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Technical Program

We1B	Room B
Best Paper Session (Regular Sessions)	
Chair: Zhang, Hong	University of Alberta
10:30-10:45	We1B.1
<i>Crowd Density Estimation Via Multi-Scale Convolutional Neural Network in Single-Image</i> , pp. 1-6.	
Fu, Yuhao	Beijing University of Technology
Wang, Suyu	Beijing University of Technology
Yang, Bin	Beijing University of Technology
Yu, Chen	Beijing University of Technology
10:45-11:00	We1B.2
<i>Acceleration of the Development for Motion Planning Algorithms Using V-REP</i> , pp. 7-12.	
Li, Xingchen	Northeastern University
Chen, Wenlin	Northeastern University
Zhang, Wei	Northeastern University
Gao, Xifeng	Northeastern University
Hao, Lina	Northeastern University
11:00-11:15	We1B.3
<i>A Robot 3C Assembly Skill Learning Method by Intuitive Human Assembly Demonstration</i> , pp. 13-18. Attachment	
Cao, Zhiqi	Harbin Institute of Technology, Shenzhen
Hu, Haopeng	Harbin Institute of Technology, Shenzhen
Yang, Xiansheng	Harbin Institute of Technology, Shenzhen
Lou, Yunjiang	Harbin Institute of Technology, Shenzhen
11:15-11:30	We1B.4
<i>High Position Accuracy and 5 Degree Freedom Magnetic Driven Capsule Robot</i> , pp. 19-24. Attachment	
Hu, Hang	Beijing University of Technology
Yang, Xiuping	Beihang University
Song, Li	Beihang University
Wei, Wenxuan	Beihang University
Peng, Guanya	Beihang University
Feng, Lin	Beihang University
11:30-11:45	We1B.5
<i>Developing Robot Reaching Skill Via Look-Ahead Planning</i> , pp. 25-31.	
Liu, Tianlin	Peking University
Nie, Mengxi	Peking University
Wu, Xihong	Peking University
Luo, Dingsheng	Peking University
11:45-12:00	We1B.6
<i>Exploring Hardness and Geometry Information through Active Perception</i> , pp. 32-37.	
Xu, Songlin	University of Science and Technology of China
Lin, Nan	University of Science and Technology of China
Fan, Rui	University of Science and Technology of China
Wu, Peichen	University of Science and Technology of China
Chen, Xiaoping	University of Science and Technology of China
We1A	Room A
Intelligence in Image Guidance and Operation for Surgical Robotics (Invited Sessions)	
Chair: Hu, Yida	Harvard Medical School
Co-Chair: Su, Baiquan	Beijing University of Posts and Telecommunications
10:30-10:45	We1A.1
<i>Automatic Kidney CT Segmentation and Optimization Based on Self-Learning (I)</i> , pp. 38-43.	
Lv, Yi	School of Mechanical Engineering and Automation, Beihang University
Xu, Ying	Beihang University
Zhang, Xiaohui	Beihang University
Sun, Zhen	Beihang University

Wang, Junchen	Beihang University
10:45-11:00	We1A.2
<i>Extensible and Compressible Continuum Robot: A Preliminary Result (I)</i> , pp. 44-49.	
Su, Baiquan	Beijing University of Posts and Telecommunications
Jin, Mengdi	Beijing University of Posts and Telecommunications
Wu, Haocheng	Beijing University of Posts and Telecommunications
Liu, Liaoliao	Beijing University of Posts and Telecommunications
Liu, Hao	Beijing University of Posts and Telecommunications
Sun, Huali	Beijing University of Posts and Telecommunications
Wang, Jianing	Beijing University of Posts and Telecommunications
Lam, Lam	Beijing University of Posts and Telecommunications
Li, Yuejia	Beijing University of Posts and Telecommunications
Tang, Jie	Beijing Tian Tan Hospital, Capital Medical University
Kuang, Shaolong	Soochow University
11:00-11:15	We1A.3
<i>Force/position Control Simulation of Robot-Assisted Fracture Reduction (I)</i> , pp. 50-55.	
Lei, Jingtao	Shanghai University
Zheng, Gongliang	Shanghai University
Hu, Lei	Beihang University
Zhang, Lihai	The General Hospital of PLA
Wang, Tianmiao	Beihang University
11:15-11:30	We1A.4
<i>Coarse-To-Fine Deformable Model-Based Kidney 3D Segmentation (I)</i> , pp. 56-61.	
Chen, Jiahe	Beihang University
Zhang, Xiaohui	Beihang University
Wang, Junchen	Beihang University
11:30-11:45	We1A.5
<i>Automatic Path Planning for Navigated Pedicle Screw Surgery Based on Deep Neural Network (I)</i> , pp. 62-67.	
Cai, Dongyang	Beihang University
Wang, Zaiyue	Beihang University
Liu, Yajun	Beijing Jishuitan Hospital
Zhang, Qi	Beijing Jishuitan Hospital
Han, Xiaoguang	Beijing Jishuitan Hospital
Liu, Wenyong	Beihang University
11:45-12:00	We1A.6
<i>The Miniature Robotic Needling Device in Brachytherapy: Design and Modeling - an Approach towards Smart Needle System (I)</i> , pp. 68-73.	
PEI, xu	Beihang University
Xie, Wenhong	Beihang University
Hu, Yida	Harvard Medical School
We2B	Room B
Robot Mechanism (Regular Sessions)	
Chair: He, Li	Guangdong University of Technology
13:30-13:45	We2B.1
<i>Model and Study of Clamping Force for Micro-Gripper with PZT-Driven</i> , pp. 74-79.	
Wu, Zhigang	Jiangxi University of Science and Technology
Min, Chen	Jiangxi University of Science and Technology
13:45-14:00	We2B.2
<i>Design and Test of Harvesting Robot for Table-Top Cultivated Strawberry</i> , pp. 80-85.	
Feng, Qingchun	Beijing Research Center of Intelligent Equipment for Agriculture
14:00-14:15	We2B.3
<i>Research on Wheel-Wall Gap Calculation Method for Four-Magnetic Wheel Wall-Climbing Robot Walking on Cylindrical Tank</i> , pp. 86-90.	
Han, Taoyu	Southeast University
Qian, Ruiming	Southeast University

14:15-14:30	We2B.4
<i>Optimization and Dynamics of Six-Bar Mechanism Bionic Knee</i> , pp. 91-96.	
Liu, Sizhe	Northwestern Polytechnical University
We2A	Room A
Robot Control and Planning (Regular Sessions)	
Chair: Su, Baiquan	Beijing University of Posts and Telecommunications
13:30-13:45	We2A.1
<i>The Robot Arm Control Based on RBF with Incremental PID and Sliding Mode Robustness</i> , pp. 97-102.	
Guo, XiQing	University of Chinese Academy of Science
Li, Zongfeng	Technology and Engineering Center for Space Utilization Chinese
Sun, Guangbin	Nanyang Technological University
13:45-14:00	We2A.2
<i>A Trajectory Generation Method for Humanoid Robots Walking: Optimal Force Pattern Method</i> , pp. 103-109.	
Guo, Zuhua	Beihang University
Zeng, Yi	China Electronic Technology Group Corporation
Meng, Cai	Beihang University
14:00-14:15	We2A.3
<i>Research on Lane-Change Online-Planning for Automotive Vehicles Based on Model Predictive Control</i> , pp. 110-115.	
Li, Shaojie	Tsinghua University
Xiao, Lingyun	China National Institute of Standardization
Cheng, Shuo	Tsinghua University
Huang, Chao	Tsinghua University
Zhang, Bing	Tsinghua University
Chen, Xiang	Tsinghua University
14:15-14:30	We2A.4
<i>Trajectory Planning of Collaborative Robot for 3C Products Assembly</i> , pp. 116-121. Attachment	
Zhang, Han	Harbin Institute of Technology, Shenzhen
Yang, Xiansheng	Harbin Institute of Technology, Shenzhen
Hu, Haopeng	Harbin Institute of Technology, Shenzhen
Mou, Qingzhi	Harbin Institute of Technology, Shenzhen
Lou, Yunjiang	Harbin Institute of Technology, Shenzhen
We3B	Room B
Parallel Robot (Regular Sessions)	
Chair: He, Li	Guangdong University of Technology
14:30-14:45	We3B.1
<i>A Newton-Raphson and BP Neural Network Hybrid Algorithm for Forward Kinematics of Parallel Manipulator</i> , pp. 122-127.	
Zhang, Haiqiang	Beijing Jiaotong University
Fang, Hairong	Beijing Jiaotong University
Jiang, Bingshan	Beijing Jiaotong University
Zhao, Fuqun	Beijing Jiaotong University
Zhu, Tong	Beijing Jiaotong University
14:45-15:00	We3B.2
<i>Force-Position Hybrid Control of a Novel Parallel Manipulator with Redundant Actuation</i> , pp. 128-133.	
Zhang, Haiqiang	York University
Fang, Hairong	Beijing Jiaotong University
Zou, Qi	York University
Song, Majun	Beijing Jiaotong University
Zhu, Tong	Beijing Jiaotong University
15:00-15:15	We3B.3
<i>Kinematic Influence Coefficient Based Dynamic Modeling of a 6-DOF Parallel Manipulator System</i> , pp. 134-141.	
Chen, Xiaoguang	Beijing Institute of Space Long March Vehicle
Li, Chaofeng	Beijing Institute of Space Long March Vehicle
Yang, Jinpeng	Beijing Institute of Space Long March Vehicle
Jiao, Shenghai	Beijing Institute of Space Long March Vehicle

Dong, Wei	Harbin Institute of Technology
15:15-15:30	We3B.4
<i>Fuzzy Neural Network Algorithm Based on the Delay Compensation Force/position Control Structure of a Redundant Actuation Parallel Robot</i> , pp. 142-147.	
Wen, Shuhuan	Yanshan University
Zhao, Yanfang	Yanshan University
Yu, Haiyang	Yanshan University
Manfredi, Luigi	University of Dundee
Li, Xiongfei	Yanshan University
Wang, Sen	Yanshan University

We3A	Room A
Machine Learning and Control (Regular Sessions)	

Chair: Su, Baiquan	Beijing University of Posts and Telecommunications
14:30-14:45	We3A.1
<i>Reinforcement Learning for Robotic Safe Control with Force Sensing</i> , pp. 148-153.	
Lin, Nan	University of Science and Technology of China
Zhang, Linrui	University of Science and Technology of China
Chen, Yuxuan	University of Science and Technology of China
Chen, Zhenrui	University of Science and Technology of China
Zhu, Yujun	University of Science and Technology of China
Chen, Ruoxi	University of Science and Technology of China
Wu, Peichen	University of Science and Technology of China
Chen, Xiaoping	University of Science and Technology of China

14:45-15:00	We3A.2
<i>Pose Analysis of Humanoid Robot Imitation Process Based on Improved MLP Network</i> , pp. 154-159.	
Wen, Shuhuan	Yanshan University
Liu, Yang	Yanshan University
Zheng, Leibo	Yanshan University
Sun, Fuchun	Department of Computer Science and Technology, Tsinghua University
Fang, Bin	Tsinghua University

15:00-15:15	We3A.3
<i>Mobile Robot Path Planning Based on Q-Learning Algorithm</i> , pp. 160-165.	
Li, Shaochuan	Northeast Normal University
Wang, Xiuqing	Hebei Normal University
Hu, Liwei	Hebei Normal University
Liu, Ying	Hebei Normal University

15:15-15:30	We3A.4
<i>Towards Robotic Picking of Targets with Background Distractors Using Deep Reinforcement Learning</i> , pp. 166-171.	
Chen, Chen	Peking University
Li, Hsieh-Yu	Singapore University of Technology and Design
Zhang, Xuewen	Peking University
Liu, Xiang	Peking University
Tan, U-Xuan	Singapore University of Technology and Design

We4B	Room B
Robot Systems (Regular Sessions)	

Chair: Hu, Fuwen	North China University of Technology
15:50-16:05	We4B.1
<i>A Robot Programming by Demonstration Method for Precise Manipulation in 3C Assembly</i> , pp. 172-177. Attachment	
Zhao, Zhilong	Harbin Institute of Technology, Shenzhen
Hu, Haopeng	Harbin Institute of Technology, Shenzhen
Yang, Xiansheng	Harbin Institute of Technology, Shenzhen
Lou, Yunjiang	Harbin Institute of Technology, Shenzhen

16:05-16:20 We4B.2

A Human-Aware Robotic System for Mobile Robot Navigating in Multi-Floor Building with Elevator, pp. 178-183.

[Attachment](#)

Zhao, Junxin	Harbin Institute of Technology, Shenzhen
Chen, Yujing	Harbin Institute of Technology, ShenZhen
Lou, Yunjiang	Harbin Institute of Technology, Shenzhen

16:20-16:35 We4B.3

Software-Defined Cloud Manufacturing in the Context of Industry 4.0, pp. 184-190.

Yang, Chen	Beijing Institute of Technology
Lan, Shulin	The University of Chinese Academy of Sciences
Shen, Weiming	National Research Council Canada
Huang, George Q.	The University of Hong Kong
Wang, Lihui	KTH Royal Institute of Technology

16:35-16:50 We4B.4

Collision Detection Technology in Virtual Interventional Surgery, pp. 191-196.

Qi, Jinlong	Shanghai University of Engineering Science
Hu, Zhi	Shanghai University of Engineering Science
Zhang, Junfeng	Shanghai University of Engineering Science
Cui, Guohua	Shanghai University of Engineering Science

We4A Room A

Perception Systems (Regular Sessions)

Chair: Yuan, Shuai Shenyang Jianzhu University

15:50-16:05 We4A.1

Predicting Grasping Order in Clutter Environment by Using Both Color Image and Points Cloud, pp. 197-202.

Wu, Peichen	University of Science and Technology of China
Chen, Wenbo	University of Science and Technology of China
Liu, Hongrui	University of Science and Technology of China
Duan, Yifan	University of Science and Technology of China
Lin, Nan	University of Science and Technology of China
Chen, Xiaoping	University of Science and Technology of China

16:05-16:20 We4A.2

Surface Defect Classification of Steels Based on Ensemble of Extreme Learning Machines, pp. 203-208.

Liu, Yanan	Beijing Institute of Technology
Jin, Ying	Beijing Institute of Technology
Ma, Hongbin	Beijing Institute of Technology

16:20-16:35 We4A.3

DEGAN: De-Expression Generative Adversarial Network for Expression-Invariant Face Recognition by Robot Vision, pp. 209-214.

Jiang, Tianfu	Peking University
Wang, Tao	Peking University
Ding, Boyan	Peking University
Wu, Han	Peking University

16:35-16:50 We4A.4

Communication Efficiency and User Experience Analysis of Visual and Audio Feedback Cues in Human and Service Robot Voice Interaction Cycle, pp. 215-221.

Song, Haonan	Nankai University
Tan, Jeffrey Too Chuan	The University of Tokyo
Xing, Yi	Nankai University
Hou, Guan	Nankai University

We5B Room B

Soft Robot & Wearable Robot (Regular Sessions)

Chair: Hu, Fuwen North China University of Technology

16:50-17:05 We5B.1

Programmable Design of Soft Actuators and Robots, pp. 222-227. [Attachment](#)

Liao, Bing	Southwest University of Science and Technology
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Zang, Hongbin	University of Science and Technology of China
Liu, Yang	School of Manufacturing Science and Engineering, Key Laboratory
Wang, Yunjie	School of Manufacturing Science and Engineering, Key Laboratory
Lang, Xin	Southwest University of Science and Technology
Jin, Jin	School of Manufacturing Science and Engineering, Key Laboratory
Zhu, Nana	Southwest University of Science and Technology
Yin, Qiang	School of Manufacturing Science and Engineering, Key Laboratory
17:05-17:20	We5B.2
<i>Soft Actuators Driven by Humidity and Temperature Based on Plant Parchment</i> , pp. 228-234. Attachment	
Dai, Yao	Southwest University of Science and Technology
Qu, Tao	Southwest University of Science and Technology
Zang, Hongbin	University of Science and Technology of China
Liu, Cong	Southwest University of Science and Technology
17:20-17:35	We5B.3
<i>A Soft Actuator with Controllable Deformation Driven by Humidity</i> , pp. 235-241. Attachment	
Qu, Tao	Southwest University of Science and Technology
Zang, Hongbin	University of Science and Technology of China
Dai, Yao	Southwest University of Science and Technology
Liu, Dongsheng	Southwest University of Science and Technology; University of Sci
Liao, Bing	Southwest University of Science and Technology
17:35-17:50	We5B.4
<i>Human's Jump State Recognition Based on Surface Electromyography and Wearable Plantar-Ground Contact Sensor</i> , pp. 242-247.	
Lu, Yanzheng	Northeastern University
Wang, Hong	Northeastern University
Zhou, Bin	Northeastern University
Hu, Fo	Northeastern University
Xi, Hailong	Northeastern University
Zhihan, Zhang	Northeastern University
Li, Ya Lin	Northeastern University
We5A	Room A
Intelligent Control and Optimization (Regular Sessions)	
Chair: Yuan, Shuai	Shenyang Jianzhu University
16:50-17:05	We5A.1
<i>Tuning of SMC Parameters for Robotic Manipulator Based on Whale Optimization Algorithm</i> , pp. 248-253.	
Du, Meilin	Beihang University
Guo, Zuhua	Beihang University
Meng, Cai	Beihang University
17:05-17:20	We5A.2
<i>Distributed Finite-Time Leader-Following Consensus of Second-Order Multi-Agent Systems under Undirected and Directed Topology</i> , pp. 254-259.	
Liu, Xiongding	Yangtze University
Li, Tao	Yangtze University
Sun, Shiping	Yangtze University
Kong, Yu	Yangtze University
Zhang, Siwei	Yangtze University
17:20-17:35	We5A.3
<i>ESKF-Based Model Predictive Control for a Quadrotor Subject to Wind Disturbances and Measurement Noise</i> , pp. 260-265.	
Lv, Tong	Wuhan University of Science and Technology
Yang, Yanhua	Wuhan University of Science and Technology
Chai, Li	Wuhan University of Science and Technology
Li, Qingmin	Wuhan University of Science and Technology
17:35-17:50	We5A.4
<i>Research on Multi-Stage Robotic Grasping Based on Object Posture</i> , pp. 266-271.	
Zhang, Liangshan	Donghua University
LI, JIE	Donghua University

Sun, Xuemin	College of Mechanical Engineering, Donghua University
Bao, Jinsong	College of Mechanical Engineering, Donghua University

17:50-18:05 We5A.5

Vision-Based Adjustment with Toleration of Error before Grasping, pp. 272-277. [Attachment](#)

Duan, Yifan	University of Science and Technology of China
Lei, Ting	University of Science and Technology of China
Wu, Peichen	University of Science and Technology of China
Lin, Nan	University of Science and Technology of China
Chen, Wenbo	University of Science and Technology of China
Chen, Xiaoping	University of Science and Technology of China

WePO Foyer

Poster Session (Poster Sessions)

Chair: Wang, Zhidong Chiba Institute of Technology

10:00-10:30 WePO.1

Research on Boat Identification Based on Improved Loss Function of Deep Convolutional Neural Networks, pp. 278-283.

Guo, Yanhua	Tianjin University of Technology
Wang, Shuyu	Tianjin University of Technology
He, Hong	Tianjin University of Technology
Sun, Lei	Tianjin University of Technology
Ma, Shichao	Tianjin University of Technology

10:00-10:30 WePO.2

An Autonomous Navigation Method for Mobile Robot Based on ROS, pp. 284-290.

Wang, Shuyu	Tianjin University of Technology
Wang, Kai	Tianjin University of Technology
He, Hong	Tianjin University of Technology

10:00-10:30 WePO.3

Experimental Evaluation of Direct Monocular Visual Odometry Based on Nonlinear Optimization, pp. 291-295.

Liang, Jian	Dong Hua University
Cheng, Xin	Donghua University
He, Yezhou	College of Information Science and Technology, Dong Hua University
Li, Xiaoli	Shanghai Jiao Tong University
Liu, Huashan	Donghua University

10:00-10:30 WePO.4

A Balcony Dangerous Behavior Detection Algorithm Based on Video Image, pp. 296-301.

Sun, Rongchun	Changchun University of Science and Technology
Song, Xuemei	Changchun University of Science and Technology
Tang, Yue	Changchun University of Science and Technology
Wang, Jian	Changchun University of Science and Technology

10:00-10:30 WePO.5

Robot Motion Skills Acquisition Method Based on GU-ProMPs and Reinforcement Learning, pp. 302-308.

Wang, ChaoQi	Wuhan University of Technology
Fu, Jian	Wuhan University of Technology

10:00-10:30 WePO.6

A Novel P300-Based Interactive Method for Virtual Reality System, pp. 309-314.

Huang, Yong	South China University of Technology
Qu, Jun	South China University of Technology
Jing, Xiao	South China University of Technology
Li, Kendi	South China University of Technology

10:00-10:30 WePO.7

Cellular Structures Design for Wrist Rehabilitation Considering 3D Printability and Mechanics Lightweight, pp. 315-321.

Hu, Fuwen	North China University of Technology
Wu, Dongdong	North China University of Technology

10:00-10:30 WePO.8

Exploiting LSTM-RNNs and 3D Skeleton Features for Hand Gesture Recognition, pp. 322-327.

Guo, Heyuan	Changchun University of Science and Technology
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Yang, Yang	Changchun University of Science and Technology
Cai, Hua	Changchun University of Science and Technology
10:00-10:30	WePO.9
<i>Double-Terminal Asynchronous Adaptive Event-Triggered Control Based on State Observer</i> , pp. 328-333.	
Li, Mingsheng	Changchun University of Science and Technology
Yang, Yang	Changchun University of Science and Technology
Qi, Xiaozhong	Changchun University of Science and Technology
Li, Zhenxing	Changchun University of Science and Technology
10:00-10:30	WePO.10
<i>Design and Analysis of Precision Attitude Adjustment Mechanism for Large Space Antenna</i> , pp. 334-340.	
Zhang, Liang	Beihang University
Li, Chuankun	China Ship Development and Design Center
Wang, Yun	Beihang University
Gao, Zhihui	Beihang University
10:00-10:30	WePO.11
<i>Compliant Control Based on Impedance Principle under Unknown Environmental Stiffness</i> , pp. 341-346.	
Liu, Huichang	Southeast University
Zhou, Bo	Southeast University
GAN, Yahui	Southeast University
ma, xudong	Southeast University
10:00-10:30	WePO.12
<i>A Simulation Research Method for Large-Scale Parallel Truss Deployment Mechanism in Space</i> , pp. 347-353.	
Xie, Shaoming	Beihang University
Li, Chuankun	China Ship Development and Design Center
Liu, Xihui	Beihang University
Bian, Yushu	Beihang University
10:00-10:30	WePO.13
<i>Cross-Subject MEG Decoding Using 3D Convolutional Neural Networks</i> , pp. 354-359.	
Huang, Zebin	South China University of Technology
Yu, Tianyou	South China University of Technology
10:00-10:30	WePO.14
<i>Progress and Challenges of Hand-Eye-Foot Coordination for Mobile Manipulator</i> , pp. 360-366.	
Hu, Fuwen	North China University of Technology
Bao, Yunchang	North China University of Technology
10:00-10:30	WePO.15
<i>Construction of Hand Exoskeleton Movement State Space under Different Action Modes</i> , pp. 367-372.	
Yang, Jianyu	Northeastern University
Xie, Hualong	Northeastern University
Li, Pengfei	Northeastern University
Chen, Guanglei	Northeastern University
10:00-10:30	WePO.16
<i>Inverse Kinematics about a Seven-DOF Dual-Arm Robot Based on POE Formula</i> , pp. 373-379.	
Gao, Xingyu	Guilin University of Electronic Technology
Liu, Guanlong	Guilin University of Electronic Technology
Liao, Bin	Guilin University of Electronic Technology
10:00-10:30	WePO.17
<i>The Structure Design and Dynamics Simulation of a New Exoskeleton Robot</i> , pp. 380-386.	
Xie, Hualong	Northeastern University
Xie, Yao	Northeastern University
Li, Fei	Shenyang University of Technology
10:00-10:30	WePO.18
<i>Modeling of Magnetorheological Damper and Fuzzy PID Control of Intelligent Bionic Leg with Meniscus</i> , pp. 387-393.	
Xie, Hualong	Northeastern University
Li, Guanchao	Northeastern University
Li, Fei	Shenyang University of Technology

10:00-10:30	WePO.19
<i>Effects of User Fatigue Mental State on the Facial-Expression Paradigm of BCI</i> , pp. 394-400.	
Zhang, Teng	Xi'an Jiaotong University
Zhang, Xiaodong	Xi'an Jiaotong University
Zhang, Yingjie	Xi'an Jiaotong University
Lu, Zhufeng	Xi'an Jiaotong University
Li, Hanzhe	Xi'an Jiaotong University, China
10:00-10:30	WePO.20
<i>All-Attitude Motion Tracking Estimation Based on Euler Angles Using MARG Sensors</i> , pp. 401-406.	
Xu, Xiaolong	Shandong University
Tian, Xincheng	Shandong University
Zhou, Lelai	Shandong University
10:00-10:30	WePO.21
<i>A Joint Torque Redistribution Approach for Energy Efficient Electrical Quadraped Robot</i> , pp. 407-412.	
Li, Tianfa	Shandong University
Zhou, Lelai	Shandong University
Li, Yibin	Shandong University
Rong, Xuewen	Shandong University
10:00-10:30	WePO.22
<i>Enhanced Diversity Based Particle Filter Using Local Linear Embedding</i> , pp. 413-418.	
Yuan, Shuai	Shenyang Jianzhu University
zhang, yingfan	Shenyang Jianzhu University
Song, Haolin	Shenyang Jianzhu University
guo, yanru	Shenyang Jianzhu University
Zhang, feng	Shenyang Jianzhu University
10:00-10:30	WePO.23
<i>Anchor Point Based Hough Transformation for Automatic Line Detection of Engineering Drawings</i> , pp. 419-424.	
liu, tianbo	Shenyang Jianzhu University
hua, quanbin	Shenyang Jianzhu University
Yuan, Shuai	Shenyang Jianzhu University
Yin, Linxue	Shenyang Jianzhu University
cheng, gong	Shenyang Jianzhu University
10:00-10:30	WePO.24
<i>Eye Contact Detection Via CNN-Based Gaze Direction Regression</i> , pp. 425-431.	
Li, Birong	Guangdong University of Technology
Zhang, Hong	University of Alberta
He, Li	Guangdong University of Technology
Guan, Yisheng	Guangdong University of Technology