

2026 IEEE/SICE International Symposium on System Integration (SII 2026)

**Cancun, Mexico
11-14 January 2026**

Pages 1-577



**IEEE Catalog Number: CFP26SST-POD
ISBN: 978-1-6654-5785-9**

**Copyright © 2026 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP26SST-POD
ISBN (Print-On-Demand):	978-1-6654-5785-9
ISBN (Online):	978-1-6654-5784-2
ISSN:	2474-2317

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Evaluating the Out-Of-Distribution Generalization of Robot Diffusion Policies Under the DINOv2 Visual Encoder	1
<i>Angel Montejo, Inigo Iturrate</i>	
Expert-Guided Imitation for Learning Humanoid Loco-Manipulation from Motion Capture	7
<i>Rohan P. Singh, Pierre-Alexandre Leziart, Masaki Murooka, Mitsuharu Morisawa, Eiichi Yoshida, Fumio Kanehiro</i>	
XRoboToolkit: A Cross-Platform Framework for Robot Teleoperation.....	15
<i>Zhigen Zhao, Liuchuan Yu, Ke Jing, Ning Yang</i>	
Arterial Simulator with Configurable Pulse Wave Velocity for Quantitative Tracheal Endoscopic Image Measurement	21
<i>Tomohiro Sueishi, Makoto Komura, Masatoshi Ishikawa</i>	
Learning Diffusion Policies from Demonstrations for Compliant Contact-Rich Manipulation.....	28
<i>Malek Aburub, Cristian C. Beltran-Hernandez, Tatsuya Kamijo, Masashi Hamaya</i>	
Feature-Conditioned Reinforcement Learning for Generalizable Engineering Optimization: Benchmarking on Multimodal Test Functions.....	35
<i>Varun S. Chavan, Mitsuru Endo, Zexin Shan, Yukio Tsutsui</i>	
Can Policy Learning with Time Limits Be Used for Contact-Rich Industrial Manipulation?.....	43
<i>Bharat Singh, Jack Kilpatrick, Sebastian Joya-Paez, Ryo Hanai, Ixchel G. Ramirez-Alpizar, Natsuki Yamanobe, Yukiyasu Domae</i>	
Learning Dynamic Non-Prehensile Object Reorientation Via Reinforcement Learning.....	50
<i>Abdullah Mustafa, Ryo Hanai, Ixchel G. Ramirez-Alpizar, Floris Erich, Ryoichi Nakajo, Yukiyasu Domae, Tetsuya Ogata</i>	
Development of a Software Platform for Software-Defined Robot	56
<i>Nobuhiko Miyamoto, Noriaki Ando, Yasuharu Kunii</i>	
Development of Miniature Model of Container Crane for Remote Operation and Automation	62
<i>Rintaro Ozaki, Naoyuki Takesue, Fukiko Kawai</i>	
Development of a Product Recognition and Task Planning System for a Shelf-Stocking Robot.....	68
<i>Tomohiro Hosokawa, Kaname Yamauchi, Maria Masuda, Masashi Seki, Kazuyoshi Wada</i>	
Mobile Manipulation System for In-Store Product Stocking, Disposal, and Customer Detection with Minimal Environment Modification.....	74
<i>Ryusei Sawada, Ryota Nakamura, Asahi Miyaji, Kousuke Shimizu, Koki Sunaga, Koji Aikawa, Kyohei Fujita, Ryunosuke Maruta, Shota Nakajima, Mihoko Niitsuma</i>	
Semantic-Aware Obstacle Tracking and Avoidance for Ceiling-Mounted Healthcare Robots.....	80
<i>Marco Masannek, Rolf Schmidt, Andreas Deinlein, Thorsten Gecks, Stefan May, Andreas Nuchter</i>	
Mobile Robot Motion Planning Based on Time-Delay CNN with Open-Space Image Inputs for Multi-Obstacle Avoidance	88
<i>Kenji Shibata, Satoshi Hoshino</i>	

Moving Obstacle Avoidance Using MPPI Based on Cost Maps Considering Velocity and Predicted Poses.....	95
<i>Yuuka Iwamura, Yoshitaka Hara, Yoji Kuroda</i>	
Collision Avoidance in Healthcare Robotics Using mm-Wave Radar Fusion: A Hygienic and Fail-Safe Approach	101
<i>Rolf Schmidt, Marco Masannek, Andreas Deinlein, Verena Schmidt, Stefan May, Andreas Nuchter</i>	
Vibrotactile Feedback Enhancement for Polishing Tasks: A Perceptual Study of Signal Deformation Strategies	109
<i>Amane Tamada, Shogo Sakairi, Natsuki Hayami, Naruhiro Mega, Rie Nishihama, Takako Yoshida, Taro Nakamura, Manabu Okui</i>	
Exploring Perceptual Effects of Phase Spectra in Vibrotactile Rendering	116
<i>Takumi Kuhara, Akifumi Kawai, Yuto Inoue, Hikari Yukawa, Yoshihiro Tanaka</i>	
Team Sports Coaching System Using Vibrotactile Feedback.....	122
<i>Jose Victorio Salazar Luces, Ankit A. Ravankar, Masahiro Shiratori, Yasuhisa Hirata</i>	
Handheld Haptic Grip Integrating Vibrotactile and Robotic-Touch Interfaces for Turn-By-Turn Pedestrian Navigation*.....	130
<i>Ryo Eguchi, Ryo Yonetani</i>	
Identifying Bottlenecks in Student Learning Using Eye Tracking Measurements in Lathe Operation Training	137
<i>M. Kimizuka, Y. Ito, H. Saito, D. Chugo</i>	
Musculoskeletal Analysis Focusing on the Gait of Small Dogs Walking on Slippery Wooden Floors	143
<i>Daisuke Chugo, Shijian Li, Satoshi Muramatsu, Sho Yokota, Jinhua She, Hiroshi Hashimoto, Takashi Uemura, Hiroaki Kamishina, Yoshiharu Hata, Takayuki Yamada, Takahiro Uchida</i>	
Modeling and Evaluation of Soft Gears for Wearable Robots.....	149
<i>Takeshi Kido, Keisuke Osawa, Kiyotaka Ikejo, Akio Ueda, D.S.V Bandara, Jumpei Arata, Eiichiro Tanaka</i>	
Estimating Wrist Joint Angle Using Electromyography and Cepstral Coefficients.....	155
<i>Sougo Horimatsu, Kensuke Takenaka, Takayuki Mukaeda, Keisuke Shima</i>	
Tactile-Based Active Inference for Force-Controlled Peg-In-Hole Insertions.....	161
<i>Tatsuya Kamijo, Ixchel G. Ramirez-Alpizar, Enrique Coronado, Gentiane Venture</i>	
Co-Design of Neural and Muscle Network Based on Embodied Perceptron Representation	167
<i>Siyuan Tao, Yoichi Masuda, Hiroyuki Nabae, Masato Ishikawa</i>	
Spectral-To-Spatial Distillation: Denoising Framework for Real-Time Anomalous Sound Detection	173
<i>Koki Shoda, Jun Younes Louhi Kasahara, Takuya Igaue, Shinji Kanda, Hajime Asama, Qi An, Atsushi Yamashita</i>	
Warm-Stamping Mechanical Behavior and Microstructural Characterization of Al-Si Metal Sheets Using Water Refrigerated Tooling.....	181
<i>Estrada-Warn P, Garcia-Santibanez GJ, Jauregui-Pablos M, Vazquez-Gomez-Orduna S, Gonzalez-Ojeda R</i>	
Fault-Tolerant Quadcopter Control Integrating Dynamic Equilibrium Analysis and Nonlinear Model Predictive Control	186
<i>Daisuke Muroki, Yuta Asano, Takumi Noro, Takeya Shima, Toshiyuki Ohtsuka</i>	

Data-Driven Dynamic Parameter Learning of Manipulator Robots	193
<i>Mohammed Elseiagy, Tsige Tadesse Alemayoh, Ranulfo Bezerra, Shotaro Kojima, Kazunori Ohno</i>	
AIREC-Basic: Consistent Demonstration Data Collection for Imitation Learning with Redundant Robot Arms.....	199
<i>Hiroshi Ito, Yoshiki Kanai, Akira Kanazawa, Hideyuki Ichiwara, Takahiro Yoshida, Naoaki Noguchi, Tetsuya Ogata</i>	
The Role of Real-World Data in Evaluating Causal Bayesian Networks: Data Collection Guidelines and Case Study	205
<i>Zhitao Liang, Maximilian Diehl, Nanami Hashimoto, Anne Koepken, Daniel Leidner, Karinne Ramirez-Amaro, Emmanuel Dean</i>	
Robotic Integration of Pneumatic Grasping Systems for Deformable Textile Handling: Automated Characterization Approach	213
<i>Tristan Alkis, Ann Majewicz Fey, Roman Mykhailyshyn</i>	
Modular Vacuum-Based Fixturing System for Adaptive Disassembly Workspace Integration.....	219
<i>Haohui Pan, Takuya Kiyokawa, Tomoki Ishikura, Shingo Hamada, Genichiro Matsuda, Kensuke Harada</i>	
Development of the Screw Coupling and the System for Continuous Evaluation of Connection Mechanism	227
<i>Tasuku Makabe, Naoya Yamaguchi, Iori Yanokura, Kei Okada</i>	
Hierarchical Planning and Scheduling for Reconfigurable Multi-Robot Disassembly Systems Under Structural Constraints	233
<i>Takuya Kiyokawa, Tomoki Ishikura, Shingo Hamada, Genichiro Matsuda, Kensuke Harada</i>	
Scikit-Robot: An Integrated Framework for Solving Structural Challenges in Dynamic Modeling for Reconfigurable Robotics.....	239
<i>Iori Yanokura, Kento Matsuo, Hirokazu Ishida, Sousuke Morita, Aoi Nakane, Naoya Yamaguchi, Tasuku Makabe, Kei Okada</i>	
A Teleoperation Framework for an Articulated Aerial Robot with Full DoF Mapping of Base Pose and Joint Angles	245
<i>Kotaro Kaneko, Junichiro Sugihara, Kazuki Sugihara, Masaki Kitagawa, Keisuke Nagato, Moju Zhao</i>	
RGB-D Fusion for Wide Field of View User Feedback in Teleoperation Context.....	251
<i>Raphael D'Orfani, Antoine N. Andre, Mehdi Benallegue, Rafael Cisneros-Limon, Guillaume Caron</i>	
A Web-Based Multi-Robot Teleoperation Platform: Architecture, Implementation, and User Evaluation.....	258
<i>E. Rafael Hernandez-Rios, Christian Penaloza</i>	
Object-Based Teleoperation Interface for Collaborative Manipulation.....	264
<i>Tomeo Bourin, Tomoya Sasaki, Simeon Capy, Eiichi Yoshida</i>	
VF Designer: CAD-Guided Virtual Fixtures for Enhanced Robot Teleoperation in Multi-Step Manipulation Tasks.....	270
<i>Peter So, Diego Fernandez Prado, Yassine Ben Chehida, Eckehard Steinbach</i>	

Enhancing Vision-Based Tactile Sensing Through a Fingernail-Inspired Structure for Improved Contact and Texture Detection	277
<i>Takeshi Tomomizu, Van Anh Ho</i>	
Transformer-Based Robust Tactile Object Recognition Under Sensor Faults Through Training, Adaptation, and Correction	285
<i>Masanori Muroyama</i>	
Integrating a 3-Axis Tactile Sensor Array on AIREC Robot for Human-Like Radial Pulse Measuring.....	293
<i>Reem Almheiri, Yushi Wang, Tito Pradhono Tomo, Tamon Miyake, Simon Gormuzov, Shigeki Sugano</i>	
Real-Time Fingertip Force Estimation from Lateral Deformation for Precision Manipulation Task.....	300
<i>Jiang Shixuan, Atsutoshi Ikeda</i>	
Hypergraph Convolutional Networks Based Spatial Tactile Modeling for Object Geometric Property Recognition.....	306
<i>Shardul Kulkarni, Satoshi Funabashi, Alexander Schmitz, Tetsuya Ogata, Shigeki Sugano</i>	
Multi-Object Loco-Manipulation Using Body Holding Primitives for Humanoids	313
<i>Zhongkai Gu, Wei Zhu, Mitsuhiro Hayashibe</i>	
Discrete Element Method Study of Hopping on Granular Media to Develop Analytical Model for Hopping Robot Design	319
<i>Rio Makino, Takao Maeda</i>	
Learning Humanoid Loco-Manipulation with Constraints as Terminations.....	325
<i>Pierre-Alexandre Leziart, Mitsuharu Morisawa, Fumio Kanehiro</i>	
Indirect Torso Posture Control and Force-Guided Singularity Avoidance for Humanoid Teleoperation System Using Exoskeleton Cockpit.....	333
<i>Hiroki Yoshioka, Tomoya Himeno, Kunio Kojima, Kei Okada</i>	
Self-Rising Bipedal Robot for Embracing Fall Impact and Fall Detection with Multimodal Sensing	339
<i>Kenta Hirashima, Daniel Campos Zamora, Kevin G. Gim, Joohyung Kim</i>	
Configurable Pneumatic Soft Actuators for Multi-Directional Wrist Rehabilitation.....	345
<i>Ibrahim A. Seleem, Hiroshi Takemura</i>	
Design Analysis of Tendon-Actuated Soft Robot for Colonoscopy	352
<i>Ibrahim A. Seleem, Hiroshi Takemura</i>	
Human-In-The-Loop Control of a Soft Pneumatic Exosuit for Step Width Guidance Via Hip Abduction/Adduction	358
<i>Jinnosuke Kamimura, Tetsuro Miyazaki, Kenji Kawashima</i>	
Hemodynamics of Active Ankle Motion in a Seated Position Using a Soft Robotic Wearable Actuator: A Comparative Study of Exercise Protocols and Cycles	364
<i>A. Kobayashi, A. Irie, R. Nishihama, T. Nakamura</i>	
Motion Generation for Surgical Robots Using Task-Aware Attention Based on Deep Predictive Learning *	370
<i>Hidetoshi Taira, Maina Sogabe, Tetsuro Miyazaki, Kenji Kawashima</i>	

Dynamic Model Updates and Prediction Horizon Optimizations in Self-Tuning Model Predictive Control.....	376
<i>Takashi Nammoto</i>	
Non-Monotonic Lyapunov Function-Based Design of Decentralized Triggering Conditions in Output Feedback Event-Triggered Control	382
<i>Masaki Yanai, Koichi Kobayashi, Yuh Yamashita, Kenji Sawada</i>	
Torque-Thrust Integrated Inverse Dynamics for Rotor Distributed Manipulator Toward Dynamic Deformation.....	387
<i>Kazuki Sugihara, Kei Okada</i>	
Design, Modeling and Control of a Deformable Quadrotor Using McKibben Pneumatic Actuators.....	393
<i>Keiichiro Kan, Junichiro Sugihara, Jinjie Li, Masaki Kitagawa, Kotaro Kaneko, Moju Zhao</i>	
Position-Based Force Control for In-Hand Manipulation Using a Soft-Rigid Hybrid Two-Finger Hand	401
<i>Keita Katamine, Hikaru Arita, Kazuto Nakashima, Kenji Tahara</i>	
Using Eye Gaze and Body Location to Organize and Retrieve Information in Mixed Reality	407
<i>Yuu Takahashi, Takeshi Sasaki</i>	
Proposal and Fundamental Evaluation of a Hand Posture Guidance Method Using Air-Jet-Based Force Feedback.....	413
<i>H. Ohara, M. Okui</i>	
Towards Acceptance of Virtual Validation: The Indirect Technology Acceptance Framework.....	419
<i>Cindy Demuth, Nick Schade, Henrik Lampe, Theodor Behrens, Jurgen Pannek</i>	
Walking Sensation in Low- And High-Viscosity Fluids Using a Lower-Limb Force-Feedback Exoskeleton with MR Fluid Brake –The Effect of Changes in Visual on Users' Subjective Evaluation–.....	426
<i>T. Sugino, K. Ogura, R. Sawahashi, R. Nishihama, T. Nakamura</i>	
A Dynamic Noise Correction Method for Person Recognition Using 3D Point Clouds According to Sprint Speed of Short Distance Runners	432
<i>Ryohei Matsushita, Taku Itami</i>	
Thin-Film Thermal Discoloration Sensor for Distributed Material Identification	438
<i>Hirokazu Iwane, Yukiko Osawa</i>	
Iterative Development of a Mechanical Gripping System for Civil counter-UAS Applications	444
<i>Dmytro Zhukov</i>	
Development of a Compact Collar-Mounted Feeder for Remote Dog Feeding	452
<i>Kai Fukuzawa, Tsige Tadesse Alemayoh, Shotaro Kojima, Ranulfo Bezerra, Miho Nagasawa, Takefumi Kikusui, Kazunori Ohno</i>	
Design of a Modular Gripper Family Using Solution Spaces	458
<i>Johann Maria Maximilian Amm, Florian Lonsky, Markus Zimmermann</i>	
Evaluation of Developed Structures for Drone Audition-Purposed Measurement Equipment in Actual Flight Conditions	464
<i>Yuta Tsukamoto, Kotaro Hoshiba</i>	

Relationship Between the Benefit of Inconvenience and Emotions in a Sightseeing Experiment: An ANOVA and Correlation Analysis*	471
<i>Kotaro Itatsu, Hiroshi Kawakami</i>	
Analysis of the Impact of AI-Based NPC with Different Levels of Initiative and Performance on Human Reactions	477
<i>Tomoe Tsuji, Wen Liang Yeoh, Osamu Fukuda</i>	
Personal Space Toward Human-Like and Non-Human-Like Robots: Effects of Robot Appearance and Likability	483
<i>Rio Taguchi, Kaoruko Shinkawa, Yoshihiro Nakata</i>	
A Compact Thermal Grill Illusion Presentation System for Psychophysiological and Engineering Studies	491
<i>Kazuma Kotera, Atsutoshi Ikeda</i>	
Generation of Target Gait Using Biomechanical Relational Network Based on Generative Adversarial Network (BMR-NetGAN)	497
<i>Ryoya Oba, Yusuke Osawa, Kazunori Kaede, Keiichi Watanuki</i>	
Local Velocity Field Control of a Nonholonomic Base for Kinesthetic Interaction with a Collaborative Arm	505
<i>Tadej Petric, Leon Zlajpah</i>	
Dynamic Bimanual Cloth Manipulation Via Dynamic Movement Primitives and Reinforcement Learning	511
<i>Matija Mavsar, Ales Ude, Andrej Gams</i>	
Sequence Optimization in Multi-Camera Robotic Visual Inspection	518
<i>Miha Denisa, Tadej Petric, Ales Ude</i>	
A Data-Driven Learning-From-Demonstration Framework for Robotic Grasping	524
<i>Lars Pedersen, Erik D. Lindby, Jeppe Langaa, Leon Bodenhagen, Aljaz Kramberger</i>	
Cognitive Robotics for Digital Twin-Enabled Automation in Structural Panel Fabrication and Installation	531
<i>Nikola Knezevic, Milos Dimcic, Sasa Jokic, Kosta Jovanovic</i>	
RNBF: Real-Time RGB-D Based Neural Barrier Functions for Safe Robotic Navigation	537
<i>Satyajeet Das, Yifan Xue, Haoming Li, Nadia Figueroa</i>	
Maneuverability Ellipsoid for Analyzing Sampling Space of Model Predictive Path-Integral Control for 4WIDS Robot Navigation	545
<i>Ryo Ueda, Genya Ishigami</i>	
Collision-Free Navigation of Mobile Robots Via Quadtree-Based Model Predictive Control	553
<i>Osama Al Sheikh Ali, Sotiris Koutsoftas, Ze Zhang, Knut Akesson, Emmanuel Dean</i>	
A Low-Cost UAV-Based Framework for Post-Seismic Crack Detection with CNN and Gesture Control	559
<i>Oscar Ramirez-Ayala, Carlos G. Valerio-Naranjo, Ruben Fuentes-Alvarez</i>	
Finger Shape Design Based on the Center of Percussion Theory for High-Speed Contact Grasping of Highly-Backdrivable Grippers	564
<i>Yuta Shimizu, Atsushi Kakogawa</i>	

Speech Enhancement Fusing a General Microphone and a Bone Conduction Microphone.....	570
<i>Junki Kawaguchi, Mitsuharu Matsumoto</i>	
Broken in Transit: Detecting Type Confusion in ROS 2 Deserialization Via Fuzzing	578
<i>Stephen Nwagwughigwu, Jose Toribio, Jeremy Blackstone</i>	
A Complementary Approach for Robust and Safety-Oriented Visual Tracking Via Near-Infrared and RGB-D Cameras for Safe Physical Human-Robot Interaction.....	584
<i>Mazin Hamad, Samuel Kangwagye, Valentin Le Mesle, Rafael Mosberger, Achim J. Lilienthal, Sami Haddadin</i>	
Additively Manufactured Inductive Sensor for Translational Motion in Robotic Applications	592
<i>Robin Waltersbacher, Lukas Stiglmeier, Thomas M. Wendt</i>	
Bio-Inspired Object Reference Recognition in Human-Robot Interaction Under Ambiguous Non- Verbal Cues.....	597
<i>Daiju Kanaoka, Hakaru Tamukoh, Hendry F. Chame</i>	
Posture Control in Personal Mobility Robots Through Pressure Interfaces	605
<i>Celine Tchernin, Jorge Pena-Queralt, Yang Chen, Diego Paez-Granados</i>	
Texting-While-Walking Detection in Real-World Environments Using Vision-Language Models with Prompt Engineering.....	612
<i>Seungpyo Choi, Jiaxu Wu, Qi An, Atsushi Yamashita</i>	
Anomaly-Aware Change Detection for Oil Refinery Inspection Using a Mobile Robot with Viewpoint-Aligned Novel View Synthesis	618
<i>Tomohito Hoshii, Takuya Igaue, Jun Younes Louhi Kasahara, Masayoshi Kinoshita, Risa Koda, Shota Shimizu, Shinji Kanda, Hajime Asama, Qi An, Atsushi Yamashita</i>	
Behavior Cloning for Aircraft Autopilots with Semantic Segmentation Under Various Lighting Conditions	626
<i>Satoshi Hoshino, Yudai Teranishi</i>	
Automatic Training Data Selection for Autoencoder-Based Acoustic Defect Detection Robust Against Class-Imbalance	632
<i>Aki Takamura, Koki Shoda, Jun Younes Louhi Kasahara, Takuya Igaue, Qi An, Atsushi Yamashita</i>	
Hybrid High-Speed Picker: Introduction of a Novel Hybrid Kinematic Structure.....	638
<i>Benedikt Held, Christian Meierlohr, Frank King, Franz Haas</i>	
Calibration of Optical Center Alignment Between a High-Speed Camera and Galvanometer Mirrors for High-Precision Laser Tracking	645
<i>Tomohiro Sueishi, Keiko Yokoyama, Masatoshi Ishikawa</i>	
High-Precision Trajectory Generation Based on Data-Driven Model Predictive Control with Weight Optimization.....	651
<i>Junya Fukui, Takashi Nammoto</i>	
Dart-Throwing Teaching Device Using Force Presentation Driven by Pneumatic Artificial Muscle	657
<i>Takuya Shirakawa, Tetsuro Miyazaki, Kenji Kawashima</i>	
Wearable Microblower System for Affective Touch: Airflow-Based Tactile Stroking Stimulation	663
<i>Youchan Yim, Fumihide Tanaka</i>	

Real-Time Joint-Torque Feedback in VR Pre-Training for Safe Lifting: A Comparative Study of Visual Encodings	671
<i>Kouichi Iwami, Tetsunari Inamura</i>	
Utilization and Evaluation of a Pneumatic Cylinder-Based Acceleration Device for Long-Distance Ascent Sensation Presentation in Virtual Reality Environments	679
<i>J. Hiura, Y. Ishida, R. Sawahashi, R. Nishihama, T. Nakamura</i>	
State Estimation of a Shape-Flexible Multi-Fingered Robotic Hand Leveraging Multiple Proximity Sensors Measuring an Ambient Environment Including the Self-Body and a Constant Curvature Model	685
<i>Masato Morita, Hikaru Arita, Kazuto Nakashima, Kenji Tahara</i>	
Stable In-Hand Manipulation for a Lightweight Four-Motor Prosthetic Hand	691
<i>Yuki Kuroda, Tomoya Takahashi, Cristian C. Beltran-Hernandez, Kazutoshi Tanaka, Masashi Hamaya</i>	
Development of Hand Skeleton with Jamming Transition for Improved Object Grasp Retention Force and Stable Leader-Follower Teleoperation Grasping in Soft Robotic Hand.....	698
<i>Yusuke Yamashita, Yuki Funabora, Shinji Doki</i>	
Design of a Tendon-Driven Robotic Hand for High-Force Grasping and Dexterous Manipulation	704
<i>Shinya Tajima, Jun Kinugawa</i>	
Movement-Specific Analysis for FIM Score Classification Using Spatio-Temporal Deep Learning	710
<i>Jun Masaki, Ariaki Higashi, Naoko Shinagawa, Kazuhiko Hirata, Yuichi Kurita, Akira Furui</i>	
Learning Better Paths: Multimodal Generative Models Enhanced with Local Critics.....	716
<i>Jorge Ocampo Jimenez, Wael Suleiman</i>	
Rewarding Change Beyond State: Directional VLM Rewards for Sample-Efficient Robot Reinforcement Learning	722
<i>Linus Lundgren, Wenhao Lu, Zhitao Liang, Ze Zhang, Karinne Ramirez-Amaro, Emmanuel Dean</i>	
From One Image to Precision Pose: Seed-Diverse Diffusion Models and Model-Selection-Driven Hybrid Servoing in Limited Viewpoints.....	729
<i>Daigo Terazono, Takashi Nammoto, Ryota Kato, Naoya Chiba, Shingo Kagami, Koichi Hashimoto</i>	
ROSCOE: Robot Scanning and Computing Equipment for Autonomous Terrestrial Mapping	737
<i>Julian Raheema, Seth Farrell, Michael Hess, Raymond Provost, Mark Bilinski, Henrik Christensen</i>	
Proposal and Feasibility Evaluation of a Quasi-Static Omni-Directional Mobility Robot Using Multiple Elastic Telescopic Arms	745
<i>Kazuhiro Tsukahara, Hiroto Kodama, Yuji Fujitsuka, Daiki Ueda, Takahiro Aruga, Gen Endo</i>	
A Mobile Robotic Framework for Teleoperated Pipe Inspections in Hydroelectric Power Plants	750
<i>Guillermo Maldonado, Jabes Guerra, Juan Barrientos, Luis Ayapan, Julio Fajardo</i>	
Fuzzy-Adaptive Force-Compliant Control and Sensorless Estimation of a Hybrid Aerial Manipulator for Contact-Based Pipeline Repair.....	756
<i>Ezeldin N. Moustafa, Mitsuhiro Kamezaki, Shota Miyake, Shigeki Sugano</i>	

A SysML v2-Based Framework for Multi-Disciplinary System Virtual Integration.....	764
<i>Tianxiao Xu, Nejib Moalla, Mohand-Loune Bentaha, Hazal Aktekin, Giuseppe Cereda, Claudia Agostinelli</i>	
Integrated ML-Calibrated Sensing with Neural Network Control for Horticultural Lighting.....	770
<i>Afagh Mohagheghi, Mehrdad Moallem</i>	
Advancement of Action Models Through Model Circulation Among Robots and Model Builders in the Robot AI Ecosystem	776
<i>Yu Sakai, Kazuyuki Morioka</i>	
Towards Personalized Context-Aware Bedside Patient Monitoring	782
<i>Kai Wu, Darius Burschka</i>	
Automatic Sewing Pattern Generation from Garment Images Using Segmentation and Conditional GANs.....	788
<i>Hikaru Suzuki, Alessandro Moro, Sarthak Pathak, Kazunori Umeda</i>	
EVLOD: Ensemble Vision-Language Open-Vocabulary Detection for Construction Site Object Recognition	794
<i>Yongdong Wang, Runze Xiao, Jun Younes Louhi Kasahara, Shota Chikushi, Keiji Nagatani, Atsushi Yamashita, Hajime Asama</i>	
Toward Robot-Assisted Classification and Selective Picking of V. Harveyi and Soil Bacteria Via Motility Analysis of Inverted Microscope Videos Using XGBoost.....	800
<i>Yuki Fujita, Sarthak Pathak, Alessandro Moro, Yuki Nagase, Hiroaki Suzuki, Keiichiro Koiwai, Kazunori Umeda</i>	
A Localization Strategy for Low-Cost UAVs Sewers Inspection	806
<i>Paolo Maisto, Vincenzo Scognamiglio, Mario Selvaggio, Vincenzo Lippiello</i>	
Robotic System Architecture Design for Manipulation of 3D Deformable Objects.....	813
<i>Felix Nadon, Angel J. Valencia, Pierre Payeur</i>	
Grasping Motion Generation for Deformable Objects Under Dynamic Position Changes Via Variance Prediction.....	819
<i>Riko Kawata, Hyogo Hiruma, Hiroshi Ito, Tetsuya Ogata, Shigeki Sugano</i>	
Object Deformation Suppression for Grasping Leveraging Optical Proximity Sensors	826
<i>Shunsuke Tokiwa, Hikaru Arita, Yosuke Suzuki, Kazuto Nakashima, Kenji Tahara</i>	
MRF-Based Mapping of Fetal and Maternal Deformations for Understanding and Supporting Fetal Movement Perception.....	832
<i>Haruka Matoba, Takashi Kusaka, Koji Shimatani, Dongmin Kim, Hoshinori Kanazawa, Yasuo Kuniyoshi, Takayuki Tanaka</i>	
An Articulated-Arm Underwater Mobile and Manipulation Robot with Thrusters for Both Suction and Propulsion "Lamprey-1" : Calculation of Adhesive Force for Negative Pressure Effect Plate Required During Wall Suction Work and Its Verification Experiments.....	838
<i>Shota Hiromoto, Atsushi Kakogawa, Norimitsu Sakagami</i>	
Path Following Control System of Line-Of-Sight Guidance for Robotic Dolphin with Multi-Link Mechanism in Underwater Simulator.....	844
<i>Takumi Asada, Takao Oki, Hideo Furuhashi, Kenta Tabata, Renato Miyagusuku, Koichi Ozaki</i>	

Series Elastic Actuated Needle Valve and Sealing Equilibrium Flow Rate Models for Precise Position Control in Single-Acting Water-Hydraulic Actuators.....	850
<i>Shuto Yoshimura, Yuki Nakamura, Tomoyuki Noda, Yoshihito Nakata</i>	
Second Report on Space-Filling Truncated Octahedron Climbing Modular Robots for the Construction of High-Rise Structures on the Lunar Surface: Experimental Validation of Assembly Motion*	856
<i>Haruho Mitsunaga, Akio Noda</i>	
Flexible State-Aware Planning for Robust Object Placement in Home Tidy-Up with Autonomous Mobile Manipulators	862
<i>Natee Buttawong, Kosei Isomoto, Hakaru Tamukoh</i>	
NAIS: A Modular ROS 2 Framework for Real-Time Scene Graph Construction and Language-Guided Navigation	869
<i>Jose M. Flores Gonzalez, Enrique Coronado, Natsuki Yamanobe</i>	
Semantic-Integrated Topological Mapping with Factor Graph Optimization for Small Robots in Unknown Environments.....	875
<i>Kosuke Sakamoto, Yasuharu Kunii</i>	
From Specification to Certification: TORQ-Ordered Rulebooks and Robust HOCBF Optimization for Safe Autonomous Driving.....	881
<i>Hadi Hajieghrary, Benedikt Walter, Paul Schmitt</i>	
Development of a Semi-Autonomous Manipulation Pipeline for Robotic Shelf-Picking Operations.....	887
<i>David Vazquez, Piero Vega Gutierrez, Rafael Cisneros-Limon, Kenji Kaneko, Fumio Kanehiro, Luis Alberto Munoz</i>	
Utilizing Knowledge in Vision-Language Model for Robotic Grasp Force Estimation Through Robot-To-Human Image Translation.....	895
<i>Shohei Hagane, Shigeaki Goto, Yoshihiro Ohama</i>	
SwitchOpt: Trajectory Optimization with Adaptive Grasp Target Switching.....	902
<i>Elisabeth Menendez, Santiago Martinez, Carlos Balaguer</i>	
Depth Estimation for Picking Transparent Objects Using a Polarization Camera.....	908
<i>Kento Yamada, Prasnaht Kumar, Yukiyasu Domae, Takuya Kiyokawa, Weiwei Wan, Kensuke Harada</i>	
Mobile Robot Localization Based on FEM Stress Analysis Using Pressure Sensors Under Floor	916
<i>Daiyannan Chen, Yonghoon Ji</i>	
Exploring Factors Influencing Cybersickness and Workload in VR Robot Teleoperation Systems Under Spatial and Temporal Noise.....	922
<i>Mark Roland Aquino, Yuto Hattori, Yutaka Nakamura, Yuya Okadome</i>	
An ISO/IEC 25010-Based Evaluation Methodology for Designing Digital Mock-Up Toward Nuclear Decommissioning	928
<i>Fumiaki Abe, Kuniaki Kawabata, Wataru Sato, Tomoki Sakaue</i>	
Road Surface Estimation and Obstacle Detection Using Fisheye Stereo Camera and Monocular Depth Estimation.....	936
<i>Hikaru Chikugo, Jonoshin Shiino, Sarthak Pathak, Kazunori Umeda</i>	

Image Resolution Enhancement Using Time-Of-Flight-Based Backscatter Rejection in Compton Camera	942
<i>Yosuke Kobayashi, Koki Nakamura, Agus Nur Rachman, Tadashi Orita, Mizuki Uenomachi, Hideki Tomita, Yusuke Tamura, Kei Kamada, Fumihiko Ishida, Eiji Takada, Jun Kawarabayashi, Kosuke Tanabe, Ken'Ichi Tsuchiya, Hanwool Woo, Kenji Shimazoe</i>	
ANSI/RIA R15.08-1/2 and ANSI/A3 R15.08-2 Compliant Safety-Oriented Software Components for Industrial Mobile Robots	948
<i>Samuel Kangwagye, Mazin Hamad, Alessandro De Toni, Vasilije Rakcevic, Valentin Le Mesle, Achim J. Lilienthal, Sami Haddadin</i>	
CORAL: A Unifying Abstraction Layer for Compositional Robotics Software.....	956
<i>Steven Swanbeck, Mitch Pryor</i>	
Attentional Event-RGB Sensor Fusion for Fast Drone Detection	964
<i>Antoine Zundel, Cedric Demonceaux, Nicolas Hueber, Guillaume Strub, Sebastien Changey</i>	
NeuralMeshing: Complete Object Mesh Extraction from Casual Captures	970
<i>Floris Erich, Naoya Chiba, Abdullah Mustafa, Ryo Hanai, Noriaki Ando, Yusuke Yoshiyasu, Yukiyasu Domae</i>	
A ROS-Based Hardware Abstraction Layer for Multifunction End-Effector Integration.....	976
<i>Victor R. Passos, Wesley R. De Oliveira</i>	
Co-Optimization of Design and Manufacturing Parameters for Low-Cost Robotic Actuation	982
<i>Gregory M. Campbell, Yi Cao, Hannah Escritor, Zihao Zhou, Mark Yim</i>	
Optimal Design of Passive Link Systems and Sensor Fusion for Precise Position Measurement of Robot End-Effector	990
<i>Morito Sato, Atsushi Takata, Masafumi Okada</i>	
Laser HaPouch: Modeling and Implementation of Laser-Driven Liquid-To-Gas Phase Change Actuator Arrays for Haptic Displays	996
<i>Kazuki Yamaura, Hiroki Ishizuka, Takefumi Hiraki</i>	
Position and Stiffness Control Based on a Mechanical-Equilibrium Model for Antagonistic Joints Using Hyper-Extension Actuators	1004
<i>A. Irie, A. Kobayashi, R. Sawahashi, F. Ito, R. Nishihama, T. Nakamura</i>	
An Anaerobic Digestion System Inspired by Intestinal Peristalsis - Development of a Peristaltic Bioreactor with Mixing Via Rotational Flow and Negative Pressure Inflow	1010
<i>G. Ueki, T. Tanno, F. Ito, A. Ohnishi, K. Okuda, H Yamamura, R. Kina, T. Nakamura</i>	
Evaluation of Surgical Skills Using Machine Learning and Interpretation of Results with Explainable AI in Practical Laparoscopic Surgery Training.....	1016
<i>Lingbo Yan, Takashige Abe, Koki Ebina, Masafumi Kon, Madoka Higuchi, Kiyohiko Hotta, Jun Furumido, Naoya Iwahara, Shunsuke Komizunai, Teppei Tsujita, Kazuya Sase, Xiaoshuai Chen, Hiroshi Kikuchi, Haruka Miyata, Ryuji Matsumoto, Takahiro Osawa, Sachiyo Murai, Toshiaki Shichinohe, Soichi Murakami, Taku Senoo, Masahiko Watanabe, Atsushi Konno</i>	
Motion Capture and Machine Learning-Based Evaluation of Surgical Skills in Laparoscopic Cadaver Training*	1022
<i>Lingbo Yan, Takashige Abe, Koki Ebina, Masafumi Kon, Madoka Higuchi, Kiyohiko Hotta, Jun Furumido, Naoya Iwahara, Shunsuke Komizunai, Teppei Tsujita, Kazuya Sase, Xiaoshuai Chen, Hiroshi Kikuchi, Haruka Miyata, Ryuji Matsumoto, Takahiro Osawa, Sachiyo Murai, Toshiaki Shichinohe, Soichi Murakami, Taku Senoo, Masahiko Watanabe, Atsushi Konno</i>	

Estimation of Forward Tilt Angle During Wheelchair Use Considering Back Curvature	1027
<i>Daichi Murata, Sota Aoki, Taku Itami</i>	
DeepSense++: Robust HAR with Missing Data.....	1033
<i>Suryakangeyan Kandasamy Gowdaman, Sayma Akther</i>	
Hybrid Visual Servoing for Robotic Assistance in ENT Microsurgery: A Case Study on Middle Ear Access.....	1039
<i>Mohamed-Aimen Boulala, Carlos Mateo-Agullo, Renato Martins, Alain Lalande, Cedric Demonceaux, Alexis Bozorg Grayeli</i>	
Pass-On Control: Personalized Assistive Online Control for a Wrist Exosuit.....	1047
<i>Jacob Behrendt, Marc-Anton Scheidl, Sabine Thuerauf, Claudio Castellini</i>	
Integrating Automatic Force Assistance Configuration with Mixed Reality for Active Exoskeletons	1054
<i>Olmo A. Moreno Franco, Gabriele Giurin, Yonas T. Tefera, Christian Di Natali, Luigi Monica, Darwin G. Caldwell, Jesus Ortiz</i>	
ADJUHand - A Passive Anthropomorphic Hand Model with Adjustable Finger Stiffness for Exoskeleton Evaluation	1061
<i>Nico G. M. Weber, Sebastian Dietz, Jonas Walter, Dominik I. Braun, Alessandro Del Vecchio, Jorg Franke</i>	
Wearable Gravity Compensation System for Muscular Load Reduction in Manual Handling of Heavy Objects	1067
<i>Koki Ito, Ryoma Koizumi, Ryuji Tsuzuki, Riku Shibahara, Ken'Ichi Yano</i>	
Anticipating Human Behavior for Safe Navigation and Efficient Collaborative Manipulation with Mobile Service Robots	1071
<i>Simon Bultmann, Raphael Memmesheimer, Jan Nogga, Julian Hau, Sven Behnke</i>	
Towards Synergistic Human-Robot Co-Adaptation Via Reciprocal Feedback for Shared Contact Tasks.....	1079
<i>Deniz Yilmaz, Shinya Chiyohara, Jun-Ichiro Furukawa, Erhan Oztog, Hiroshi Imamizu, Jun Morimoto, Barkan Ugurlu</i>	
Action Transition Recognition Using ST-GCN for Worker Following in Agricultural Support Robots.....	1086
<i>Go Oya, Akihisa Ohya, Takashi Tsubouchi, Rui Fukui, Ayanori Yorozu</i>	
A Device Control System Using User-Defined Full-Body Gestures with HoloLens2	1094
<i>Yushin Mochizuki, Sarthak Pathak, Kazunori Umeda</i>	
Fully Automated CAD/BIM Modeling of Pipe Structures from Plant Environment 3D Point Cloud.....	1100
<i>Takashi Imabuchi, Kuniaki Kawabata</i>	
Relative Geometrical Constraint on Finger Motion for Dexterous Teleoperation of Multifingered Hand	1105
<i>Yohei Kitahara, Manoj Bhadu</i>	
Noise-Robust Speech-Based Severity Assessment for Emergency Calls	1113
<i>Kanji Okazaki, Keiichi Watanuki</i>	
Salient Behavior Extraction in Construction Machinery Operation Using Motion Propagation Forces	1119
<i>Ryo Sumiyama, Takashi Kusaka, Hironori Gunji, Yuichi Kurita, Fumiya Sakamoto, Masaru Ito, Yusuke Kamimura, Takayuki Tanaka</i>	

Extended-State Backward Iteration for Stackelberg Dynamic Games: Application to a 2-DOF Flexible Robot	1125
<i>Sami Elmadssia, Mohamad Saad, Mourad Nedil</i>	
Experimental Verification of Vibration-Based Release for a Sticky-Food Handling Gripper	1131
<i>Daiki Ueda, Dai Kurihara, Takahiro Aruga, Gen Endo</i>	
Improved Observer Design with Time-Delay Membership Functions for Takagi-Sugeno Fuzzy Systems.....	1137
<i>Jun Yoneyama</i>	
Combining High Level Scheduling and Low Level Control to Manage Fleets of Mobile Robots.....	1143
<i>Sabino Francesco Roselli, Ze Zhang, Knut Akesson</i>	
A Deep Learning-Based Anomaly Forecasting System of Time Series Sensor Data in Autonomous Vehicles	1149
<i>Min-Seon Chae, Tae-Hyoung Park</i>	
DELIVER: A System for LLM-Guided Coordinated Multi-Robot Pickup and Delivery Using Voronoi-Based Relay Planning.....	1154
<i>Alkesh K. Srivastava, Jared Michael Levin, Alexander Derrico, Philip Dames</i>	
A LLM-Assisted Compiler for Generating Standard-Compliant Driving Scenarios from Natural Language	1161
<i>Majid Jegarian, Amir K. Esfahani, Katharina Bause, Tobias Duser</i>	
Making Objects Speak: Spatial Audio Guidance for Object Grasping by Blind and Visually Impaired Users	1168
<i>Chenxin Qin, Yukiko Iwasaki, Chenyang Li, Hiroyasu Iwata</i>	
Heart Rate Measurement Using an Earphone-Type Wearable Device Equipped with Biodegradable Piezoelectric Sensors	1174
<i>Keitaro Nonaka, Shumma Jomyo, Hideki Aiko, Shuichi Tasaka, Harutoyo Hirano, Toshio Tsuji</i>	
Handwritten Input Using a Palm as a Writing Medium in MR Environments	1180
<i>Kotaro Nemoto, Takeshi Sasaki</i>	
Speech Separation Via Harmonic Suppression in Multi-Speaker Conversations to Assist Individuals with Hearing Loss	1186
<i>Kai Ito, Yasuaki Ishikawa, Taku Itami</i>	
A Flexible Field-Based Policy Learning Framework for Diverse Robotic Systems and Sensors	1192
<i>Jose G. Buenaventura-Carreón, Floris Erich, Roman Mykhailyshyn, Tomohiro Motoda, Ryo Hanai, Yukiyasu Domae</i>	
Sample-Efficient Robot Learning for Supervised Effect Prediction Tasks.....	1198
<i>Mehmet Arda Eren, Jan Babic, Erhan Oztop</i>	
An Object Placement Optimization System for Efficient and Unbiased Imitation Learning Data Collection	1204
<i>Hiromasa Yamaguchi, Yuga Yano, Hakaru Tamukoh</i>	
Secure Supervisory Control of Discrete Event Systems Using Homomorphic Encryption.....	1210
<i>Ana Clara P. Goncalves, Patricia N. Pena, Lucas V. R. Alves</i>	
Loop Closure Using AnyLoc Visual Place Recognition in DPV-SLAM.....	1216
<i>Wenzheng Zhang, Kazuki Adachi, Yoshitaka Hara, Sousuke Nakamura</i>	

Tying Path Design of a Belt-Like String to Bind Wire Harness	1222
<i>Ibuki Kitano, Hidefumi Wakamatsu, Yoshiharu Iwata</i>	
Field Implementation of an Automated Hydraulic Excavator Using ROS2-TMS for Construction and OPERA	1228
<i>Tomoya Kouno, Yuichiro Kasahara, Kota Akinari, Akinosuke Tsutsumi, Takayoshi Hachijo, Shunsuke Kimura, Yutaro Fukase, Yuki Miyashita, Takashi Yokoshima, Taro Abe, Daisuke Endo, Takeshi Hashimoto, Keiji Nagatani, Genki Yamauchi, Ryo Kurazume</i>	
Single-Chamber Inflatable Robot Arm with a Four-Finger Gripper Driven by Built-In Pouch Muscles.....	1235
<i>Masayuki Otsuka, Ryuma Niiyama</i>	
Study on Actuation Speed Improvement of Pneumatic Artificial Muscle with Exhaust Mechanism.....	1241
<i>Hayato Yase, Eigo Kohama, Kazuma Kotera, Atsutoshi Ikeda</i>	
Investigating the Optimal Assistive Strategy for Freezing of Gait: A Comparison of Unilateral and Bilateral Artificial Muscle Assistance	1247
<i>Aoi Yamamoto, Kakeru Yamasaki, Wataru Fujita, Tomohiro Shibata</i>	
Effect of Vertical Force Sensation on Fingertips by Grasping a Balloon on Muscle Activity	1253
<i>Yosei Kanai, Hayato Mikami, Tianyi Wang, Koji Shimatani, Keisuke Shima</i>	
Towards Torque-Driven Reinforcement Learning for Quadruped Locomotion	1259
<i>Jordan Dowdy, Jean Chagas Vaz</i>	
CoM-Jacobian-Based Locomotion Control of an Annular Pneumatic Robot.....	1265
<i>Ghita Tazeroualt Tlamcani, Seanan Vilfroy, Rafael Cisneros-Limon, Hiroshi Kaminaga</i>	
Wire-Driven Reconfigurable Soft Modular Robot for Multi-Modal Locomotion.....	1273
<i>Sakura Yamaguchi, Ryuma Niiyama</i>	
Relationship Between Mediolateral Margin of Stability and Load Weight During Walking with a Unilateral Load.....	1279
<i>Daichi Kubo, Shotaro Goto, Natsuki Matsunaga, Ayato Kanada, Motoji Yamamoto, Yasutaka Nakashima</i>	
VAE-Based Synthetic EMG Generation with Mix-Consistency Loss for Recognizing Unseen Motion Combinations.....	1285
<i>Itsuki Yazawa, Akira Furui</i>	
Three-Dimensional Knee Joint Load Estimation System During Walking Using IMU Sensors for the Prevention of Knee Osteoarthritis: A Fundamental Study	1291
<i>R. Yoshizawa, A. Uehara, Y. Sankai, H. Kawamoto</i>	
Prediction of Observational Gait Analysis Score in Stroke Using Sagittal Plane Gait Video and Clinical Assessment Data	1297
<i>Masataka Yamamoto, Yusuke Murakami, Naoya Oeda, Hiroshi Takemura</i>	
Emoji-Inspired Continuous Emotional Expression for Aerial Robots Using Eye Displays Based on the VAD Model.....	1303
<i>Ayano Miyamichi, Kei Okada</i>	
On Predictive Operation of Hybrid Dynamical Adsorption Cooling Facade Systems*	1311
<i>Melanie Gschwend, Olaf Bockmann, Micha Schafer, Oliver Sawodny</i>	

Coil Winding Simulation Incorporating Copper Wire Contact to Predict Manufacturing Defects.....	1317
<i>Masato Nagano, Hidefumi Wakamatsu, Yoshiharu Iwata, Hironori Suzuki, Takumi Nakaue, Takahiro Tanaka</i>	
Basic Study for Drive Mechanism with Synthetic Fiber Rope : Feasibility Study of a Tension Measurable High-Strength Synthetic Fiber Rope.....	1322
<i>Takuma Nishimura, Shinya Sadachika, Koki Hasegawa, Takahiro Aruga, Gen Endo</i>	
Evaluation of an Automated Online-Quality Assurance Framework for CNC-Machined Workpieces Via Point Cloud Comparison Techniques.....	1328
<i>Shengjian Chen, Pascal Watter, Lars Klingel, Armin Lechler, Alexander Verl</i>	
Emotion Recognition of Avatar Facial Expressions Generated Using Action Units Based on Plutchik's Emotion Model.....	1334
<i>Nanami Ishizu, Rei Taguchi, Wen Liang Yeoh, Osamu Fukuda</i>	
Improving Robotic Imitation Learning with Predicted Facial Motion Using Transformers.....	1340
<i>Yitong Li, Fumio Kanehiro</i>	
Facial Synchronization System for an Android Avatar with an Immersive Interface to Reproduce the Operator's Intended Expressions	1348
<i>Kaoruko Shinkawa, Mizuki Nakajima, Yoshihiro Nakata</i>	
Toward Following Changes in a Human's Posture: Stroking Motion Generation Using a Mobile Manipulator and an RGB-D Camera	1356
<i>Akishige Yuguchi, Sora Nii, Naoyuki Aikawa, Yoshio Matsumoto</i>	
Development of a Gel Urethra Model Simulator Using Agarose-PEG and Performance Evaluation of a Soft Growing Actuator for Urinary Catheter Insertion Assistance	1362
<i>K. Kishino, R. Sasaki, F. Ito, H. Yamanaka, M. Komeya, T. Nakamura</i>	
Fabric Actuator with Embedded Electrodes (FAEE): An Integrated System for Active Skin Condition Regulation and ECG Monitoring.....	1368
<i>Nozomu Arai, Seita Nojiri, Tsam Lung You, Tetsuyou Watanabe</i>	
Graph Neural Networks Enhance CTRCD Detection from 12-Lead ECG by Modeling Inter-Lead Relationships: A Preliminary Study.....	1375
<i>Yifan Liang, Natsu Suyama, Yuki Ishizuka, Takio Kurita, Kazuko Tajiri, Akira Furui</i>	
FEM-Based Optimization of the Mechanical Properties of a Soft Robotic Neck	1380
<i>Alberto RodrigueznSanz, Gerson Lipa, Baptiste Rouquette, Jorge Munoz, Concepcion A. Monje</i>	
3D Object Segmentation Considering Density Variation and Scanning Order of Point Clouds.....	1386
<i>Takuma Tanaka, Yoshitaka Hara, Yoji Kuroda</i>	
A Comparative Study on Segmentation Techniques for Context-Aware Safe Landing of UAVs.....	1392
<i>Miguel S. Soriano-Garcia, Julio De La Torre-Vanegas, Diego Mercado-Ravell, Israel Becerra</i>	
Tree Canopy Segmentation and Characterization Using LiDAR for Machine Learning Models.....	1399
<i>Jesus A. Monroy-Anieva, Alejandro Tellez-Quinones, Rodrigo Lopez-Farias, Hipolito Aguilar-Sierra</i>	
Photometric Virtual Visual Servoing Based on Gaussian Splatting.....	1407
<i>El Houcine Chagouti, Youssef Alj, Guillaume Caron, El Mustapha Mouaddib</i>	

Dynamic Swarm Reconfiguration Via Multi-Level Adaptive Cooperative Architecture for Multi-Robot Exploration	1413
<i>Shohei Inoue, Kosuke Sakamoto, Yasuharu Kunii</i>	
The Design and Development of a Machine Learning Wildfire UAV Swarm Algorithm: IPCA	1419
<i>Kaitlyn Kozak, Matthew Paul, Caleb Lawson, James McCusker</i>	
Estimation of Obstacle Locations Using a Distribution Model of Small Jumping Swarm Robots	1424
<i>Takahiko Takeuchi, Takashi Takuma</i>	
Intermodal Journey Planning to Transportation Hubs in a Microscopic Environment: A Multi-Objective Multi-Agent Reinforcement Learning Optimization Framework	1429
<i>Dominik Wittenberg, Nick Schade, Jurgen Pannek</i>	
Textile-Based Strain Sensor for Real-Time Bending Angle Monitoring of Soft Joints	1435
<i>Claudia Sanchez, Jaime Gonzalez, Jorge Munoz, Santiago Martinez, Concepcion A. Monje</i>	
Position and Attitude Estimation for Hydraulic Excavator Using External Sensors and Joint Angle Sensors	1441
<i>Kohki Yamamoto, Ryo Kikuuwe</i>	
Trajectory Generation for Tip-Over Prevention and Collision Avoidance of Automatic Excavators	1447
<i>Kenshiro Yamashita, Ryo Kikuuwe</i>	
Extended Diffeomorphism for Real-Time Motion Replication in Workspaces with Different Spatial Arrangements	1453
<i>Masaki Saito, Shunki Itadera, Toshiyuki Murakami</i>	
Proprioception-Inspired Feedback for Robot Manipulation Using Wearable Haptics.....	1459
<i>Tomoya Sasaki, Masahiko Inami, Domenico Prattichizzo</i>	
Accelerating Teleoperation Skill Acquisition Through Visuo-Haptic Replay	1467
<i>Francisco Ribeiro, Jihoon Park, Minoru Asada, Erhan Oztup</i>	
Fog Computing-Enabled Multi-User Interaction System Using Soft Robotic Gloves	1473
<i>Kadir Ozlem, Asli Tuncay Atalay, Ozgur Atalay, Gokhan Ince</i>	
Motion Planning Leveraging High-Speed Sensors for Conventional Industrial Manipulator	1479
<i>Misato Koreki, Usukhbayar Chuluunbat, Hikaru Arita, Kazuto Nakashima, Kenji Tahara</i>	
Data Augmentation for Continual Learning of Fast and Smooth Imitation Motions Using Model Predictive Control.....	1486
<i>Akira Kanazawa, Hiroshi Ito, Hideyuki Ichiwara, Yoshiki Kanai, Takahiro Yoshida, Hiroyuki Yamada, Naoaki Noguchi</i>	
Topological Mapping with Constrained Optimization Based on Visual Place Recognition and Orientation Constraints.....	1492
<i>Takaya Nakao, Yoshitaka Hara, Yoji Kuroda</i>	
Robust Localization Using Map Selection from Multiple Maps Based on the Relative Pose Difference of Map and Interoceptive Sensor	1498
<i>Takumi Suzuki, Yuki Funabara, Shinji Doki, Kae Doki</i>	
Deep Active Inference in Physical Human-Robot Interaction: Balancing Exploration and Goal-Directed Behavior.....	1504
<i>Jefimija Borojevic, Gabriel W. Haddon-Hill, Juan Sandoval, Shingo Murata</i>	

Dynamics-Based Feedforward Control of CNC-Controlled Robots Using Digital Twins from Virtual Commissioning with Extended Dynamical Behavior.....	1510
<i>Denis Pfeifer, Marius Baur, Christian Scheifele, Jorg Fehr</i>	
Parameter Design Aimed at Improving the Practicality of the Multiple Virtual Dynamics-Based Force Control.....	1516
<i>Mikihiro Kanekiyo, Hikaru Arita, Kazuto Nakashima, Kenji Tahara</i>	
A Fiducial Marker System for ID Recognition in Forward-Looking Sonar Images.....	1522
<i>Yixue Zhu, Yusheng Wang, Hiroshi Tsuchiya, Makoto Hiraoka, Qi An, Atsushi Yamashita</i>	
Impact Attenuation in Robotic Hammering Tasks.....	1528
<i>Haruto Ueda, Ryo Kikuuwe</i>	
Development of a Compliant Mechanism for Series Elastic Actuators.....	1534
<i>Amin Farjah, Jalal Taheri Kahnamouei, Mehrdad Moallem</i>	
Preliminary Demonstration of Steady-State Force Generation by High-Frequency Actuation of a High-Response Artificial Muscle Actuator Using Dimethyl Ether Combustion (HADEC).....	1540
<i>K. Mori, K. Tsurumi, R. Sawahashi, M. Okui</i>	
Application of FMI 3.0 Synchronous Clocks to Co-Simulation of Robotic Systems.....	1548
<i>Santiago Gil, Alvaro Miyazawa, Ana Cavalcanti, Claudio Gomes</i>	
Improving the Accuracy of Dynamic Model Identification for Moving Industrial Robots Using Indirect Z-Direction Vibration Analysis	1554
<i>Ali Khishtan, Jihyun Lee</i>	
Incentive-Driven Energy Management System for Promoting EV User Cooperation	1560
<i>Riho Hoshuyama, Masaki Inoue</i>	
State Estimation and Linear Discrete Model Predictive Control for the Hydration Process in a Lime-Based Thermochemical Energy Storage System	1565
<i>Anja Rentz, Venizelos E. Sourmelis T., Viktor Kuhl, Matthias Schmidt, Marc Linder, Oliver Sawodny</i>	
Design of an Energy Efficient Electric Quadruped Robot Based on Gravitationally Decoupled Actuation	1572
<i>Koichiro Moriwaki, Akifumi Okubo, Takahiro Aruga, Ryuichi Hodoshima, Takahiro Doi, Gen Endo</i>	
Energy-Efficient Objects Collection with Tethered Mobile Robots Twins with Dynamic Grouping of Scattered Objects.....	1579
<i>Haruka Nakamura, Hiroki Nagai, Genya Ishigami</i>	
Design of a Low-Cost Strain Gauge Array System for Wind Turbine Blade Damage Detection.....	1587
<i>Ada R. Aster, Gabriel Perez, Elijah K. Sleasman</i>	
Grid-Based Marking Prompt Framework for Spatial Understanding in Vision–Language Models	1593
<i>Ryo Terashima, Yuga Yano, Koshun Arimura, Hakaru Tamukoh</i>	
Fast and Realistic Automated Scenario Simulations and Reporting for an Autonomous Racing Stack.....	1599
<i>Giovanni Lambertini, Matteo Pini, Eugenio Mascaro, Francesco Moretti, Ayoub Raji, Marko Bertogna</i>	

Simulation-Based Evaluation of a Shape-Transformable Autonomous Surface Robot Switching Between Traveling and Station-Keeping Modes	1607
<i>Yasuyuki Fujii, Joo-Ho Lee</i>	
3-D Model-Based Pan-Tilt Multi-Camera System for High-Speed Wide-Area Volumetric Shooting	1613
<i>Adam Mail, Feiyue Wang, Kohei Shimasaki, Idaku Ishii</i>	
Slope-Aware Adaptive Gaussian Process Sampling for Robotic Information Gathering on Rough Terrain	1619
<i>Minori Tazaki, Genya Ishigami</i>	
Study on Roller-Walker: Development of Roller-Walker II Using 3D Printed Structural Components.....	1626
<i>Hana Ito, Akifumi Okubo, Kurumi Osawa, Takahiro Aruga, Gen Endo</i>	
Quantitative Evaluation of Energy Savings in a 3-DOF Manipulator Via Lightweighting with Plastic Structural Parts.....	1634
<i>Kenji Sekiguchi, Norisato Kanai, Yuta Tsukamoto, Hiroyuki Nabae, Takahiro Aruga, Takeshi Takaki, Naoyuki Takesue, Yusuke Ota, Gen Endo</i>	
Experimental Evaluation of a 3D-Printed Trochoidal Gear Reducer Using Potassium Titanate Fiber-Reinforced Filament	1640
<i>Chihiro Matayoshi, Akifumi Okubo, Pauline Barberan, Takahiro Aruga, Gen Endo</i>	
Effects of Continuous Fiber Insertion on the Strength and Stiffness of 3D Printed Parts	1646
<i>Rintaro Matsushita, Yusuke Ota</i>	
Consideration of Materials Used in Trochoidal Gear Reducer Based on Stress Analysis of Internal Components Aimed at Weight Reduction.....	1653
<i>Hironori Satake, Naoyuki Takesue</i>	
Design of Sidewinding Snake Robot with Reduced Degree of Freedoms.....	1659
<i>Takeshi Aoki, Yusuke Nagano</i>	
Offloading Reservoir Computing-Based Hand-Waving Action Recognition to FPGAs for Service Robots.....	1665
<i>Sojiro Shimada, Akinobu Mizutani, Kanta Yoshioka, Kosei Isomoto, Hakaru Tamukoh</i>	
Empirical Evaluation of Service Robot for Library Helpdesk Using Cloud Computing Services with Artificial Intelligence.....	1671
<i>Tomohiro Umetani, Sachiko Enomoto, Hiroto Tsutsui, Sotaro Tanigawa, Tatsuya Kitamura</i>	
A ROS-Based Multi-Modal Architecture for Fall Detection and Response with a Social Robot.....	1677
<i>Kavyan Zoughalian, Imene Tarakli, Aung Htet, Joshua Bamforth, Alejandro Jimenez-Rodriguez, Jims Marchang, Alessandro Di Nuovo</i>	
Fast Action Generation Via Knowledge Distillation with Flow Matching for Social Navigation.....	1683
<i>Yuki Tomita, Kohei Matsumoto, Yuki Hyodo, Kazuto Nakashima, Ryo Kurazume</i>	
Sensor-Driven Strain Detection and Deep Learning Evaluation of Passive Exoskeletons in Industrial Tasks.....	1689
<i>Sebastian Buxman, Fatemeh Davoudi Kakhki, Armin Moghadam</i>	
Estimation of Ankle Joint Impedance Based on Mechanical Response During Treadmill Belt Deceleration.....	1695
<i>Yuto Oishi, Ayato Kanada, Motoji Yamamoto, Mitsuhiro Kamezaki, Keisuke Yagi, Yasutaka Nakashima</i>	

Low-Latency Online Estimation of Human Upper-Limb Pose and Kinematics from a Single 360° Camera	1701
<i>Mathis D'Haene, Guillaume Caron, Yusuke Yoshiyasu, Bruno Watier</i>	
Design Concept and Applications of Inflatable Robots: Single and Dual-Arm with Internal Drop-Stitch Structure and Rigid Joints	1707
<i>Gangadhara Naga Sai Gubbala, Hibiki Nakagawa, Hiroki Uchida, Masato Nagashima, Hiroki Mori, Young Ah Seong, Hiroki Sato, Ryuma Niiyama, Yuki Suga, Tetsuya Ogata</i>	
Application of Sequential Approximation Optimization with Reduced Simulation Numbers for Integrated System Optimization	1715
<i>Kaito Toyoshima, Yoshiharu Iwata, Hidefumi Wakamatsu</i>	
COM-PACT: COMponent-Aware Pruning for Accelerated Control Tasks in Latent Space Models	1721
<i>Ganesh Sundaram, Jonas Ulmen, Amjad Haider, Daniel Gorges</i>	
Improving Attitude and Heading Reference Systems Performance Via Machine Learning-Driven Parameters Fine-Tuning	1727
<i>Tommaso C. Ferrari, Felipe O. Silva</i>	
Design and Evaluation of a Direct-Solar Pumping System for Automatic Drip Irrigation of Gramineous Forages	1735
<i>Martin Aguirre Medina, Santos Miguel Orozco Soto</i>	
Demonstration of a Distributed Cooperative Strategy Planning Algorithm in a Multi-Agent System with Multiple Objectives	1741
<i>Yuta Takemoto</i>	
Integrating Heterogeneous Communication Support in Model-Driven Development of Petri Nets Based Distributed Controllers	1747
<i>Luis Gomes, Duarte Tavares</i>	
Configuration Supporting System of Intelligent Space Based on Inherited Automatic Pose Estimation for Distributed RGB-D Cameras	1753
<i>Shunsuke Iwasaki, Kazuyuki Morioka</i>	
Outdoor Scene Dynamic Feature Point Filtering in SLAM Localization	1759
<i>Yimin Zhou, Yilun Yang, Lingjian Ye</i>	
Dialogue Generation for Robot Family Using ROS and Generative AI: Initial Implementation of Centralized and Distributed Systems	1765
<i>Taichi Hirano, Fumihide Tanaka</i>	
Towards a Lightweight ROS–CoppeliaSim Simulator for the BEATRIX Robotic Education Platform	1772
<i>Janaardhanan Alagarraja, Adrian Rubio-Solis, Uriel Martinez-Hernandez</i>	
Enhancing the NAO: Extending Capabilities of Legacy Robots for Long-Term Research	1779
<i>Austin Wilson, Sahar Kapasi, Zane Greene, Alexis E. Block</i>	
Passivity-Based Vs Momentum-Residual-Based External Disturbance Compensation for Closed Loop Torque Control : A Comparative Study	1786
<i>Martin Soucail, Mehdi Benallegue, Mathieu Celerier, Bastien Muraccioli, Thomas Duvinage, Helene Stefanelli, Rafael Cisneros-Limon</i>	

System Integration of an Automatic Citrus Unshiu Harvesting Robot and a Method for Their Fruits Recognition	1793
<i>Takahiro Uchida, Tomoki Yagashira, Ritsuki Yahagi, Akio Noda</i>	
QDM-RNN: Acquisition of High-Speed and Robust Behavior from Low-Speed Demonstrations.....	1799
<i>Masaki Yoshikawa, Hiroshi Ito, Hyogo Hiruma, Tetsuya Ogata</i>	
Text-To-Motion Generation for Diverse Human Body-Motion Simulation	1807
<i>Jingze Gong, Yusheng Wang, Jun Ota</i>	

Author Index