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Information Processing in Computer-Assisted Interventions

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Proceedings

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Preface

Thanks to scientific and technological advances in many parallel fields, medical procedures are rapidly evolving towards solutions which are less invasive and more effective. In the previous decades, information processing in diagnostic imaging provided many solutions to physicians in particular within radiology, neurology, cardiology, nuclear medicine and radiation therapy departments. In the last decade, progress in computer technology, imaging and mechatronics has allowed computer-assisted intervention (CAI) systems and solutions to penetrate the intervention and operating rooms.

CAI's major challenge in the beginning of the twenty-first century is real-time processing, analysis and visualization of large amount of heterogeneous, static and dynamic patient data, and understanding of surgery for designing intelligent operating rooms and developing advanced training tools. Excellent scientists, engineers and physicians have created many advanced research groups around the world and are starting to provide innovative, breakthrough solutions. *Information Processing in Computer-Assisted Interventions (IPCAI)* aims at gathering the best work in this field and allowing authors to present and discuss it in detail. IPCAI wishes to select and present the highlights of research in CAI and aims at distinguishing itself for the quality of the presented papers and the excitement and depth of the discussions they generate.

How Is IPCAI Positioned Related to Other Conferences in This Area ?

Medical Image Computing and Computer-Assisted Intervention (MICCAI) has established itself as both a society and an annual event where a set of selected paper in both fields of medical image computing (MIC) and are presented. MICCAI often gathers around 1,000 participants presenting mostly MIC, but also CAI papers. The Computer Assisted Radiology and Surgery (CARS) series of conferences, on the other hand, focus mostly on the CAI community. It gathers a large number of interested scientists and engineers in this field. It bases itself mostly on long abstract submissions and aims at gathering a large number of players and at creating a place of encounter for academic and industrial researchers in this field. IPCAI considers itself as a complementary event to both MICCAI and CARS, filling an existing gap.

IPCAI 2010: The Review Process

This year, there were 40 full paper submissions (40% from North America, 39% from Europe and 21% from Asia). Four editors managed the assignment of the anonymous submissions to the reviewers. There were 61 reviewers: 85% of the papers had 3 reviewers, 10% had 2 reviewers, and 5% had 4 reviewers. Additionally, each editor reviewed the papers he had in charge. Reviewers were asked to provide detailed, journal-quality reviews. After the review phase, 16 papers were initially selected according to a weighted score only. A threshold of 3 on 4 was used. Papers out of the scope of the conference were rejected automatically. The editors asked the authors of 'conditionally accepted' papers to revise their manuscript according to reviewers' and editor's suggestions. A final version was then submitted. These final

versions were reviewed by the editors only. They checked whether the reviewers' suggestions were taken into account. All the authors integrated the reviewers' suggestions and improved the manuscript accordingly. The final distinction between oral presentation and short oral plus poster was made according to the average scores given by the anonymous reviewers.

IPCAI: It Is Your Conference

We want to thank all authors who submitted to IPCAI for their effort in submitting high-quality long papers. We also want to thank the reviewers for providing detailed high-quality reviews, very helpful for the authors, whether their papers were accepted or not. Both authors and reviewers contributed to the quality of the conference.

IPCAI 2010: The Idea

IPCAI aims at being extremely selective in order to present only the highlights in CAI. Co-located with the CARS conference, IPCAI 2010 presented the first in a series of events to be organized in the upcoming years. We hope that IPCAI keeps its promises and offers its participants and the CAI community a series of strong and innovative contributions. We also aim at creating a friendly and constructive atmosphere to share ideas and concepts for enhancing research and innovations in this area.

June 2010

Nassir Navab
Pierre Jannin

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