Bielefeld University
Thomas Schack Bielefeld University

Chih-Min Lo Chung Chou Institute of Technology
Sun-Jen Huang National Taiwan University of Science and Technology
15:30–15:45, SB19.05

Applied Object-Oriented Programming Technology to ICT Application Development

Chih-Min Lo Chung Chou Institute of Technology
Sun-Jen Huang National Taiwan University of Science and Technology

SB19 Der-Hou Room East (BF)
Nonlinear Control and Information Systems (Organized Session)

Organizer: Fu-Kuang Yeh Chung Chou Institute of Technology
Chair: Fu-Kuang Yeh Chung Chou Institute of Technology
Chair: Chao-Shu Liu National Kaohsiung University of Applied Sciences

14:30–14:45, SB19.01

Adaptive-Sliding-Mode Semi-Active Bicycle Suspension Fork

Fu-Kuang Yeh Chung Chou Institute of Technology
Jian-Ji Huang Chung Chou Institute of Technology
Chia-Wei Huang Chung Chou Institute of Technology

14:45–15:00, SB19.02

Fuzzy Sliding-Mode Control for a Mini-UAV

Fu-Kuang Yeh Chung Chou Institute of Technology
Ching-Mu Chen Chung Chou Institute of Technology
Jian-Ji Huang Chung Chou Institute of Technology

15:00–15:15, SB19.03

A Manifold Deformation Design Scheme for the Controls of Non-linear Systems

Chao-Shu Liu National Kaohsiung University of Applied Sciences
Chao Chung Liu Chung Chou Institute of Technology

15:15–15:30, SB19.04

Embedded Control System Development Using UML for Automatic Doors