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Preface

This book contains the written contributions to the program of the First International Joint Conference on "Computer Vision, Virtual Reality, and Robotics in Medicine" and "Medical Robotics and Computer Assisted Surgery" (CVRMed-MRCAS'97) held in Grenoble, France, March 19-22, 1997.

One major objective of the conference was to present highly innovative and promising research in medical imaging, virtual reality, robotics and computer-integrated therapy and surgery. The other major objective of the conference was to bring together clinicians, engineers, scientists and industrial representatives to define the current status of this very rapidly expanding domain and to discuss future directions and new applications. Thus, the conference organizers strongly encouraged clinical papers in order to measure the actual clinical impact of this technical and scientific development through the feedback of clinical users.

There were 161 submitted full papers, and each was evaluated by at least three members of the Program Committee, including one scientific and one clinical referee. Based on these evaluations, 76 regular and 15 clinical papers were selected for presentation during the conference. This final decision was made during a two-day meeting held in Grenoble and attended by a representative subset of the committee composed of nine members (Nicholas Ayache, Richard Bucholz, Philippe Cinqun, Eric Grimson, Ron Kikinis, Stéphane Lavallée, Ralph Mösges, Russell Taylor and Jocelyne Troccaz).

All contributions were presented in a single track, leaving time for three poster sessions and a panel discussion. A number of stands were reserved for industrial exhibitions and research demonstrations. A separate tutorial session presenting the views of scientific and clinical experts of the domain was held the day before the conference.

This book is organized into sections, each of which corresponds to a session of the conference. Some of these sessions present the latest results and tools for generic technical topics applied to a large variety of clinical problems. Other sessions focus on clinical specialities and include the description of more specific tools and results about their clinical application.

The papers were divided into 46 oral (long or short) and 45 poster presentations. The papers selected for poster presentation are included in the relevant sessions and were given a brief oral presentation in these sessions to make the poster sessions more attractive. All presentations were given the same format in this book (4 pages for a clinical paper and 10 pages for a regular one). In the table of contents the papers are labeled oral or poster according to the way they were presented.

The geographical distribution of the accepted contributions is the following: 36 from European countries (other than France), 22 contributions from France, 31 from North America (USA and Canada), and 2 from Asia (Japan).

Considering the success of the previous CVRMed and MRCAS conferences held successively in Stanford (AAAI), Pittsburgh (CMU and Shadyside Hospital), Nice (INRIA) and Baltimore (Johns Hopkins Institutions), the union of CVRMed and MRCAS, each of them bringing its particular lighting on this fascinating domain, is a very exciting event!

Grenoble, January 1997

Jocelyne Troccaz,
Eric Grimson,
Ralph Mösges.

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The members of the program committee deserve special acknowledgements for their superb job in reviewing all the papers in due time, and for their support in the organization of the conference.

All the members of the Computer Assisted Medical Interventions research team of the TIMC laboratory were involved at some point in the organization of this conference. We wish to thank them all for their helpful contribution.

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