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Preface

The 2008 International Conference on Intelligent Robotics and Applications (ICIRA 2008) was the first event in this conference series. It was advocated by the International Workshop on Robotic Grasping and Fixturing in June 2007, Wuhan, China. Robotics research, however, involves a wide spectrum of research and applications from the first industrial manipulator to Mars rovers, and from surgery robotics to cognitive robotics. Industrial and real-world applications are the force driving the research frontier further forward. The aim of the ICIRA 2008 conference is to promote interactions and collaborations between disciplines, which are beneficial in bringing fruitful solutions to the forefront, and to be an international forum that brings together those actively involved in intelligent robotics and applications.

These volumes of Springer's *Lecture Notes in Artificial Intelligence* and *Lecture Notes in Computer Science* contain papers accepted for presentation at ICIRA 2008, held in Wuhan, China, October 15–17, 2008. The conference received 552 submissions from all over the world, which were subsequently peer refereed by the Program Committee, with the assistance of external referees. Among them, 265 high-quality papers were accepted for presentation at the conference, covering the most active topics in intelligent robotics such as robot cognition, robot learning, robot vision, motion planning, multifingered manipulation and intelligent control. Advances in robotized equipments applied in rehabilitation and medical robotics, health care and artificial limbs, digital manufacturing, electronic manufacturing, and manufacturing automation are also reported. The authors come from the following countries and regions: Australia, Austria, China, France, Germany, Hong Kong, Iran, Italy, Japan, Korea, Malaysia, Poland, Romania, Singapore, Slovakia, Spain, Sweden, Switzerland, Taiwan, UK, and USA. In addition, ICIRA 2008 held a series of plenary talks, where we were fortunate to have such keynote speakers as *Peter Luh, Tianmiao Wang, Jiping He, and Jun Wang,* who shared their expertise with us in diverse topic areas spanning the range of intelligent robotics and application activities.

We would like to thank all who made this conference possible: the authors for submitting papers, the external referees for their scrupulous work, the invited speakers for their excellent talks, the International Advisory Committee for their guidance and advice. We are also especially grateful to the Program Committee members for their rigorous and efficient work, and to the Organizing Committee members for their enormous efforts. In addition, we greatly appreciate Huazhong University of Science and Technology (HUST), National Natural Science Foundation of China (Grant No. 50810305023), State Key Laboratory of Digital Manufacturing Equipment and Technology, State Key Laboratory of Robotic Technology and Systems, State Key Laboratory of Robotics and State Key Laboratory of Mechanical Systems and Vibration for their financial support

and assistance. Sincere thanks also go to the editors of the Lecture Notes and Springer for their support in publishing this volume in a timely manner.

It has been our pleasure to organize ICIRA 2008. We believe that ICIRA 2008 provided an interesting opportunity to present and discuss the latest theoretical advances and real-world applications in this multidisciplinary research field. We hope it is your pleasure to read these selected papers by high-quality researchers and practitioners in the field of intelligent robotics. We also hope that they also provide inspiration for your own research and help advance the state of the art in the multidisciplinary field of robotics and its applications.

October 2008

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