

2018 2nd International Conference on Robotics and Automation Sciences (ICRAS 2018)

**Wuhan, China
23-25 June 2018**



IEEE Catalog Number: CFP18L72-POD
ISBN: 978-1-5386-7371-3

**Copyright © 2018 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:	CFP18L72-POD
ISBN (Print-On-Demand):	978-1-5386-7371-3
ISBN (Online):	978-1-5386-7370-6

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

2018 2nd International Conference on Robotics and Automation Sciences

ICRAS 2018

Table of Contents

Preface.....	vii
--------------	-----

➤ **Image Processing Technology and Application**

Automatic Three-Dimensional Ultrasound Scanning System Based on RGB-D Camera	1
<i>JiuLong Lan, Qinghua Huang</i>	
A Computer Aided System for Nasopharyngeal Carcinoma Segmentation and Visualization Based on CT Images	7
<i>Yuxiao Qi, Yong Yin, Tengxiang Li, Bin Liu, Lisheng Wang</i>	
Recognition of Yoga Poses through an Interactive System with Kinect Device	12
<i>Edwin W. Trejo, Peijiang Yuan</i>	
Research of EEG Recognition Algorithm Based on Motor Imagery.....	18
<i>Yan Wang, NanTong, Xiaoyan Shen, Zitao Peng</i>	
Comparison of Different Level Fusion Schemes for Infrared-Visible Object Tracking: An Experimental Survey	23
<i>Chengwei Luo, Bin Sun, Qiao Deng, Zihao Wang, Dengwei Wang</i>	
The Combination of Features Extracted from Different Parts for Person Re-Identification	30
<i>Wenqing Huang, Li Mei</i>	
Vehicle Re-Identification Based on Coupled Dictionary Learning	34
<i>Panpan Wang, Bo Li</i>	

➤ **Electronic Information Engineering and Applications**

Real-Time Contour Error Estimation with NURBS Interpolator.....	41
<i>Hongjian Zhang, Xiaoyong Ni, Pan Hu, Youjia Yuan</i>	

A Path Planning Algorithm for UAV Based on Improved Q-Learning	46
<i>Chao Yan, Xiaoja Xiang</i>	
On Real-Time Performance of Multitasking with RTAI	51
<i>Lan Zhao</i>	
Structural Properties of Optimal Wireless Transmission Using Harvested Energy	57
<i>Lei Miao</i>	
A High Precision and Efficient Time-to-Collision Algorithm for Collision Warning Based V2X Applications	62
<i>Chao Qu, Wen-Yuan Qi, Ping Wu</i>	
Quantization of CRC-Aided Successive Cancellation List Decoder for Polar Codes.....	70
<i>Xin Zheng, Jiahao Wang, Bo Tang</i>	
Glottal Features under Workload in Human-Robot Interaction	74
<i>Wensong Bai, Xiao Yao, Daohan Yang, Ning Xu, Yuxing Gu, Xuewu Zhang</i>	
Research on Ant Colony Optimization Tabu Search and Genetic Fusion Algorithm	79
<i>Fang Chen, Pingyu Deng, Tengfei Ding, Weihao Liang</i>	
Architecture Design and Key Technologies of Electric Vehicle Charging Network Operation Service System Based on Cloud Computing	84
<i>Junliang Li, Yang Zhang, Xiaobing Li, Xin Gao, Pei Wang, Rui Wang</i>	

➤ Robot System Design and Intelligent Control

High Precise Localization of Mobile Robot by Three Times Pose Correction.....	89
<i>Zhenggang Jiang, Bingrui Liu, Lin Zuo, Jun Zhang</i>	
A Methodology to Manage Point Cloud Data for Use in Robotic Applications	95
<i>Akinyemi Dosumu, Mingli Han, Chang Duan</i>	
Design and Optimization of Mini Underwater Robot Based on ANSYS and CAESES	100
<i>Qian Chen, Kong-wei Ma, Bo Huang, Ming Zhong</i>	
Research on Improved ACO Algorithm-Based Multi-Robot Odor Source Localization	106
<i>HongLei Che, Congling Shi, Xuan Xu, Jian Li, Binbin Wu</i>	
Research of Universal Modular Cooperation Robot Control System	112
<i>Yang Tao, Tongtong Li, Shuxuan Liu, Tao Deng, Dongsheng Xin</i>	
A Hybrid Inverse Kinematics for 2n-DOF Redundant Manipulator Based on General Spherical Wrist	117
<i>Ya'nan Lou, Shichun Di</i>	

Control of a Space Robot with Flexible Manipulator using Generalized Decoupling Technique	123
---	-----

Sharmila Kayastha, Jayantha Katupitiya, Garth Pearce

The Design and Analysis of a Light Explosive Ordnance Disposal Manipulator.....	129
---	-----

Songbo Deng, He Cai, Ke Li, Yuanchao Cheng, Yongjian Ni, Yanbo Wang

Intelligent Manipulator Based on Head Posture Detection	134
---	-----

Guoliang Gu, Peng Xu, Xiaoyan Shen, Yan Wang, Liyuan An

➤ Machinery Automation and Control

Simulation of Iterative Learning Control Strategy in Powder Metallurgic Forming Machine	139
---	-----

Jun Gao

Experimental Study on the Serrated Chip While Machining Titanium Alloy	143
--	-----

Liu Dong, Duan Ruxuan

Preliminary Testing of an Angled Sliding Shoe for Potential Human Energy Harvesting Applications	147
--	-----

Haisheng Xia, Peter B. Shull

Improving Road holding and Ride Comfort of Vehicle Using Dual Active Aerodynamic Surfaces	151
---	-----

Yiwan Wu, Zhengqiang Chen

Automatic Fault Detection and Alarm Device for Ash-slag Disposal System of Electrostatic Precipitator.....	156
--	-----

Jingsong Zeng, Jingjing Cheng, Yuhua Zeng

Incorporating Learning and Aging Attributes of Workers into A DES Model	160
---	-----

Maji Ibrahim Abubakar, Qian Wang

Research on Fault Diagnosis of the Fuel System Based on Improved Multi-Output SVM	164
---	-----

Dong Wang, Guo-hou Cao, Qiang Ning, Lei He, Qin Yin, Yu-man Zhang

Automatic Locking Mechanism Design for Lunar Sample Sealing	169
---	-----

Ji Ming, Kong Ling-xuan, Sun Liang

Sliding Mode Control of a Drilling End-Effector with3-SPR Parallel Mechanism	175
--	-----

Ge Yan, Laixi Zhang, Jun Peng, Shuai Wang

Application of Pressure Liquid Level Detection Technology in the Automatic Micropipette Module	179
--	-----

Yufeng Yao, Jingwen Ma, Haiyong Liu

Lower Limb Exoskeleton Hybrid Phase Control Based on Fuzzy Gain Sliding Mode Controller	184
<i>Zhengyang Li, Wei Dong, Likun Wang, Chaofeng Chen, Jiaqi Wang, Zhijiang Du</i>	
Model Predictive Control for T-S Fuzzy System with Random Actuator Saturation and Packet Losses	191
<i>Na Liu, Xiaoming Tang, Li Deng, Shuang Yang</i>	