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# Intelligent Robotics and Applications

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# Preface

The market demand for skills, knowledge and adaptability have positioned robotics to be an important field in both engineering and science. One of the most highly visible applications of robotics has been the robotic automation of many industrial tasks in factories. In the future, a new era will come in which we will see a greater success for robotics in non-industrial environments. In order to anticipate a wider deployment of intelligent and autonomous robots for tasks such as manufacturing, healthcare, entertainment, search and rescue, surveillance, exploration, and security missions, it is essential to push the frontier of robotics into a new dimension, one in which motion and intelligence play equally important roles.

The 2010 International Conference on Intelligent Robotics and Applications (ICIRA 2010) was held in Shanghai, China, November 10–12, 2010. The theme of the conference was “Robotics Harmonizing Life,” a theme that reflects the ever-growing interest in research, development and applications in the dynamic and exciting areas of intelligent robotics. These volumes of Springer’s *Lecture Notes in Artificial Intelligence* and *Lecture Notes in Computer Science* contain 140 high-quality papers, which were selected at least for the papers in general sessions, with a 62% acceptance rate. Traditionally, ICIRA 2010 holds a series of plenary talks, and we were fortunate to have two such keynote speakers who shared their expertise with us in diverse topic areas spanning the rang of intelligent robotics and application activities.

We would like to thank the International Advisory Committee for their guidance and advice. We are also especially grateful to the Program Committee members for their rigorous and efficient reviewing of the submitted papers, and the Organizing Committee for their enormous efforts and excellent work. In addition, we greatly appreciate the Ministry of Education, National Natural Science Foundation of China, Science and Technology Commission of Shanghai Municipality, Shanghai Jiao Tong University, State Key Laboratory of Mechanical System and Vibration, State Key Lab of Digital Manufacturing Equipment & Technology, and Springer for their support.

It has been our pleasure to organize the 2010 International Conference on Intelligent Robotics and Applications. We hope it is your pleasure to read these selected papers by some of the highest-quality researchers and practitioners in the world of intelligent robotics. We also hope that they provide inspiration for your own research and help advance the state of the art in the multidisciplinary field of robotics and its application.

August 2010

Xiangyang Zhu  
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# Table of Contents – Part I

## Bionic Dexterous Hand

Cartesian Impedance Control on Five-Finger Dexterous Robot Hand DLR-HIT II with Flexible Joint . . . . .	1
<i>Zhaopeng Chen, Neal Y. Liu, Minghe Jin, Shaowei Fan, and Hong Liu</i>	
Changeable Grasping Force Unit for Under-Actuated Gripper with Self-adaptive Grasping . . . . .	13
<i>Deyang Zhao and Wenzeng Zhang</i>	
Efficient Grasp Planning with Reachability Analysis . . . . .	26
<i>Zhixing Xue and Ruediger Dillmann</i>	
Development of an Anthropomorphic Prosthetic Hand for Man-Machine Interaction . . . . .	38
<i>Nan Li, Li Jiang, Dapeng Yang, Xinqing Wang, Shaowei Fan, and Hong Liu</i>	
Dexterous and Self-adaptive Under-Actuated Humanoid Robot Hand: GCUA Hand II . . . . .	47
<i>Demeng Che and Wenzeng Zhang</i>	
A Novel Coupled and Self-adaptive Under-Actuated Grasping Mode and the COSA-DTS Hand . . . . .	59
<i>Jie Sun, Wenzeng Zhang, and Haitao Sun</i>	
Empirical Copula Driven Hand Motion Recognition via Surface Electromyography Based Templates . . . . .	71
<i>Zhaojie Ju and Honghai Liu</i>	
A Continuous Control Scheme for Multifunctional Robotic Arm with Surface EMG Signal . . . . .	81
<i>Pinghua Hu, Shunchong Li, Xinpu Chen, Dingguo Zhang, and Xiangyang Zhu</i>	

## Modeling and Control of Systems Involving Hysteresis

On the Robust Control of Systems Preceded by Differential Equation-Based Hysteresis Nonlinearities . . . . .	92
<i>Ying Feng, Juan Du, and Chun-Yi Su</i>	

A Generalized Play Operator for Modeling and Compensation of Hysteresis Nonlinearities . . . . .	104
<i>Mohammad Al Janaideh, Omar Aljanaideh, and Subhash Rakheja</i>	
Hysteresis Modeling of Piezoelectric Actuators Using the Fuzzy System . . . . .	114
<i>Pengzhi Li, Guoying Gu, Leijie Lai, and Limin Zhu</i>	
On PSO Based Bouc-Wen Modeling for Piezoelectric Actuator . . . . .	125
<i>ZhenYan Wang and JianQin Mao</i>	
Operator-Based Robust Nonlinear Control for Ionic Polymer Metal Composite with Uncertainties and Hysteresis . . . . .	135
<i>Aihui Wang, Mingcong Deng, and Dongyun Wang</i>	
Modeling of Hysteresis Nonlinearity Based on Generalized Bouc-Wen Model for GMA . . . . .	147
<i>Yongxin Guo and Jianqin Mao</i>	
<b>Control System Modeling and Applications</b>	
Motion Dynamics Modelling of an Electric Wheel Robot . . . . .	159
<i>Xuezhu Wang, Xiangtao Zhuan, Guilin Zheng, and Zheng Chen</i>	
Sliding Mode Control of Hybrid Joints for Wheeled Mobile Manipulators with Markovian Switching and Bounded Torques . . . . .	171
<i>Lei Dai, Dan Huang, and Zhijun Li</i>	
Timestamp Based Predictive Robot Control System over Real-Time Industrial Ethernet . . . . .	183
<i>Huasong Min, Tianmiao Wang, Hongxing Wei, and Zhenglin Liu</i>	
Design and Experimental Research on a Fast Zero-Finding Algorithm Based on the Incremental Angle Encoder . . . . .	195
<i>Zhonghua Miao, Xuyong Wang, Chengliang Liu, and Xiaojin Zhu</i>	
Decentralized Synchronization and Output Tracking Control of Nondiffusively Coupled Complex Dynamical Networks . . . . .	204
<i>Gequn Liu, Xiaoming Xu, and Lei Liu</i>	
Manipulation of a Mobile Modular Manipulator Interacting with the Environment with the Assistance of Tactile Sensing Feedback . . . . .	214
<i>Jingguo Wang and Yangmin Li</i>	
An RTC-Based Intelligent Programming System for Service Robots . . . . .	226
<i>Masaru Adachi, Zhen Zhang, Peihua Chen, and Qixin Cao</i>	

Marine Engine State Monitoring System Using Distributed Precedence Queue Mechanism in CAN Networks . . . . .	237
<i>Hyun Lee, Dong kyu Yi, Jun seok Lee, Gye-do Park, and Jang Myung Lee</i>	

Modeling and Fault Tolerant Controller Design for PM Spherical Actuator . . . . .	246
<i>Zheng Li</i>	

## Intelligent Control and Their Applications

Artificial Neural Network to Predict the Surface Maximum Settlement by Shield Tunneling . . . . .	257
<i>Jinli Qiao, Jianqin Liu, Wei Guo, and Yitong Zhang</i>	

Applying Grey-Fuzzy-Fuzzy Rule to Machine Vision Based Unmanned Automatic Vehicles . . . . .	266
<i>Chin-Wen Chuang and Jau-Rong Li</i>	

AWARE: Autonomous Wireless Agent Robotic Exchange . . . . .	276
<i>Cory Q. Nguyen, Benny Leong, Eric T. Matson, Anthony Smith, and Juan P. Wachs</i>	

Application of Wearable Miniature Non-invasive Sensory System in Human Locomotion Using Soft Computing Algorithm . . . . .	288
<i>Murad Alaqtash, Huiying Yu, Richard Brower, Amr Abdelgawad, Eric Spier, and Thompson Sarkodie-Gyan</i>	

The Mathematical Model and Control Scheme of a Four-Legged Robot Based on GZ-I and Note Module . . . . .	300
<i>Yinfeng Fang, Houxiang Zhang, Xiuli Li, and S.Y. Chen</i>	

## Robot and Automation in Tunneling

Electromechanical Coupling Model for Cutterhead Driving System of Shield Machines . . . . .	310
<i>Jianzhong Sun, Ran Liu, Yaqin Luo, and Wei Sun</i>	

Dimension Optimization of an Orientation Fine-Tuning Manipulator for Segment Assembly Device . . . . .	318
<i>Chao Wu, Xin-Jun Liu, and Jinsong Wang</i>	

Rotation and Gate Movement Compound Control of Screw Conveyor Hydraulic System with Disturbance Compensation . . . . .	329
<i>Lintao Wang, Guofang Gong, Hu Shi, and Huaiyin Liu</i>	

Applications of the Overlapping Nodes Method in Simulating Crack-Expansion under the Action of TBM Cutter . . . . .	341
<i>Kui Zhang and Yi-min Xia</i>	

The Simulation Analysis of the TBM Disc Cutter Phase Angle . . . . .	348
<i>Kai Wang, Qing Tan, Yimin Xia, and Zijun Xu</i>	
The Design of Shield Tunnelling Machine Cutter Header's Cutting Performance Test Bed . . . . .	356
<i>Zongming Zhu, Yimin Xia, Dezhi Luo, and Tao Teng</i>	
The Effect of TBM Hydraulic Piping System Parameters on FSI Vibration . . . . .	363
<i>Jinghua Xie, Ke Tian, and Dawei Yang</i>	
Station Point Optimization of Total Station in Shield Tunneling Method Based on Set-Covering . . . . .	372
<i>Bolan Li, Xu Zhang, and Limin Zhu</i>	
Study on Earth Pressure Acting on Cutter Face Based on Nonlinear Optimization . . . . .	383
<i>Xiangtao Hu, Yong'an Huang, and Zhouping Yin</i>	
Incident Angle Measurement of Collimated Laser Based on the Pinhole Principle . . . . .	392
<i>Minghua Pan and Guoli Zhu</i>	

## Robot Mechanism and Design

A Novel Design for the Self-reconfigurable Robot Module and Connection Mechanism . . . . .	400
<i>Enguang Guan, Weixin Yan, Dongsheng Jiang, Zhuang Fu, and Yanzheng Zhao</i>	
The Forward Kinematics Analysis of 6-3 Stewart Parallel Mechanisms . .	409
<i>Shili Cheng, Hongtao Wu, Chaoqun Wang, Yu Yao, and Jianying Zhu</i>	
Portable Multi-axis CNC: A 3-CRU Decoupled Parallel Robotic Manipulator . . . . .	418
<i>Dan Zhang, Zhen Gao, and Jijie Qian</i>	
Carton Motion-Moment Diagram and Stiffness Characteristics . . . . .	430
<i>Guowu Wei, Ruirui Zhang, and Jian S. Dai</i>	
Flexible Foot Design for Biped Walking on Uneven Terrain . . . . .	442
<i>Chen Koon Toh, Ming Xie, Hejin Yang, Guoqing Zhang, Quoc Phuong Bui, and Bo Tian</i>	
4WD Skid-Steer Trajectory Control of a Rover with Spring-Based Suspension Analysis: Direct and Inverse Kinematic Parameters Solution . . . . .	453
<i>Edgar Martínez-García and Rafael Torres-Córdoba</i>	

Topology and Analysis of Three-Phalanx COSA Finger Based on Linkages for Humanoid Robot Hands . . . . .	465
<i>Deyang Zhao and Wenzeng Zhang</i>	
Design of a Bionic Saltatorial Leg for Jumping Mini Robot . . . . .	477
<i>Xin Fu, Fei Li, Weiting Liu, Cesare Stefanini, and Paolo Dario</i>	
Asymmetrical Prototype of a Five-Wheeled Robot and Maneuver Analysis . . . . .	488
<i>He Xu, Jinfeng Zhao, Dawei Tan, and Zhenyu Zhang</i>	
Development of Controllable Two-Way Self-locking Mechanism for Micro In-Pipe Robot . . . . .	499
<i>Yong Xue, Jian-zhong Shang, Zi-rong Luo, Jin-wei Qiao, and Chen Cheng</i>	
Trench-Crossing Capability Analysis of a Reconfigurable Tracked Mobile Robot . . . . .	509
<i>Mo Hei, Jianzhong Shang, Zirong Luo, and Zhuo Wang</i>	
<b>Service Robotics</b>	
Automatic Cooking Robot with a Novel Feeding System . . . . .	519
<i>Weixin Yan, En Guang Guan, Wentao Ma, Zhuang Fu, and Yanzheng Zhao</i>	
Multi-sensor Based Autonomous Underwater Manipulator Grasp . . . . .	530
<i>Zhihu Xiao, Guohua Xu, Fuyuan Peng, Guo yuan Tan, Xiaolong Xu, Xiong Shen, and Bo Yang</i>	
The Targets Pursuit for Multi-robot System with Hybrid Wireless Sensor Networks . . . . .	538
<i>Kun Shi, Zhiqiang Cao, Wenwen Zhang, and Chao Zhou</i>	
A Fast Robot Path Planning Algorithm Based on Image Thinning . . . . .	548
<i>Ke Xu, Ruiqing Fu, Lei Deng, Yongsheng Ou, and Xinyu Wu</i>	
Automatic Micro-manipulation Based on Visual Servoing . . . . .	558
<i>Xiangjin Zeng, Yanduo Zhang, and Xinhan Huang</i>	
Self-calibration of a Stewart Parallel Robot with a Laserranger . . . . .	570
<i>Yu Liu, Hong Liu, Fenglei Ni, Wenfu Xu, and Feng Han</i>	
Real-Time Binaural Sound Source Localization Using Sparse Coding and SOM . . . . .	582
<i>Do-hyeong Hwang and Jong-suk Choi</i>	

Design and Control of a Hydraulic-Actuated Leg Exoskeleton for Load-Carrying Augmentation . . . . . 590  
*Heng Cao, Jun Zhu, Chunming Xia, Hong Zhou, Xiao Chen, and Yu Wang*

**Computer Vision and Applications**

Globally Optimal and Region Scalable CV Model on Automatic Target Segmentation . . . . . 600  
*Huijie Fan, Wei Dong, and Yandong Tang*

The Registration of UAV Down-Looking Aerial Images to Satellite Images with Image Entropy and Edges . . . . . 609  
*Baojie Fan, Yingkui Du, Linlin Zhu, and Yandong Tang*

Fast 3D Time of Flight Data Segmentation Using the U-V-Histogram Approach . . . . . 618  
*Thomas Schamm, Arne Rönnau, and J. Marius Zöllner*

Scale Invariant Feature Transform (SIFT) Parametric Optimization Using Taguchi Design of Experiments . . . . . 630  
*Dominic R. Maestas, Ron Lumia, Gregory Starr, and John Wood*

Robust Visual Monitoring of Machine Condition with Sparse Coding and Self-Organizing Map . . . . . 642  
*Haining Liu, Yanming Li, Nan Li, and Chengliang Liu*

An Evolving Machinery Fault Diagnosis Approach Based on Affinity Propagation Algorithm . . . . . 654  
*Nan Li, Yanming Li, Haining Liu, and Chengliang Liu*

Closed Form Solution for the Scale Ambiguity Problem in Monocular Visual Odometry . . . . . 665  
*Isaac Esteban, Leo Dorst, and Judith Dijk*

Recognizing 3D Human Motions Using Fuzzy Quantile Inference . . . . . 680  
*Mehdi Khoury and Honghai Liu*

Evaluating the Fuzzy Coverage Model for 3D Multi-camera Network Applications . . . . . 692  
*Aaron Mavrinac, Jose Luis Alarcon Herrera, and Xiang Chen*

Emotion Recognition in Facial Image Sequences Using a Combination of AAM with FACS and DBN . . . . . 702  
*Kwang-Eun Ko and Kwee-Bo Sim*

## Sensor Design, Multi-sensor Data Fusion

An Analysis of Node Localization Error Behavior in Wireless Sensor Networks .....	713
<i>Dan Hai, Hui Zhang, and Zhiqiang Zheng</i>	
Consensus Target Tracking in Multi-robot Systems .....	724
<i>Zongyao Wang, Dongbing Gu, Tao Meng, and Yanzhi Zhao</i>	
A Decentralized Junction Tree Approach to Mobile Robots Cooperative Localization .....	736
<i>Hua Mu, Meiping Wu, Hongxu Ma, and Wenqi Wu</i>	
Optimized Particles for 3-D Tracking .....	749
<i>Huiying Chen and Youfu Li</i>	
Design of a Finger-Tip Flexible Tactile Sensor for an Anthropomorphic Robot Hand .....	762
<i>Yuan-Fei Zhang, Yi-Wei Liu, Ming-He Jin, and Hong Liu</i>	
<b>Author Index</b> .....	775