

ICAM 2021 Program

Date	Time (JST/GMT+9:00)	Session
2021/7/1 (Thu.)	9:00-	Opening
	9:10-	OS-1(7)
	10:50-	GS-1(5)
	12:00-	Lunch time
	13:00-	Plenary Talk
	14:10-	GS-2(5)
	15:20-	GS-3(5)
	16:30-	GS-4(5)
2021/7/2 (Fri.)	9:00-	OS-2A(6)
	10:20-	OS-2B(5)
	11:30-	GS-5(3)
	12:10-	Lunch time
	13:00-	GS-6(5)
	14:10-	GS-7(5)
	15:20-	GS-8(5)
	16:30-	Award/Closing

Session	Time	Title	Authors
<b>OS-1</b> Recent Advances in Micro/Nano Robotics  <b>Chair</b> Ebubekir Avci Hisataka Maruyama	09:10 - 09:22	Fluorescent pH Measurement without Initial pH Value Using Reference Sensor for Local Environment Measurement	Hisataka Maruyama and Fumihito Arai
	09:23 - 09:35	High Purity Single Cell Isolation System Using Open Microfluidic Chip and a Holding Pipette	Ruixuan Weng, Di Chang, Bilal Turan, Taisuke Masuda and Fumihito Arai
	09:36 - 09:48	Noncontact Manipulation of Microdroplets using High-Speed Spatiotemporal Ejection Control	Hayato Yoshimura and Tomohiro Kawahara
	09:49 - 10:01	Precise control of magnetized macrophage cell robot for targeted drug delivery	Luyao Wang, Yuguo Dai, Hongyan Sun and Lin Feng
	10:02 - 10:14	Flow Driven Robotic Navigation of Endovascular Microscopic Devices	Lucio Pancaldi and Mahmut Selman Sakar
	10:15 - 10:27	Measurement of Contractile Force of Artificial Muscle using Soft Sensor for Feedback Control of bio-actuator	Eunhye Kim, Masaru Takeuchi, Takuto Nomura, Koki Oguri, Ryosuke Ohira and Toshio Fukuda
	10:28 - 10:40	Mechanical Characterisation of Robotic Capsule Anchoring Mechanism for Gastrointestinal Tract	Andrew Yeo, Muhammad Rehan and Ebubekir Avci
<b>GS-1</b> Applications in Robotics and Mechatronics  <b>Chair</b> Tsuyoshi Tasaki Kenjiro Tadakuma	10:50 - 11:02	Updating Points Detection by Estimating Depth Map to Update Map	Hiroto Nakashima and Tsuyoshi Tasaki
	11:03 - 11:15	Pose Sensing for Flexible Arms using Optical Fibers	Tatsuhiko Hiramitsu, Shogo Izumi, Tokuo Tsuji and Hiroaki Seki
	11:16 - 11:28	Development of Hammering Test Robot for Labor-Saving Inspection	Takeshi Mizuguchi, Chunhe Li and Geunho Lee
	11:29 - 11:41	Development of an Interplant Weeding Robot	Takumi Tamamoto, Kei Sawai, Takayuki Nakata, Chiaki Kojima and Yuki Okura
	11:42 - 11:54	Ranked-trajectory based recursive inverse reinforcement learning for extrapolation of reward function	Takashi Aota and Gakuto Masuyama
<b>Plenary Talk</b>  <b>Chair</b> Kenichi Ohara	13:00-14:00	Advanced Mechatronic Systems: From Service Robots to Medical Robots	Prof. Max Meng
<b>GS-2</b> Mobile Robot  <b>Chair</b> Satoki Ogiso Susumu Hara	14:10 - 14:22	Flying Robot Production Programs for Comprehensive Understanding of Mechanical and Aerospace Engineering - Coordinated Action of Nagoya and Gifu National Universities-	Susumu Hara, Yu Aoi, Kazuhide Kuroda, Hiromitsu Kawazoe, Satoshi Ito, Tsubasa Toguchi and Kazuaki Ito
	14:23 - 14:35	Driving Properties of Omnidirectional Mobile Robot Using Active Dual-wheel Caster Capable of Unlimitedly Turning	Hiroki Shimizu, Kazuyuki Iwanaga and Naoyuki Takesue
	14:36 - 14:48	Development of Aquatic Robot with Four Fins for Underwater Environment with Floating Objects	Mao Ichimura, Yu Ueda and Naoyuki Takesue
	14:49 - 15:01	Development of an Underwater Robot that Realizes Invisibility with Ubiquities Environmental Objects	Makoto Shimanokami, Masaki Yurugi, Jun Shintake and Yusuke Ikemoto
	15:02-15:14	Development and Control of Unmanned Floating Observer (UFO) Inspection of Irrigation Tunnel and Canal	Taiga Yokota, Yasunari Fujimoto, Ryota Inoue, Cheng Tang, Weihong Chin, Naoyuki Kubota, Naoyuki Takesue, Shinichi Takarabe, Koji Shin and Yoshiyuki Okiyasu
<b>GS-3</b> Medical and Welfare Systems  <b>Chair</b> Tomohiro Shibata Jumpei Arata	15:20 - 15:32	Bilateral Control System with MR Fluid Based Haptic Interface for Endoscopic Surgery	Tetsumasa Takano, Akinori Yamaguchi, Asaka Ikeda, Isao Abe and Takehito Kikuchi
	15:33 - 15:45	Light weight Multi-layered Discal MR Fluid Clutch for Handheld Haptic Device	Akinori Yamaguchi, Tetsumasa Takano, Asaka Ikeda, Isao Abe and Takehito Kikuchi
	15:46 - 15:58	Cough Classification and Recognition with Mel-Frequency Cepstral Coefficients and Gaussian-type Evaluation Function	Azumi Okubo and Takehito Kikuchi
	15:59 - 16:11	A Framework for a Smart Walker System with Voice-based Virtual Assistant, Actuators & Sole Sensor for Rehabilitation Monitoring	Abdul Ali, John Noel Victorino, Raul Ariel Duran Jimenez and Tomohiro Shibata
	16:12 - 16:24	Development of Multi-DOF Forceps Comprised of a Monolithic Compliant Structure for Endoluminal Surgery	Keisuke Osawa, Sanjaya V. Bandara, Ryu Nakadate, Yoshihiro Nagao, Tomohiko Akahoshi, Masatoshi Eto and Jumpei Arata
<b>GS-4</b> Fundamental Technology and Education for Robotics and Mechatronics  <b>Chair</b> Yusuke Ikemoto Naoyuki Takesue	16:30 - 16:42	Anomalous object detection by multiple viewpoint	Shotaro Nakajima, Yohei Kameda and Tsuyoshi Tasaki
	16:43 - 16:55	Experiment of Vibration Damping Transport of A Translational 1D Overhead Crane under Open-loop Finite-Time-Settling Control	Daiki Nishida, Shota Hirai and Shigeo Kotake
	16:56 - 17:08	Feasible Study of building VR Online class for education with face recognition by deep learning	Kaito Murauchi, Junji Sone and Katsumi Yamada
	17:09 - 17:21	Robust Indoor Localization in Reverberant Environment using Cross Correlation Functions as Time-of-Arrival Likelihood	Kinari Umemura and Satoki Ogiso
	17:22 - 17:34	Simulation of an Analog Circuit Imitating a Three-vibro-impact System	Yuta Kitagawa, Shigeo Kotake and Yasuyuki Suzuki

Session	Time	Title	Authors
<b>OS-2A</b> Real Space Service System  <b>Chair</b> Kazuyoshi Wada Mihoko Niitsuma	09:00 - 09:12	Gudermannian Function-Based Observation for Standing/Sitting Behaviors	Takahiro Fukudome, Geunho Lee and Naohisa Togami
	09:13 - 09:25	Relationship between Object Pose Estimation Accuracy and Object Labeling	Kazuhisa Matsumoto and Tsuyoshi Tasaki
	09:26 - 09:38	Motion Planning for Redundant Robots Based on Geometrical Properties of Initial and Goal Configuration	Masanori Sekiguchi and Naoyuki Takesue
	09:39 - 09:51	WPT-Robot: Improving Practicality of An Automatic Power Management System - Downsized Positioning Module and Transmission Coil -	Toshiya Mitsuhashi, Shimon Ajsaka and Sousuke Nakamura
	09:52 - 10:04	Development of a restroom floor cleaning robot equipped with a deformable roller mechanism	Sota Tezuka, Kazuyoshi Wada and Tetsuo Tomizawa
	10:05 - 10:17	Scenario Transition System for Multi-Robot Improvisation Theater	Kenya Umetsu, Rino Kaburagi, Wei Hong Chin and Naoyuki Kubota
<b>OS-2B</b> Real Space Service System  <b>Chair</b> Sousuke Nakamura Kenichi Ohara	10:20 - 10:32	Human Following Robot System by Virtual Connected Vehicle Model and Estimation Human Posture with Scanning Rangefinder	Fumiaki Takemori and Hiroya Furue
	10:33 - 10:45	Development of Visual Marker Module for Intelligent Shelf	Kazufumi Kobayashi, Riki Oda and Kenichi Ohara
	10:46 - 10:58	Q-bot Alto: A Robot Reaching Tall for In-house Logistics based on Jamming Tactile Sensing	Toshihiko Shimizu, Ryotaro Yamamura, Michikuni Eguchi and Shunya Hara
	10:59 - 11:11	Research on stable coordinated driving for active casters	Chikaho Taniguchi, Takamasa Terai and Kenichi Ohara
	11:12 - 11:24	Development of Communication Ports that Simulate CSP Channels in a Distributed Component Framework	Nobuhiko Miyamoto, Yoshinao Isobe and Noriaki Ando
<b>GS-5</b> Human-Robot Collaboration  <b>Chair</b> Takehito Kikuchi	11:30 - 11:42	Proposal of new navicular index to assess flat foot	YuEn Sung, Isao Abe and Takehiko Kikuchi
	11:43 - 11:55	Flexible arm control using a finite time settling function that enables simultaneous damping rotation of two vibration modes	Yuya Shibata, Kazuma Miura and Shigeo Kotake
	11:56 - 12:08	Functional Examination of Agricultural Caring Robot in Organic Farming	Manabu Kawaguchi and Naoyuki Takesue
<b>GS-6</b> Mechanism and Control  <b>Chair</b> Koichi Koganezawa Gen Endo	13:00 - 13:12	Modular Artificial fingers with Variable Stiffness Mechanism using Single & Double Planetary Gear Systems and an application to 3 fingers robot hand	Yuma Eto, Kanta Akiyoshi and Koichi Koganezawa
	13:13 - 13:25	Development of Flapping-wing Robot with Independently Controllable Wings	Hidaka Sato, Muhammad Labiyb Afakh and Naoyuki Takesue
	13:26 - 13:38	Investigation of a gait to body stiffness variations for tensegrity-spine quadruped robot	Yusuke Hayashi, Koji Onishi, Jun Shintake and Yusuke Ikemoto
	13:39 - 13:51	Full Time Two-Leg Drive Bipedal Robot: Analysis of Gait Pattern Generations Under Constraints of Reaction Forces Equality	Kouki Isomura, Gakuto Fujioka, Keijiro Sakai and Yusuke Ikemoto
	13:52 - 14:04	Evaluation of Compliant Robot Arm with Quasi-DD Motor and Gravity Compensation Mechanism	Kota Iizuka, Ryotaro Suzuki, Naoyuki Takesue, Shinya Tokunaga, Toshiki Fukasawa and Akira Yamamoto
<b>GS-7</b> Sensor and Measurement  <b>Chair</b> Junichi Meguro Takumi Tamamoto	14:10 - 14:22	Improvement of anomalous object detection by estimating depth map from color image	Rikuto Teranishi, Yohei Kameda and Tsuyoshi Tasaki
	14:23 - 14:35	3D Point Cloud Construction with Absolute Positions Using SLAM based on RTK-GNSS	Junta Matsuo, Kaito Kondo, Takaya Murakami, Tomoya Sato, Yuki Kitsukawa and Junichi Meguro
	14:36 - 14:48	Evaluating the relationship between gyro performance and vehicle trajectory accuracy in a dynamic environment	Yoshiki Atsumi, Kaito Kondo, Sora Yasue, Yuta Hoda and Junichi Meguro
	14:49 - 15:01	Position and orientation estimation method using independent RTK-GNSS measurements	Masaya Sato, Tomohito Takubo and Atsushi Ueno
	15:02 - 15:14	Development of 2.5D map for an environment with slopes	Ryusei Tomikawa and Kenichi Ohara
<b>GS-8</b> Robot Vision  <b>Chair</b> Kazunori Umeda Yasushi Mae	15:20 - 15:32	Background Replacement for Robust Grasp Detection	Yusuke Ibuki and Tsuyoshi Tasaki
	15:33 - 15:45	Performance Classification of GNSS Using Convolutional Neural Network with Binarized Images	Tatsuya Amemiya, Junichi Meguro and Tsuyoshi Tasaki
	15:46 - 15:58	Improvement of Dynamic Object Detection by Uncertainty Maps and Geometric Features	Keisuke Urasaki and Tsuyoshi Tasaki
	15:59 - 16:11	Absolute Scaled 3D Measurement Using Monocular Camera Based on the Augmentation of Translation and Depth	Ryota Yamamura, Takatomo Takahashi and Tsuyoshi Tasaki
	16:12 - 16:24	Estimating deformation of pipe from its internal image	Kaito Kosuge, Akira Oyama, Hiroto Sato, Kosuke Uchiyama, Taro Nakamura and Kazunori Umeda