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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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