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O. Khatib and J.K. Salisbury (Eds)

Experimental Robotics IV

**The 4th International Symposium,
Stanford, California, June 30 - July 2, 1995**



Springer

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Preface

Experimental Robotics IV — The Fourth International Symposium was held at Stanford University, California, from June 30 to July 2, 1995. This meeting was the fourth in a series of symposia designed to bring together, in a small group setting, researchers from around the world who are in the forefront of experimental robotics research. The goal of these symposia is to provide a forum for research in robotics that focuses on theories and principles that are validated by experiments.

The experimental robotics symposia are organized every two years in a rotating fashion around North America, Europe, and Asia. The first Symposium, organized by V. Hayward and O. Khatib, was held in Montréal, Canada in June 1989. The second, organized by R. Chatila and G. Hirzinger, was held in Toulouse, France, in June 1991. The third, organized by T. Yoshikawa and F. Miyazaki, was held in Kyoto, Japan, in October 1993. The proceedings of Experimental Robotics Symposia are published by Springer-Verlag. In addition to the proceedings, these symposia have produced compilations of video segments illustrating the reported research, which are available as Video Proceedings.

The International Program Committee of the Fourth International Symposium on Experimental Robotics was composed of the following individuals:

Oussama Khatib	Stanford University, U.S.A (Co-Chair)
Kenneth Salisbury	MIT, U.S.A (Co-Chair)
Alicia Casals	Universitat Politècnica de Catalunya, Spain
Raja Chatila	LAAS/CNRS, France
John Craig	Adept Technology, Inc., U.S.A.
Paolo Dario	Scuola Superiore S. Anna, Italy
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Vincent Hayward	McGill University, Canada
Gerhard Hirzinger	DLR, Germany
Fumio Miyazaki	Osaka University, Japan
Yoshihiko Nakamura	Tokyo University, Japan
Jean-Pierre Merlet	INRIA, France
James Trevelyan	University of Western Australia
Tsuneo Yoshikawa	Kyoto University, Japan

The proceedings of the fourth symposium includes the fifty-five contributions that were

selected by the International Program Committee and presented during the three days of the meeting. These contributions represent work in the areas of design, perception, control, planning, and robotic applications of research groups from Belgium, Canada, Denmark, England, France, Germany, Italy, Japan, Portugal, Spain, Switzerland, and the United States. In addition, a small group of observers from industry and funding agencies was invited to take part in this meeting.

The fourth symposium began with a keynote address by Brian Carlisle, the Chairman and CEO of Adept Technology, on "Robot Technology for System Integration." Received with interest, the keynote presentation generated numerous questions and comments from the participants.

In addition to the technical sessions, the fourth symposium featured a panel on "Challenges for the Next Decade," with Brian Carlisle and John Craig as moderators. This was the first time at ISER that we organized a session with speakers from industry, and we feel it was a very worthwhile addition. The speakers at this panel were Craig Battles (Boeing), Steve Holland (GM), Vic Scheinman, Tyler Schilling (Schilling), Stan Rosen-schein (Teleos), and Antonio Terrible (Tecnomare, Italy). The panel served as a useful vehicle to inspire introspection and interaction among the participants.

As we prepared for this meeting, our foremost objective was to create a collegial atmosphere with ample opportunity for discussion and exchange of the ideas. In view of the feedback we have received, this goal was largely reached. We believe that the credit for this success goes to the authors for the quality of their contributions and to all the participants for their availability and active involvement in the discussions all along the three days of this meeting.

On behalf of the International Program Committee, we would like to thank Dean James Plummer and Professor Bernard Roth for their support and warm welcoming addresses. Also, we would like to express our appreciation and thanks to Adept Technology, Interval Research Corporation, and Lockheed Martin Corporation, for the financial support they extended to the fourth symposium. We are grateful to Jacqui Taylor of MIT for her assistance in the preparation of the final proceedings.

Our special thanks go to the staff and students of Stanford University who generously gave of their time to help in the organization of this meeting – many thanks to Arancha Casal, the Symposium Secretary, and to Andreas Baader, Mike Costa, Stan Birch, Ralf Koeppe, Sascha Lewald, Mina Madrigal, Allison Okamura, Francisco Valero, and Stef Sonck.

The international program committee has asked Alicia Casals (Barcelona, Spain) and Anibal Almeida (Coimbra, Portugal) to co-chair the Fifth Symposium to be held in Barcelona, Spain in June 1997.

Oussama Khatib and Kenneth Salisbury
Stanford, California, August 1996

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