Forward

The 2000 IEEE International Conference on Robotics and Automation, ICRA2000, held in San Francisco April 24-26, 2000, is the 17th in a series of annual conferences sponsored by the IEEE Robotics & Automation Society.

During the 20th century, the body of concepts, methods, and systems that we refer to as "Robotics and Automation" emerged as an major field. While its origins can be traced to the industrial revolution that began more than 150 years ago, it continues to evolve today. Now, at the dawn of the new millennium, robotics is undergoing a major transformation in scope and dimension. From a largely dominant industrial focus, robotics is rapidly expanding into the challenges of unstructured environments. Interacting with, assisting, serving, and exploring with humans, the emerging robots will increasingly touch people and their lives. These advances in intelligent machines will impact a wide range of areas in manufacturing, space, underwater, services, health care, entertainment, design, and automation, among others. The emphasis on these new frontiers is reflected in the theme for the 2000 Conference, Robotics and Automation: The Next Generation. The 2000 conference provides a unique opportunity for researchers and engineers in our community to reflect on the field's accomplishments, new developments, and future directions.

Our goal for ICRA 2000 was to develop a technical program with the highest quality in content and organization. In planning the conference, a special effort was made to create a conference structure that is conducive to quality interactions between participants. The structure, which is reflected in conference Proceedings, provides for a reduced number of parallel tracks and includes, in addition to the regular tracks, a series of theme-oriented symposia. Organized by leading researchers in their respective fields, these symposia serve to present summaries of many of the sub-disciplines that comprise the field of robotics and automation. The 28 symposia sessions cover topics ranging from the field's foundations to the emerging applications of robotics and manufacturing automation.

To provide the participants with a more detailed outline of the technical program, we have edited this Conference Digest which represents a visual brief of the technical sessions. Each session in the program is displayed as a full page in this Digest.

The entire ICRA2000 Program consists of 111 technical sessions for a total of 641 papers chosen from the nearly 1100 submissions. The 641 selected papers, as a whole, stress the conference theme, which is further highlighted by four keynote presentations and two plenary sessions. The four keynote presentations are: Vision - Enabling Robots to Sense,

Control and Interact, by Takeo Kanade, Controlling Intelligent Machines, by Hendrik Van Brussel, Motion Planning: A Journey of Robots, Molecules, Digital Actors, and Other Artifacts, by Jean-Claude Latombe, and Hands On: Haptics and Telesurgery, by Kenneth Salisbury. Organized by Georges Giralt, the two plenary sessions are entitled Robotics: the 20th Century and Beyond and National and International R&D Projects and Programs. The Banquet address, Brains and Brawn in Humanoid Autonomy, is given by Stephen Jacobsen. The program also includes a panel on Education, two video sessions, five tutorials, and nine workshops.

We would like to express our appreciation and thanks to all the members of the Organizing Committee, Technical Program Committee, Video Proceedings Committee for their efforts and contributions to the program and organization of this conference. Our special thanks go to the volunteers and staffs for the long hours and hard work they have generously given to the conference. But above all ICRA2000 is the result of the contributions of its authors. We would like to thank all the authors, speakers, participants, and organizers for taking part in and contributing to ICRA2000.

Brian Carlisle	*Oussama Khatib*
General Chairman	*Program Chairman*