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Experimental Robotics VII

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Preface

Experimental Robotics is at the core of validating robotics research for both its systems science and theoretical foundations. Because robotics experiments are carried out on physical, sometimes complex, machines whose controllers are subject to uncertainty, devising meaningful experiments and collecting statistically significant results pose important and unique challenges in robotics. Robotics experiments serve as a unifying theme for robotics system science and algorithmic foundations. These observations have led to the creation of the International Symposia on Experimental Robotics in 1989. The meetings are bi-annual and focus on research where theories and principles have been validated by experiments.

The Seventh International Symposium on Experimental Robotics (ISER 2000) brought together a group of about 80 researchers to discuss recent results and relevant trends in experimental robotics. Held in Waikiki, Hawaii on December 11–13, the symposium was chaired by Prof. Daniela Rus (Dartmouth College) and Prof. Sanjiv Singh (Carnegie Mellon University). Prof. Song Choi from the University of Hawaii chaired the local arrangements committee. The meeting consisted of three invited talks, one invited panel, and fifty-seven contributed presentations in a single track. Each paper was refereed by the program chairs plus at least two members of the program committee. The program committee consisted of:Vincent Hayward (Canada), Oussama Khatib (USA), Herman Bruyninckx (Belgium), Alicia Casals (Spain), Raja Chatila (France), Peter Corke (Australia), Eve Coste-Maniere (France), John Craig (USA), Paolo Dario (Italy), Gerd Hirzinger (Germany), Jean-Pierre Merlet (France), Yoshihiko Nakamura (Japan), Daniela Rus (USA), Kenneth Salisbury (USA), Sanjiv Singh (USA), Tsuneo Yoshikawa (Japan), and Alex Zelinsky (Australia).

Topics reported at ISER 2000 included humanoids and human-robot interactions, perception systems, assembly and manipulation, medical and field applications, locomotion, multi-robot systems, modeling and motion planning, control, and navigation and localization. Several research projects presented at ISER 2000 are clearly breakthroughs in the field and will likely have a big impact in the future. Representatives include the three talks given by our invited speakers. Russell Taylor (Johns Hopkins University) presented an impressive medical robot system and argued a great case for how the impact of Computer-Integrated Surgery on medicine in the next 20 years will be as great as that of Computer-Integrated Manufacturing on industrial production over the past 20 years. Hirochika Inoue (University of Tokyo) described an amazing suite of humanoid robots and their tasks and presented a research agenda for a human-centered robotized society. Ralf Koeppe (DLR, Germany) described their progress with light-weight robotic manipulators and advocated an exciting range of applications to personal and service robotics.

We are very grateful to Dartmouth College and to Carnegie Mellon University for their generous financial support of ISER 2000. We would like to thank all the participants and their contributions, which made our meeting exciting and inspiring. We also thank David Bellows, Alan Guisewite, Monica Hopes, Catherine LaTouche, Dot Marsh and Alison Sartonov for their help with coordinating the meeting and producing the proceedings.

March 2001

Daniela Rus
Sanjiv Singh

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