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Technical Program

Room E	SaPLPL
Chiba Institute of Technology	Plenary Talk: Sergej Fatikow (Plenary Sessions) Chair: Wang, Zhidong
SaPLPL.	09:10-09:55
sion Robotics*.	Assembly, Fabrication, and Characterization at Nanoscale Using High-Precision
University of Oldenburg	Fatikow, Sergej
Room	SaKNKN
The Chinese University of Llong Kee	Keynote Talk: Ben M. Chen (Invited Sessions)
The Chinese University of Hong Kong	Chair: Chen, Fei
SaKNKN.	09:55-10:30
Chinese University of Hong Kong	AI and UAS Technologies for Building Inspection and Information Management* Chen, Ben M.
Room D	SaS1A Award Section 1 (Decular Sections)
Beijing University of Posts and Telecommunications	Award Session 1 (Regular Sessions) Chair: Su, Baiguan
The Chinese University of Hong Kong	Co-Chair: Chen, Fei
SaS1A.	10:50-11:02
	Fusing Vision and Force : A Framework of Reinforcement Learning for
Tsinghua University	Dang, Renjun
National University of Singapore	Hou, Zhimin
Tsinghua Universit	Yang, Wenhao
Tsinghua University	Chen, Rui
Tsinghua Universit	Xu, Jing
SaS1A.2	11:02-11:14
sed with NURBS Speed Planning and	A Constant Force Tracking Strategy for Complex Surface Robots Fused Teaching/Learning Mode, pp. 7-13. <u>Attachment</u>
Nanjing University of Aeronautics and Astronautics	Duan, Jinjun
Nanjing University of Aeronautics and Astronautics	cui, kunkun
Nanjing University of Aeronautics and Astronautics	GUO, AN
Nanjing University of Aeronautics and Astronautics	Wang, Lingyu Bio ViMing
Nanjing University of Aeronautics and Astronautics Zhejiang Lat	Bin, YiMing Wan, Minhong
ZHEJIANG LAE	Huang, Qiulan
	11:14-11:26
	Modeling and Parameter Identification for Human-Robot Coupled Syst 14-20.
Zhejiang Lat	Huang, Yongshan
Zhejiang Lat	Wang, Xin
earch Institute of Interdisciplinary Innovation, Zhejiang Lat	Liang, Dingkun Resear
Peking Universit	Xiong, Jiaming
Zhejiang University	Xie, Anhuan
Dalhousie Universit	Gu, Jason
Room E	SaS1B
	Control Methods and Mechatronic Designs towards Higher Level Autonom
Beijing University of Posts and Telecommunications	Chair: Su, Baiquan
Beihang University of Posts and Telecommunications	Co-Chair: Liu, Wenyong Organizer: Su, Baiquan
SaS1B.	10:50-11:00
	A New Method for WFOV Camera Distortion Correction (1), pp. 21-26.
BeiHang University	Chen, Qian
	Wei, Zhaoxiang
BeiHang University	wei, zhaoxiang

Shen, Hongbin Mong, Coi	BeiHang University
Meng, Cai	Beihang University
11:00-11:10 Robotic Positioning in Percutaneous Tra	.SaS1B Insforaminal Endoscopic Discectomy Based on X-Ray Image and DLT Algorithm
<i>(I)</i> , pp. 27-32.	
Zhang, Tianyang	Beihang Universit
Ji, Xuquan	Beihang Universit
Zhu, Yuanyuan	Beihang Universit
Zhang, Jian	Beihang Universit
Geng, baoduo	BeiHang Universit
Xue, Yumei	Beihang Universit
Hu, Lei	Beihang Universit
Liu, Wenyong	Beihang Universit
11:10-11:20	SaS1B.
Manual Continuum Snake-Like Tube To Attachment	ol Platform: A Low-Cost Solution with Intuitive Operation (I), pp. 33-38.
ZHANG, Haonan	Beihang Universit
PEI, xu	Beihang Universit
XIAO, Feng	Beihang Universit
LI, Wenhao	Beihang Universit
11:20-11:30	SaS1B.
Design and Analysis of an End-Effector Orthopedics (I), pp. 39-44.	with Dual RCM Mechanism for Robotic Extracorporeal Shock Wave Therapy in
Wang, Boyang	Beihang Universit
Guo, Anyi	Beijing Jishuitan Hospita
liu, yan	Beihang Universit
Hou, Kedong	Beijing Pinggu District Hospita
Liu, Yajun	Beijing Jishuitan Hospita
Liu, Yajun Liu, Wenyong	
Liu, Wenyong SaS2A	Beijing Jishuitan Hospita Beihang Universit Room I
Liu, Wenyong	Beihang Universit
Liu, Wenyong SaS2A Award Session 2 (Regular Sessions)	Beihang Universit Room I Beijing University of Aeronautics and Astronautic
Liu, Wenyong SaS2A Award Session 2 (Regular Sessions) Chair: Tao, Yong 11:30-11:42	Beihang Universit
Liu, Wenyong SaS2A Award Session 2 (Regular Sessions) Chair: Tao, Yong 11:30-11:42 Acoustic 3D Shape Reconstruction of Z Han, Runzhe	Beihang Universit Room I Beijing University of Aeronautics and Astronautic SaS2A.
Liu, Wenyong SaS2A Award Session 2 (Regular Sessions) Chair: Tao, Yong 11:30-11:42 Acoustic 3D Shape Reconstruction of Z	Beihang Universit Room I Beijing University of Aeronautics and Astronautic SaS2A. ygomatic Bone for Non-Invasive Spatial Registration, pp. 45-51.
Liu, Wenyong SaS2A Award Session 2 (Regular Sessions) Chair: Tao, Yong 11:30-11:42 Acoustic 3D Shape Reconstruction of Z Han, Runzhe	Beihang Universit Room I Beijing University of Aeronautics and Astronautic SaS2A. ygomatic Bone for Non-Invasive Spatial Registration, pp. 45-51. Beihang Universit
Liu, Wenyong SaS2A Award Session 2 (Regular Sessions) Chair: Tao, Yong 11:30-11:42 Acoustic 3D Shape Reconstruction of Z Han, Runzhe Yuan, Mengning Jie, Bimeng He, Yang	Beihang Universit Room I Beijing University of Aeronautics and Astronautic SaS2A. ygomatic Bone for Non-Invasive Spatial Registration, pp. 45-51. Beihang Universit Peking University School and Hospital of Stomatolog Peking Universit
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Liu, Wenyong SaS2A Award Session 2 (Regular Sessions) Chair: Tao, Yong 11:30-11:42 Acoustic 3D Shape Reconstruction of Z Han, Runzhe Yuan, Mengning Jie, Bimeng He, Yang Zhu, Jiayu Zhang, Runshi Wang, Junchen 11:42-11:54 Application of Compliant Control in Pin- Machine, pp. 52-59. Attachment	Beihang Universit Room I Beijing University of Aeronautics and Astronautic SaS2A. <i>gomatic Bone for Non-Invasive Spatial Registration</i> , pp. 45-51. Beihang Universit Peking University School and Hospital of Stomatolog Peking University School and Hospital of Stomatolog Beihang Universit Beihang Universit Beihang Universit Beihang Universit
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Liu, Wenyong SaS2A Award Session 2 (Regular Sessions) Chair: Tao, Yong 11:30-11:42 Acoustic 3D Shape Reconstruction of Z Han, Runzhe Yuan, Mengning Jie, Bimeng He, Yang Zhu, Jiayu Zhang, Runshi Wang, Junchen 11:42-11:54 Application of Compliant Control in Pin- Machine, pp. 52-59. Attachment Huang, Yizhou Xiao, Songjie Shi, Yunze Li, Haoyu Yang, Liangjing 11:54-12:06 Integrated Task Scheduling, Action Plai	Beihang Universit Room Beijing University of Aeronautics and Astronautic SaS2A. ygomatic Bone for Non-Invasive Spatial Registration, pp. 45-51. Beihang Universit Peking University School and Hospital of Stomatolog Peking University School and Hospital of Stomatolog Beihang Universit Beihang Universit Beihang Universit Beihang Universit Beihang Universit Beihang Universit SaS2A. Based Shape Display for Compliant Physical Interaction between Human and Zhejiang Universit Zhejiang Universit Zhejiang Universit
Liu, Wenyong SaS2A Award Session 2 (Regular Sessions) Chair: Tao, Yong 11:30-11:42 Acoustic 3D Shape Reconstruction of Z Han, Runzhe Yuan, Mengning Jie, Bimeng He, Yang Zhu, Jiayu Zhang, Runshi Wang, Junchen 11:42-11:54 Application of Compliant Control in Pin- Machine, pp. 52-59. Attachment Huang, Yizhou Xiao, Songjie Shi, Yunze Li, Haoyu Yang, Liangjing 11:54-12:06 Integrated Task Scheduling, Action Plai	Beihang Universit Room I Beijing University of Aeronautics and Astronautic SaS2A. Agomatic Bone for Non-Invasive Spatial Registration, pp. 45-51. Beihang Universit Peking University School and Hospital of Stomatolog Peking Universit Peking University School and Hospital of Stomatolog Beihang Universit Beihang Universit Beihang Universit Beihang Universit Beihang Universit Beihang Universit Beihang Universit Chejiang Universit Zhejiang Universit Zhejiang Universit Zhejiang Universit Zhejiang Universit Zhejiang Universit Zhejiang Universit SaS2A.
Liu, Wenyong SaS2A Award Session 2 (Regular Sessions) Chair: Tao, Yong 11:30-11:42 Acoustic 3D Shape Reconstruction of Z Han, Runzhe Yuan, Mengning Jie, Bimeng He, Yang Zhu, Jiayu Zhang, Runshi Wang, Junchen 11:42-11:54 Application of Compliant Control in Pin- Machine, pp. 52-59. Attachment Huang, Yizhou Xiao, Songjie Shi, Yunze Li, Haoyu Yang, Liangjing 11:54-12:06 Integrated Task Scheduling, Action Plan Manipulator, pp. 60-65. Attachment	Beihang Universit Room Beijing University of Aeronautics and Astronautic SaS2A. Agomatic Bone for Non-Invasive Spatial Registration, pp. 45-51. Beihang Universit Peking University School and Hospital of Stomatolog Peking University School and Hospital of Stomatolog Beihang Universit Peking University School and Hospital of Stomatolog Beihang Universit Beihang Universit Beihang Universit Beihang Universit Beihang Universit Beihang Universit Beihang Universit SaS2A. Based Shape Display for Compliant Physical Interaction between Human and Zhejiang Universit Zhejiang Universit Zhejiang Universit SaS2A. SaS2A.
Liu, Wenyong SaS2A Award Session 2 (Regular Sessions) Chair: Tao, Yong 11:30-11:42 Acoustic 3D Shape Reconstruction of Zy Han, Runzhe Yuan, Mengning Jie, Bimeng He, Yang Zhu, Jiayu Zhang, Runshi Wang, Junchen 11:42-11:54 Application of Compliant Control in Pin- Machine, pp. 52-59. Attachment Huang, Yizhou Xiao, Songjie Shi, Yunze Li, Haoyu Yang, Liangjing 11:54-12:06 Integrated Task Scheduling, Action Plat Manipulator, pp. 60-65. Attachment Ye, Jiajie	Beihang Universit Room Beijing University of Aeronautics and Astronautic SaS2A. Agomatic Bone for Non-Invasive Spatial Registration, pp. 45-51. Beihang Universit Peking University School and Hospital of Stomatolog Peking University School and Hospital of Stomatolog Beihang Universit Beihang Universit Beihang Universit Beihang Universit Beihang Universit SaS2A. Based Shape Display for Compliant Physical Interaction between Human and Zhejiang Universit Zhejiang Universit Zhejiang Universit SaS2A. Inning and Control for Autonomous Disinfection by a Mobile Robotic The University of Hong Kon The University of Hong Kon
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12:06-12:18	SaS2A.4
Dynamic Modeling Method of Six-Axis	5 Force/Torque Sensors Based on IGWO-GRU (I), pp. 66-72.
Xue, Yufei	Anhui University
Gao, Lifu	Hefei Institutes of Physical Science, Chinese Academy of Science
Cao, Huibin	Institute of Intelligent Machines, Chinese Academy of Sciences
Sun, Yuxiang	Institute of Intelligent Machines, Chinese Academy of Sciences

Xi, Ning

SaS2B Control Methods and Mechatronic Designs towards Higher Leve	Room E el Autonomous Medical Robots 2 (Invited Sessions)
Chair: Su, Baiquan	Beijing University of Posts and Telecommunications
Co-Chair: Wang, Junchen	Beihang University
Organizer: Su, Baiquan	Beijing University of Posts and Telecommunications
11:35-11:45	SaS2B.1
A 2-DOFs Planar Grinding End-Effector for Robotic Laminect	tomy, pp. 73-78.
Duan, Wei	Beihang University
Ji, Xuquan	Beihang University
Hu, Lei	Beihang University
Liu, Wenyong	Beihang University
11:45-11:55	SaS2B.2
A Disturbance Compensation Method Using Adaptive Neural	Network for Robotic Manipulator, pp. 79-84.
Yang, Siqin	Beihang University
Lu, Chunheng	Beihang University
Luo, Xuejin	Beihang University
Wang, Junchen	Beihang University
11:55-12:05	SaS2B.3
Instability Detection During Physical Human Robot Interacti	on Based on Wavelet Decomposition, pp. 85-90.
Lu, Chunheng	Beihang University
Chen, Chenghao	Beijing Children's Hospital, Capital Medical Universtity
Song, Zhihong	Beihang University
Wang, Junchen	Beihang University
12:05-12:15	SaS2B.4
Root Canal Therapy Assisted Robot System, pp. 91-96.	
Deng, Yingyan	Beihang University
Piao, Yang	Peking University School and Hospital of Stomatology
Lu, Chunheng	Beihang University
Bao, Xudong	Peking University School and Hospital of Stomatology
Dong, Yanmei	Peking University School and Hospital of Stomatology
Wang, Junchen	Beihang University
SaS3A	Room D

SaS3A	Room D
AI-Enhanced Humanoid and Rehabilitation Robotics (Invited Sessions)	
Chair: Chen, Fei	The Chinese University of Hong Kong
Co-Chair: Li, Qiang	Bielefeld University
Organizer: Wang, Cong	Delft University of Technology (TU Delft)
Organizer: Chen, Fei	Chinese University of Hong Kong
Organizer: Chen, Jianyu	Tsinghua University
Organizer: Li, Gaofeng	Zhejiang University
Organizer: Li, Qiang	Bielefeld University
Organizer: Xie, Ming	Nanyang Technological University
Organizer: Wang, Xin	Chinese University of Hong Kong
Organizer: Ren, Qinyuan	Chinese University of Hong Kong
14:00-14:15	SaS3A.1
Dexterous and Human-Like Mobile Manipulation: From Autonomous to Collaborative (I)*.	
Chen, Fei	The Chinese University of Hong Kong
14:15-14:25	SaS3A.2
Design and Development of the Divel Arm Deb of DADO (1) an 07 400 Attesting	

Design and Development of the Dual-Arm Robot DARO (I), pp. 97-102. Attachment

Liu, Yun	Zhejiang L
Huang, Qiulan	ZHEJIANG L
Zhang, Pu	Zhejiang
Yan, Mindong	Zhejiang L
Liang, Dingkun	Research Institute of Interdisciplinary Innovation, Zhejiang L
Kong, Lingyu	Zhejiang L
Wang, Xin	Zhejiang I
Xie, Anhuan	Zhejiang Univer
Gu, Jason	Dalhousie Univer
Zhu, Shiqiang	Zhejiang I
14:25-14:35	SaS3
Bio-Inspired Control of a Rehabilitation Robot Actuated	
Cheng, Maotong	Zhejiang Univer
Zhu, Wenxin	Zhejiang Univer
Ren, Qinyuan	Zhejiang Univer
SaS3B	Roor
Control Methods and Mechatronic Designs towards Highe	
Chair: Su, Baiquan	Beijing University of Posts and Telecommunicati
Co-Chair: Wang, Junchen	Beihang University of Posts and Telecommunicati
Organizer: Su, Baiquan	Beijing University of Posts and Telecommunicati
14:00-14:10	SaS3
Cooperative Manipulator Control Based on IgH Etherca	<i>at Master</i> , pp. 109-114. Beihang Univer
Luo, Xuejin	-
Yang, Siqin	Beihang Univer
Xu, Hao	Beihang University, Bei
Lu, Chunheng	Beihang Univer
Wang, Junchen	Beihang Univer
14:10-14:20	SaS3
Preliminary Design of Robotic System for Closing Incis	
Chen, Anqi Ma, Xudang	Beijing University of Posts and Telecommunicati
Ma, Xudong	Beijing University of Posts and Telecommunicati Beijing University of Posts and Telecommunicati
Sun, Yixin	
Liu, Wenyong	Beihang Univer
Wang, Junchen	Beihang Univer
Li, Changsheng	Beijing Institute of Technol
Hu, Yida Su, Baiquan	Harvard Medical Scl Beijing University of Posts and Telecommunicati
14:20-14:30	SaS3
Teleoperation of Multi-Functional Neurosurgical Tool n	
Teleoperation of Multi-Functional Neurosurgical Tool, p Ma, Xudong	pp. 121-126.
Ma, Xudong	pp. 121-126. Beijing University of Posts and Telecommunicati
Ma, Xudong Yao, Lechen	op. 121-126. Beijing University of Posts and Telecommunicati The Affiliated High School of Peking Univer
Ma, Xudong Yao, Lechen Chen, Anqi	op. 121-126. Beijing University of Posts and Telecommunicat The Affiliated High School of Peking Unive Beijing University of Posts and Telecommunicat
Ma, Xudong Yao, Lechen Chen, Anqi Wang, Junchen	op. 121-126. Beijing University of Posts and Telecommunicat The Affiliated High School of Peking Unive Beijing University of Posts and Telecommunicat Beihang Unive
Ma, Xudong Yao, Lechen Chen, Anqi Wang, Junchen Li, Changsheng	op. 121-126. Beijing University of Posts and Telecommunicat The Affiliated High School of Peking Unive Beijing University of Posts and Telecommunicat Beihang Unive Beijing Institute of Techno
Ma, Xudong Yao, Lechen Chen, Anqi Wang, Junchen Li, Changsheng Liu, Wenyong	op. 121-126. Beijing University of Posts and Telecommunicati The Affiliated High School of Peking Unive Beijing University of Posts and Telecommunicati Beihang Unive Beijing Institute of Technol Beihang Unive
Ma, Xudong Yao, Lechen Chen, Anqi Wang, Junchen Li, Changsheng	op. 121-126. Beijing University of Posts and Telecommunicati The Affiliated High School of Peking Univer Beijing University of Posts and Telecommunicati Beihang Unive Beijing Institute of Technol Beihang Unive Harvard Medical Scl
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Ma, Xudong Yao, Lechen Chen, Anqi Wang, Junchen Li, Changsheng Liu, Wenyong Hu, Yida Su, Baiquan 14:30-14:40	op. 121-126. Beijing University of Posts and Telecommunicati The Affiliated High School of Peking Univer Beijing University of Posts and Telecommunicati Beihang Univer Beijing Institute of Technol Beihang Univer Harvard Medical Sch Beijing University of Posts and Telecommunicati SaS3
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Ma, Xudong Yao, Lechen Chen, Anqi Wang, Junchen Li, Changsheng Liu, Wenyong Hu, Yida Su, Baiquan 14:30-14:40 Gesture Control Method for Oral Blood Mixed Liquid Re Ma, Xudong	pp. 121-126. Beijing University of Posts and Telecommunicat The Affiliated High School of Peking Unive Beijing University of Posts and Telecommunicat Beihang Unive Beijing Institute of Techno Beihang Unive Harvard Medical Sc Beijing University of Posts and Telecommunicat SaS: Beijing University of Posts and Telecommunicat
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Ma, Xudong Yao, Lechen Chen, Anqi Wang, Junchen Li, Changsheng Liu, Wenyong Hu, Yida Su, Baiquan 14:30-14:40 <i>Gesture Control Method for Oral Blood Mixed Liquid Re</i> Ma, Xudong Kuang, Ziao Li, Han	pp. 121-126. Beijing University of Posts and Telecommunicat The Affiliated High School of Peking Unive Beijing University of Posts and Telecommunicat Beihang Unive Beijing Institute of Techno Beihang Unive Harvard Medical Sci Beijing University of Posts and Telecommunicat SaS3 emoval Robot, pp. 127-132. Beijing University of Posts and Telecommunicat School of Computer Science (National Pilot Software Enginee Beijing University of Posts and Telecommunicat
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Ma, Xudong Yao, Lechen Chen, Anqi Wang, Junchen Li, Changsheng Liu, Wenyong Hu, Yida Su, Baiquan 14:30-14:40 <i>Gesture Control Method for Oral Blood Mixed Liquid Re</i> Ma, Xudong Kuang, Ziao Li, Han Chen, Anqi	op. 121-126. Beijing University of Posts and Telecommunicati The Affiliated High School of Peking Univer Beijing University of Posts and Telecommunicati Beihang Univer Beijing Institute of Technol Beihang Univer Harvard Medical Scl Beijing University of Posts and Telecommunicati SaS3

SaS4A Revolutionizing Interaction: Embodied Intelligend	Room D ce and the New Era of Human-Robot Collaboration (Invited Sessions)
Chair: Qi, Wen	Politecnico Di Milan
Co-Chair: Su, Hang	Politecnico Di Milan
Organizer: Qi, Wen	Politecnico Di Milan
Organizer: Ntalampiras, Stavros	University of Mila
Organizer: Yue, Zhengjun	Technische Universiteit Dell
Organizer: Ovur, Salih Ertug	Imperial College Londo
Organizer: Su, Hang	Politecnico Di Milano
Organizer: Chen, Yue	Georgia Institute of Technology
Organizer: Aliverti, Andrea	Department of Electronics, Information and Bioengineering, Poli
14:40-14:50	SaS4A.
An Edge-Fog-Cloud-Based Hierarchical Adapti	ve Model for Human-Robot Interaction (I), pp. 133-138.
Fan, Haoyu	South China University of Technology
Li, Zhijie	South China University of Technology
Su, Hang	Politecnico Di Milano
Qi, Wen	Politecnico Di Milano
14:50-15:00	SaS4A.2
A Review of Mobile Robots in Extreme Environ	
Li, Yuhan	South China University of Technology
wang, shengzhi	South China University of Technology
Du, Juan	South China University of Technology
Qi, Wen	Politecnico Di Milano
15:00-15:10	SaS4A.3
	ontrol of Anthropomorphic Dual-Arm Robots (I), pp. 145-150.
wang, feilong	Changchun University of Science and Technology
chen, furong	Changchun University of Science and Technology
Yang, xiaolong	Changchun University of Science and Technology
yong, qi	ESIEE Paris
Dong, Yanling	Shandong University
Zhang, xinming	Changchun University of Science and Technology
zheng, long Su, Hang	Weihai Institute for Bionics, Jilin University Politecnico Di Milano
-	
15:10-15:20	SaS4A.
Sensor Fusion Based Humanoid Robotic Arm (chen, furong	Changchun University of Science and Technology
wang, feilong	Changchun University of Science and Technolog
Yang, xiaolong	Changchun University of Science and Technolog
yong, qi	ESIEE Paris
Dong, Yanling	Shandong Universit
Gao, Yi	Changchun University of Science and Technology
zheng, long	Weihai Institute for Bionics, Jilin Universit
Su, Hang	Politecnico Di Milan
SaS4B	Room I
Intelligent Motion Control of Unmanned Underwa	
Chair: ji, Daxiong	Zhejiang University
Organizer: ji, Daxiong	Zhejiang University
14:45-14:55 Adaptive Path Following Control Based on Nor	SaS4B. Ilinear Disturbance Observer for a Six Thrusters AUV (I), pp. 156-161.
ji, Daxiong	Zhejiang Universit
Xu, Minghui	Zhejiang Universit
Wang, Xinwei	Zhejiang University
Ye, Zhangying	Zhejiang Universit

14:55-15:05	SaS4B.2
Adaptive Formation Structure Control for USVs	s with Security Protection Mechanism (I), pp. 162-167.
Yin, Shilin	Dalian Maritime University
Zhang, Guoqing	Dalian Maritime University
Huang, Chenfeng	Dalian Maritime University
15:05-15:15	SaS4B.3
Path Planning Algorithm for Long-Range Auton 168-173.	nomous Underwater Vehicles Based on Environmental Features (I), pp.
ji, Daxiong	Zhejiang University
Cheng, Huifang	Zhejiang University
SaR1A	Room D
Small-Scale Robots (Regular Sessions)	
Chair: Wei, Junyi	University of Essex
Co-Chair: ZHANG, Tieshan	City University of Hong Kong
15:25-15:35	SaR1A.1
The Control System for 5-DOF Magnetic Levita	
Zeng, Zijin	Beihang University
Wang, Fengwu	Beihang University
Zhao, Jiawei	Beihang University, School of Mechanical Engineering and Automati
Wang, Chutian	Beihang University
Li, Chan	Beihang University
Feng, Lin	Beihang University
5:35-15:45	SaR1A.2
Equilibrium Theory Based Power Sharing Alloca	ation Algorithm for Wireless Capsule Endoscopy Relays, pp. 180-185.
Li, Ye	BUAA Universiy
Zhao, Jiawei	Beihang University, School of Mechanical Engineering and Automati
Wei, Junyi	University of Essex
Feng, Lin	Beihang University
15:45-15:55	SaR1A.3
High Precise Metallic Helical Microstructure Fat Tilted Mandrel Compensation, N/A	brication by Rotational Nanorobotic Manipulation System with
ZHANG, Tieshan	City University of Hong Kong
Ren, Hao	City University of Hongkong
LI, Gen	City University of Hong Kong
GUO, DONG	City University of Hong Kong
Shang, Wanfeng	Shenzhen Institutes of Advanced Technology, Chinese Academy of S
Shen, Yajing	The Hong Kong University of Science and Technology
SaR1B	Room E
Soft Robots (Regular Sessions)	
Chair: Yang, Yongliang	Shenyang Institute of Automation, CAS
Co-Chair: Zhang, Yi	University of Electronic Science and Technology of China
15:20-15:35	SaR1B.1
RoboFold: A Platform for Protein-Folding Inspir	red Robot Swarms (I), pp. 189-193.
Zhang, feng	Shenyang Jianzhu University
Gu, Yuping	Shenyang Jianzhu University
Yuan, Shuai	Shenyang Jianzhu University
Yang, Yongliang	Shenyang Institute of Automation, CAS
15:35-15:45	SaR1B.2
A Bionic Mimosa Soft Robot Composed by PNI	
Wang, Xiaowen	Yantai University
Yang, Wenguang	Yantai University
Ge, Zhixing	Shenyang Institute of Automation
	SaR1B.3
15:45-15:55	

Intelligent 3D-Printed Magnetic Micro Soft Robotic Hand with Visual Feedback for Droplet Manipulation, pp. 200-205. <u>Attachment</u>

Zhou, AIWU Zhang, Yi Nanyang Technological University University of Electronic Science and Technology of China

SaR2A Human-Robot Interaction and Cooperatio	n (Regular Sessions)
Chair: Wang, Wenxue	Shenyang Institute of Automation, CA
Co-Chair: GAO, HE	BeiHang Universit
16:15-16:25	SaR2A.
Recognition of Dynamic Grasping Motic	on through Feature Extraction for Teleoperation, pp. 206-212.
Dai, Yanping	Shenyang Institute of Automation, Chinese Academy of Science
Chen, Wenyuan	Shenyang Institute of Automation, Chinese Academy of Science
Xi, Ning	The University of Hong Kon
Wang, Wenxue	Shenyang Institute of Automation, CA
16:25-16:35	SaR2A.
Assignment, pp. 213-218.	nent for Robot Soccer Game with Deep Reinforcement Learning and Role
Zhong, Hanzhong	Tsinghua Universit
Zhu, Haier	Tsinghua Universi
LI, Xiang	Tsinghua Universi
16:35-16:45	SaR2A
Psychological Distance, pp. 219-224.	n Customer Relationship Quality: The Mediating Role of Social Perceptions and
tu, yangjun	Hunan Universi
Xiao, Lijun	Hunan Universi
Liu, Wei	Hunan Universi
yang, zhi	Hunan Universi
16:45-16:55	SaR2A
	ationship Quality in Commercial Scenarios, pp. 225-230.
tu, yangjun	Hunan Universi
Xiao, Lijun	Hunan Universi
yang, zhi	Hunan Universi
16:55-17:05	SaR2A.
A Safety Motion Planning Algorithm for Map, pp. 231-238.	Mobile Manipulator Based on Improved LSTM Neural Network and Capability
Wan, Jiahao	Beihang Universi
Tao, Yong	Beijing University of Aeronautics and Astronautic
Liu, Xiaonan	Beijing New Materials and New Energy Technology Developme Pro
Song, Yian	Beihang University; School of Mechanical Engineering & Automat
GAO, HE	BeiHang Universi
SaR2B	Room
Artificial Intelligence (Regular Sessions)	
Chair: Xu, Jing	Tsinghua Universi
16:15-16:25	SaR2B
	ed RRT Algorithm for Path Planning, pp. 239-244.
Liu, Huashan	Donghua Universi
Gu, Yuqing	Donghua Universi
Li, Xiangjian Xiao, Xinije	Donghua Universi Donghua Universi
Xiao, Xinjie	Donghua Universi
16:25-16:35	SaR2B
	inforcement Learning for Robotic Motion Planning, pp. 245-249. Attachment
Liu, Huashan	Donghua Universi
Zhang, Guojing	Donghua Universi
Li, Xiangjian Xiao, Xinjie	Donghua Universi
	Donghua Universit

Pan, Qing Hefei Uni Wang, Hao Hefei Uni 16:55-17:05 Eavesian Optimization of Double-SAC Robotic Arm Path Planning Using Recent Prioritized Experience 262:268. Yuan, Shuai Shenya Yuan, Shuai Shenya Xiong, Jianqiang Shenya Yuan, Shuai Shenya Yuan, Shuai Shenya Yuan, Shuai Shenya Yuan, Shuai Shenya Wen, Ke Shenya SaR3A Shenya Industrial/Field Robotics and Factory Automation (Regular Sessions) Chair: L1, Xiang 17:05-17:20 Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. L1, Xiang 17:20-17:30 Industrial/Field Robot, pp. 276-281. Li, Deran Kesearch on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Li, D	Qingdao University Qingdao University Qingdao University SaR2B.4 versity of Technology versity of Technology versity of Technology SaR2B.5 <i>e Replay</i> , pp. ng Jianzhu University ng Jianzhu University ng Jianzhu University ng Jianzhu University SaR2B.6
Minglie, Yao Fu, Chaoxing 16:45-16:55 Direct Monocular Visual Odometry Based on Lidar Vision Fusion, pp. 256-261. FANG, Baofu Hefei Uni Pan, Qing Hefei Uni Vang, Hao Hefei Uni 16:55-17:05 Bayesian Optimization of Double-SAC Robotic Arm Path Planning Using Recent Prioritized Experienc 262-268. Yuan, Shuai Shenya Wen, Ke Shenya Zhang, feng Shenya Xiong, Jianqiang Shenya Xiong Shenya X	Qingdao University Qingdao University SaR2B.4 versity of Technology versity of Technology versity of Technology SaR2B.5 <i>e Replay</i> , pp. ng Jianzhu University ng Jianzhu University ng Jianzhu University ng Jianzhu University
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Wang, Hao Hefei Uhi 18:55-17:05 Bayesian Optimization of Double-SAC Robotic Arm Path Planning Using Recent Prioritized Experience 262-268. Yuan, Shuai Shenya Wen, Ke Shenya Zhang, feng Shenya Xiong, Jianqiang Shenya Tr:05-17:15 Research of Improved TD3 Robotic Arm Path Planning Using Evolutionary Algorithm, pp. 269-275. Zhang, feng Shenya Xiong, Jianqiang Shenya Xiong, Jianqiang Shenya Yuan, Shuai Shenya Xiong, Jianqiang Shenya Yuan, Shuai Shenya Yuan, Shuai Shenya Wen, Ke Shenya SaR3A Shenya Industrial/Field Robotics and Factory Automation (Regular Sessions) Chair: LI, Xiang Chair: LI, Xiang Industrial/Field Robotic pettorus Manipulation of Deformable Objects: Theory and Experiments (I)*. Li, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Peiran Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong It-itefei Uni It-itefei Uni	versity of Technolog SaR2B. e Replay, pp. ng Jianzhu University ng Jianzhu University ng Jianzhu University ng Jianzhu University
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Xiong, Jianqiang Shenya 17:05-17:15 Research of Improved TD3 Robotic Arm Path Planning Using Evolutionary Algorithm, pp. 269-275. Zhang, feng Shenya Xiong, Jianqiang Shenya Yuan, Shuai Shenya Wen, Ke Shenya SaR3A Shenya Industrial/Field Robotics and Factory Automation (Regular Sessions) Chair: LI, Xiang 17:05-17:20 Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. LI, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Hefei Uni Li, Deran Hefei Uni Li, Perang Hefei Uni Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying	ng Jianzhu University
17:05-17:15 Research of Improved TD3 Robotic Arm Path Planning Using Evolutionary Algorithm, pp. 269-275. Zhang, feng Shenya Xiong, Jianqiang Shenya Yuan, Shuai Shenya Wen, Ke Shenya SaR3A Industrial/Field Robotics and Factory Automation (Regular Sessions) Chair: Ll, Xiang 17:05-17:20 Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. Ll, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actuate Song, Shuaili Gao, Yingying Suppression of Rotary Flexible Manipulator with Piezoelectric Actuate Song, Shuaili	
Research of Improved TD3 Robotic Arm Path Planning Using Evolutionary Algorithm, pp. 269-275. Zhang, feng Shenya Xiong, Jianqiang Shenya Yuan, Shuai Shenya Wen, Ke Shenya SaR3A Shenya Industrial/Field Robotics and Factory Automation (Regular Sessions) Chair: LI, Xiang 17:05-17:20 Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. LI, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Hefei Uni Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Plezoelectric Actual Song, Shuaili Gao, Yingying Suppression of Rotary Flexible Manipulator with Plezoelectric Actual Song, Shuaili	SaR2B.6
Zhang, feng Shenya Xiong, Jianqiang Shenya Yuan, Shuai Shenya Wen, Ke Shenya SaR3A Industrial/Field Robotics and Factory Automation (Regular Sessions) Chair: Ll, Xiang 17:05-17:20 Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. Ll, Xiang 17:20-17:30 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Hefei Uni Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 11 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Plezoelectric Actual Song, Shuaili Gao, Yingying 11	
Xiong, Jianqiang Shenya Yuan, Shuai Shenya Wen, Ke Shenya SaR3A Industrial/Field Robotics and Factory Automation (Regular Sessions) Chair: LI, Xiang 17:05-17:20 Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. LI, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiacong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Plezoelectric Actua Song, Shuaili Gao, Yingying	
Yuan, Shuai Shenya Wen, Ke Shenya SaR3A Industrial/Field Robotics and Factory Automation (Regular Sessions) Chair: LI, Xiang 17:05-17:20 Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. LI, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying	ng Jianzhu University
Wen, Ke Shenya SaR3A Industrial/Field Robotics and Factory Automation (Regular Sessions) Chair: LI, Xiang 17:05-17:20 Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. LI, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying Shenya	ng Jianzhu University
SaR3A Industrial/Field Robotics and Factory Automation (Regular Sessions) Chair: LI, Xiang 17:05-17:20 Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. LI, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying	ng Jianzhu University
Industrial/Field Robotics and Factory Automation (Regular Sessions) Chair: LI, Xiang 17:05-17:20 Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. LI, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying	ng Jianzhu University
Chair: LI, Xiang 17:05-17:20 Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. LI, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying	Room D
17:05-17:20 Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. LI, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying	Taia altre I haire asite
Robotic Dexterous Manipulation of Deformable Objects: Theory and Experiments (I)*. LI, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying	Tsinghua University
LI, Xiang 17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying Song, Shuaili	SaR3A.1
17:20-17:30 Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying	Tsinghua University
Research on Trajectory Planning and Control of Hydraulic Stacking Robot, pp. 276-281. Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying Gao, Yingying	SaR3A.2
Li, Deran Hefei Uni Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying	601(6)(12
Cao, Jian Hefei Uni Li, Feiteng Zhu, Xiaocong 17:30-17:40 Implementation Suppression of Rotary Flexible Manipulator with Piezoelectric Actual Song, Shuaili Gao, Yingying Gao, Yingying	versity of Technology
Li, Feiteng Zhu, Xiaocong 17:30-17:40 <i>Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actua</i> Song, Shuaili Gao, Yingying	versity of Technology
17:30-17:40 Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actua Song, Shuaili Gao, Yingying	Zhejiang University
<i>Tip Motion Control and Vibration Suppression of Rotary Flexible Manipulator with Piezoelectric Actua</i> Song, Shuaili Gao, Yingying	Zhejiang University
Song, Shuaili Gao, Yingying	SaR3A.3
Gao, Yingying	<i>tors</i> , pp. 282-289.
	Zhejiang University
	Zhejiang University
Zhu, Xiaocong	Zhejiang University
Cao, Jian Hefei Uni	versity of Technology
17:40-17:50	SaR3A.4
<i>Type Synthesis of 5-DOF 3T2R Redundantly Actuated Parallel Robots for Super-Large Components Surfaces</i> , pp. 290-296.	with Complicated
Jiang, Bingshan	Zhejiang Lat
Kong, Lingyu	Zhejiang Lat
Xie, Anhuan	Zhajiana University
Wang, Xin	
Huang, Guanyu	, .
Zhang, Lan	Zhejiang Lal
Zhao, Pengyu	Zhejiang Lal Zhejiang Lal Zhejiang Lal
Tian, Xinyu Beijir	Zhejiang Lat Zhejiang Lat Zhejiang Lat Zhejiang Lat
17:50-18:00	Zhejiang University Zhejiang Lab Zhejiang Lab Zhejiang Lab Zhejiang Lab g Jiaotong University
Modeling and Motion Analysis for Flexible Legs of a Bio-Falling Cat Robot, pp. 297-303.	Zhejiang Lab Zhejiang Lab Zhejiang Lab Zhejiang Lab
Cao, Jian Hefei Uni	Zhejiang Lat Zhejiang Lat Zhejiang Lat Zhejiang Lat g Jiaotong University SaR3A.t

Xue, Liang

Hefei University of Technology Hefei University of Technology

SaR3B Intelligent Control (Regular Sessions)	Room E
Chair: Li, Qiang	Bielefeld Universit
Co-Chair: Xu, Tianbo	Shenyang Jianzhu Universit
17:20-17:30	SaR3B.
Distributed Underwater Jet Propulsion Based Ma 304-309.	aneuverable Rudderless AUV: Design Fabrication and Testing, pp.
wang, zhangtao	Beihang Universit
wu, wenle	Beihang Universit
wan, yi	Beihang Universit
Wang, Xingjian	Beihang Universit
WANG, Shaoping	Beihang Universit
7:30-17:40	SaR3B.
	e Multi-Agent Robotic Sorting System, pp. 310-315.
Starostenko, Aleksey	Moscow Institute of Physics and Technolog
Kozin, Filipp	Moscow Institute of Physics and Technolog
Gorbachev, Roman	Moscow Institute of Physics and Technolog
Khvostikova, Olga	Moscow Institute of Physics and Technolog
Gerasimov, Sergei	Moscow Institute of Physics and Technolog
Zakharova, Ekaterina	Moscow Institute of Physics and Technolog
Zaripov, Mikhail	Moscow Institute of Physics and Technolog
Davydenko, Egor Gonnochenko, Aleksei	Moscow Institute of Physics and Technolog Sberbank Russi
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7:40-17:50 Deep Vision Guided Mobile Robot Dual Axis PID	Dynamic Real Time Adjustment Following, pp. 316-321.
Li, Yang	Guizhou Universi
Yang, Guanci	Guizhou Universi
He, Ling	Guizhou Universit
Zhao, Le	Guizhou Universit
Zhao, Tianyi	Guizhou Universi
Sun, Haoran	Guizhou Universit
7:50-18:00	SaR3B.
	Jump Systems Based on T-S Fuzzy Model, pp. 322-328.
Xu, Tianbo	Shenyang Jianzhu Universit
Jin, Meixi	Shenyang Jianzhu University, No. 25, Middle Hunnan Road Hunna
Qi, Wenhai	Qufu Normal Universit
Wang, Jin	Shenyang Jianzhu Universit
SaPP	На
Poster Session (Poster Sessions)	
Chair: XIU, WEI	Chinese Institute of Electronic
4:00-18:00	SaPP.
Research on Feature Point Localization Technolo	
Liu, Lei	University of Jina
Jun, Wei Ma Oisashaan	University of Jina
Mu, Qingsheng	University of Jina
4:00-18:00	SaPP.
Navigation Method, pp. 335-340.	ing Using the Reinforcement Learning-Based Volumetric Data
Shen, Cuifeng	Institute of Automation, Chinese Academy of Science
Deng, Zhaokun	Institute of Automation, Chinese Academy of Science
Wang, Jinzhi	College of Engineering, Peking Universit
Wang, Shuangyi	Chinese Academy of Science

14:00-18:00 <i>Towards Automated Ultrasound Scanning Using Vision-Base</i> <i>Reproduction</i> , pp. 341-346. Hao, Mingrui Zhang, Pengcheng Chen, Chen Wang, Shuangyi 14:00-18:00 <i>Research on Absolute Positioning Error Compensation of Se</i> Cui, Rongyue	Institute of Automation, Chinese Academy of Sciences Institute of Automation, Chinese Academy of Sciences Institute of Automation, Chinese Academy of Sciences Chinese Academy of Sciences SaPP.4 erial 6-DOF Industrial Robot (1), pp. 347-352. University of Jinan University of Jinan SIASUN Robot & Automation CO., Ltd
Reproduction, pp. 341-346. Hao, Mingrui Zhang, Pengcheng Chen, Chen Wang, Shuangyi 14:00-18:00 Research on Absolute Positioning Error Compensation of Se	Institute of Automation, Chinese Academy of Sciences Institute of Automation, Chinese Academy of Sciences Institute of Automation, Chinese Academy of Sciences Chinese Academy of Sciences SaPP.4 erial 6-DOF Industrial Robot (I), pp. 347-352. University of Jinan University of Jinan SIASUN Robot & Automation CO., Ltd
Zhang, Pengcheng Chen, Chen Wang, Shuangyi 14:00-18:00 Research on Absolute Positioning Error Compensation of Se	Institute of Automation, Chinese Academy of Sciences Institute of Automation, Chinese Academy of Sciences Chinese Academy of Sciences SaPP.4 erial 6-DOF Industrial Robot (I), pp. 347-352. University of Jinan University of Jinan SIASUN Robot & Automation CO., Ltd
Chen, Chen Wang, Shuangyi 14:00-18:00 Research on Absolute Positioning Error Compensation of Se	Institute of Automation, Chinese Academy of Sciences Chinese Academy of Sciences SaPP.4 erial 6-DOF Industrial Robot (I), pp. 347-352. University of Jinan University of Jinan SIASUN Robot & Automation CO., Ltd
Chen, Chen Wang, Shuangyi 14:00-18:00 Research on Absolute Positioning Error Compensation of Se	Chinese Academy of Sciences SaPP.4 erial 6-DOF Industrial Robot (I), pp. 347-352. University of Jinan University of Jinan SIASUN Robot & Automation CO., Ltd
Wang, Shuangyi 14:00-18:00 Research on Absolute Positioning Error Compensation of Se	Chinese Academy of Sciences SaPP.4 erial 6-DOF Industrial Robot (I), pp. 347-352. University of Jinan University of Jinan SIASUN Robot & Automation CO., Ltd
Research on Absolute Positioning Error Compensation of Se	erial 6-DOF Industrial Robot (I), pp. 347-352. University of Jinan University of Jinan SIASUN Robot & Automation CO., Ltd
Research on Absolute Positioning Error Compensation of Se	erial 6-DOF Industrial Robot (I), pp. 347-352. University of Jinan University of Jinan SIASUN Robot & Automation CO., Ltd
	University of Jinan University of Jinan SIASUN Robot & Automation CO., Ltd
e al, religiue	University of Jinan SIASUN Robot & Automation CO., Ltd
Jun, Wei	SIASUN Robot & Automation CO., Ltd
Liang, Liang	
14:00-18:00	SaPP.5
Research on Capacitance Compensation for Temperature C.	
Hu, Jingru	University of Jinan
Jun, Wei	University of Jinan
Luan, Xianye	Shandong SIASIN Industrial Software Research Institute Co., Ltd
Gong, Fei	Shandong SIASIN Industrial Software Research Institute Co., Ltd
14:00-18:00	SaPP.6
Aircraft Skin Seam Location and Step Difference Measurem	
Yu, Haiwen	Nanjing University of Aeronautics and Astronautics
Chen, Bai	Nanjing University of Aeronautics and Astronautics
Duan, Jinjun	Nanjing University of Aeronautics and Astronautics
Ding, Liping	Nanjing University of Aeronautics and Astronautics
14:00-18:00	
Design and Implementation of a New Spherical Robot with	an Elastic Pawl pp. 365-370
Fang, Shihao	Beijing University of Civil Engineering and Architecture
-	Beijing University of Civil Engineering and Architecture
qin, jianjun Coo Xu	Beijing University of Civil Engineering and Architecture
Cao, Yu Shao, Pai	Beijing University of Civil Engineering and Architecture
· · · · · · · · · · · · · · · · · · ·	
14:00-18:00 Development and Kinematic Accuracy Analysis of Supernur	SaPP.8
Liao, Ziyu	NUAA
Chen, Bai	Nanjing University of Aeronautics and Astronautics
Zheng, Qian	Nanjing University of Aeronautics and Astronautics
Xu, Jiajun	Nanjing University of Aeronautics and Astronautics
Tu, Zhendong	Nanjing University of Aeronautics and Astronautics Nanjing University of Aeronautics and Astronautics
-	Nanjing University of Aeronautics and Astronautics
Wu, Hongtao	
14:00-18:00	SaPP.9
Research on Tail Gas Optimization Method Based on Adapti	
Song, Xue	Changchun University of Science and Technology
Yang, Yang	Changchun University of Science and Technology
Song, Yaru	Changchun University of Science and Technology
Li, Mingqiu	Changchun University of Science and Technology
14:00-18:00	SaPP.10
Trajectory Planning of Robot End-Effector Position and Orie	
Liu, Yang Du, Zhenjun	Northeastern University SIASUN Robot & Automation
-	
Liu, Mingmin	SIASUN Robot & Automation
Tao, Tao Yongliang	Northeastern University
Li, Chengpeng	SIASUN Robot & Automation
14:00-18:00	SaPP.11
A Human-Machine Interactive Simulation Environment for I 390-395.	
wang, chunlei	Shanghai University
wang, xiao	Shanghai University

14:00-18:00	SaPP.12
Dynamic Modeling of the Hybrid Manipu	
Chen, Weifeng	Tianjin University
Liu, Haitao	Tianjin University
Li, Guangxi	Tianjin University
Bai, Yujie	Tianjin University
14:00-18:00	SaPP.13
An Approach for Upper Limb Movement pp. 402-407.	Intention Recognition Using EEG and sEMG Fusion Based on the MCPSA-CIIM,
Zhang, Weiming	Xi'an Jiaotong University
Zhang, Xiaodong	Xi'an Jiaotong University
Xu, Cheng	Science and Technology on Complex System Control and Intelligen
Zhou, Guchuan	Science and Technology on Complex System Control and Intelligent
Zhang, Teng	Xi'an Jiaotong University
Wang, Yu	Xi'an Jiaotong University
14:00-18:00	SaPP.14
Research on Dermatological Classification	on Algorithm Based on the Fusion Model, pp. 408-413.
Zhang, Chenjie	Changchun University of Science and Technology
Wang, Shuai	Changchun University of Science and Technology
Zhang, Yu	Changchun University of Science and Technology
Hu, Hanping	Changchun University of Science and Technology
14:00-18:00	· · · · · · · · · · · · · · · · · · ·
	Based on Swin Transformer, pp. 414-419.
Hu, Hanping	Changchun University of Science and Technology
Wang, Shuai	Changchun University of Science and Technology
Zhang, Chenjie	Changchun University of Science and Technology
	Changchun University of Science and Technology
Pan, Yue	
14:00-18:00	SaPP.16
	varm for the Glioma Therapy, pp. 420-425.
Li, Chan	Beihang University
HU, Zihan	Beijing University of Aeronautics and Astronautics
Sun, Hongyan	Beihang University
Wang, Chutian	Beihang University
Zeng, Zijin	Beihang University
Feng, Lin	Beihang University
14:00-18:00	SaPP.17
-	ect Detection Method in Cluttered and Occluded Scenes, pp. 426-431.
Li, Sicong	Shenyang Institute of Automation, Chinese Academy of Sciences
Zhu, Feng	Shenyang Institute of Automation, Chinese Academy of Sciences
Wu, Qingxiao	Shenyang Institute of Automation Chinese Academy of Sciences
14:00-18:00	SaPP.18
	g SSVEP-Based BCI System Classification, pp. 432-437.
Cui, Yingxue	Zhengzhou University of Light Industry
14:00-18:00	SaPP.15
Deep Learning Based Defect Detection	
Li, Jiaqi	University
Li, Hongxu	Yanshan University
Wu, Yifan	University of Alberta
Zhou, Hailiang	Hebei Baoding Jiasheng Photovoltaic Technology Co., Lto
Manfredi, Luigi	University of Dundee
Li, Peng	Yanshan Universit
Zhang, Hong	University of Alberta
14:00-18:00	SaPP.20
	t Motion Planning and Control, pp. 444-450. Attachment
Sheng, Yongji	The University of Hong Kong
Ye, Jiajie	The University of Hong Kong

Wang, Siyu	The University of Hong Kong
Liu, Xinyu	The University of Hong Kong
Xi, Ning	The University of Hong Kong
14:00-18:00	SaPP.2
Kinematics Solution of Cable-Driven Pa	arallel Robots Considering Cable Sagging (I), pp. 451-458.
Gao, Feng	University of Science and Technology of China
Gao, Lifu	Hefei Institutes of Physical Science, Chinese Academy of Science
Wang, Daqing	Hefei Institutes of Physical Science, Chinese Academy of Science
Jiang, Man	Hefei Institutes of Physical Science, Chinese Academy of Science
14:00-18:00	SaPP.22
Modeling and Simulation of Submarine (1), pp. 459-464.	Launched UAV Formation and Formation Reconfiguration with Initial Discrete
Jia, Huayu	University of Chinese Academy of Sciences
Zheng, HuiLong	University of Chinese Academy of Sciences
Zhou, Hong	University of Chinese Academy of Sciences
Zhang, Qian	University of Chinese Academy of Sciences
Li, XinSong	Shenyang Aerospace University
14:00-18:00	SaPP.23
-	Method for Mobile Robots Based on Multi-Lidar Fusion, pp. 465-472.
GAO, HE	BeiHang University
Tao, Yong	Beijing University of Aeronautics and Astronautics
Liu, Xiaonan	Beijing New Materials and New Energy Technology Development Prom
Zhang, Yufan	Beihang University
Liu, Haitao	BUAA
Wan, Jiahao	Beihang University
14:00-18:00	SaPP.24
	: More Efficient Safety Monitoring Technology for Robotic Arms (1), pp. 473-478.
Gong, Zihang	YanTaiUniversity
Liu, Zhaowei	School of Computer and Control Engineering, Yantai University
Su, Hang	Politecnico Di Milano
14:00-18:00	SaPP.25
A Novel Dynamic Motion Planning Base Cao, Zhimin	ed on Error Tolerance Batch Informed Tree, pp. 479-483. Suzhou City University
14:00-18:00	SaPP.26
Gait Planning and Motion Control Based	d on Vrep Simulation for Quadruped Robot (1), pp. 484-489.
zhou, linqi	Nanchang Hangkong University
Chen, Zhihua	Nanchang Hangkong University, Beijing Institute of Technology
Liu, Jun	Nanchang Hangkong University
Liu, Zhi	Beijing Institute of Technology
chen, yumeng	Nanchang Hangkong University
Zhang, Liting	Nanchang Hangkong University
14:00-18:00	SaPP.27
Motion Planning and Tracking Control M	Method Based on CoppeliaSim for UGV in Irregular Terrain (I), pp. 490-495.
Huang, Jiale	School of Information Engineering, Nanchang Hangkong University
Chen, Zhihua	Nanchang Hangkong University, Beijing Institute of Technology
Zhong, Yongbo	Nanchang Hangkong University
Zeng, Wenrui	Nanchang Hangkong University
Ji, Chuanmin	NCHU
14:00-18:00	SaPP.28
Embroidery Robotics: An Innovative Ap	oproach to AI-Based Online Learning and Image Generation (I), pp. 496-503.
Chen, Ling	Hunan Normal University
Zhang, Tianxin	Hunan Normal University
Chen, Jing	Hunan Normal University
14:00-18:00	SaPP.29
A Fuzzy Inference System on Probabilis	stic Roadmap for Multi-Robot Path Planning, pp. 504-509.
Replogle, Brandon	California Polytechnic State University, San Luis Obispo
Vu Viao-Hua	California Polytechnic State University, San Luis Obisno

Yu, Xiao-Hua

California Polytechnic State University, San Luis Obispo California Polytechnic State University, San Luis Obispo

14:00-18:00	SaPP.30
Study on the Grinding Speed Model of Eccentric Shaft Cor	nponents of the RV Reducer for Robotic Arm, pp. 510-513.
Jiang, Zhemin	Beijing Beikai Electric Co
fang, haicheng	Beijing Beikai Electric Co
li, chao	Beijing Beikai Electric Co
liu, shilei	Beijing Beikai Electric Co
14:00-18:00	SaPP.31
An Event-Driven Asynchronous Feature Tracking Method ((<i>I</i>), pp. 514-519.
Xu, Haidong	Soochow Universit
Jin, Shizhao	Soochow Universit
Yu, Shumei	Soochow Universit
Sun, Rongchuan	Soochow University
Sun, Lining	Soochow University
14:00-18:00	SaPP.32
Design of an Impact-Resistant Elbow Mechanism for Whee	el-Legged Robot Crawling, pp. 520-525.
Ma, XS	Beijing Institute of Technology
Gao, Junyao	Beijing Institute of Technology
Qiu, Xuejian	Beijing Institute of Technolog
Zhao, Lingxuan	Beijing Institute of Technolog
Chen, Xuechao	Beijing Insititute of Technology
YU, Zhangguo	Beijing Institute of Technology
Huang, Qiang	Beijing Institute of Technology
14:00-18:00	SaPP.3
Movement Primitives with Explicit Constraints for Imitation	n Learning of Pick-And-Place Action, pp. 526-533. Attachment
Dong, Yue	Beijing Institute of Technolog
YU, Zhangguo	Beijing Institute of Technolog
Chen, Xuechao	Beijing Insititute of Technolog
Wang, Chenzheng	Beijing Instiitute of Technology
Huang, Qiang	Beijing Institute of Technology
14:00-18:00	SaPP.34
Depth Control of Cable Patrol Autonomous Underwater Ve	hicle Based on Reinforcement Learning (1), pp. 534-540.
Zhang, Yuenan	Hangzhou Dianzi Universit
Zhang, Xueting	Hangzhou Dianzi Universit
Zeng, Fanzong	Hangzhou Dianzi Universit
Sun, Shangwei	Hangzhou Dianzi Universit
liu, jingbiao	Hangzhou Dianzi Universit
zhou, zhe fang	Hangzhou Dianzi Universit
Guo, Chenhang	Hangzhou Dianzi Universit
Wang, Dongrui	Hangzhou Dianzi Universit
14:00-18:00	SaPP.35
Developing a Comprehensive Model for the Prevention of	

Developing a Comprehensive Model for the Prevention of Tension Neck Syndrome: A Focus on Musculoskeletal Disorder Prevention Strategies, pp. 541-548.

Sohani, Behnaz Adigun, Ifeoluwa Joshua Aliyu, Aliyu Rahmani, Amir Goher, Khaled University of Lincoln University of Lincoln University of Lincoln Castlet Ltd University of Nottingham