While ISMAR is expanding and reaching out to new communities, we proudly continue to present to you the best research papers in the field of Mixed and Augmented Reality. The technical program of ISMAR 2009, in the tradition of the proceedings of seven previous ISMAR, two ISAR, two ISMR, and two IWAR meetings, this year takes the form of a Science and Technology (S&T) track. This program is comprised of 24 papers, 28 posters, as well as an array of keynote talks, demonstrations, tutorials, workshops and the tracking competition. All of these elements of the program are the result of dedicated hard work by members of the conference committee and additional volunteers, and we would like to recognize their efforts.

This year, the conference received 130 submissions from 23 countries. The accepted papers and posters came from 16 countries, demonstrating the global nature of active research in mixed and augmented reality. The accepted papers reflect the diverse nature of the field. You will find sessions devoted to tracking on standard and mobile computing platforms, real world modeling, rendering, user interfaces, human factors, and applications. We are confident that these sessions will provide inspirations for your own work, as will the posters, demonstrations, tutorials, and workshops.

ISMAR 2009 continues its recognition of outstanding papers with the Best Paper, Best Student Paper, and Honorable Mention awards. These awards are determined by the Award Committee, composed of pioneering and leading MR and AR researchers from around the globe. We gratefully acknowledge the large amount of time and effort that the Area Chairs and Award Committee invested into this process. We also thank the international reviewers for all their work. It is due to the volunteer efforts of all these people that ISMAR stands as the world’s premier symposium for mixed and augmented reality research.

Statistics

Of the 124 paper submissions, we accepted 24 papers, resulting in an overall paper acceptance rate of 19.3%. These percentages are the result of a very stringent review process. The final program is of very high quality. A more detailed view shows that 19.6% of the long submissions were directly accepted and further 9.1% in a reduced form as short papers. Of the short paper submissions only 8.6% were accepted. We received only very few poster submissions. 66.7% of them were accepted. Furthermore, 15 (22.7%) of the long paper submissions and 14 (24.1%) of the short papers were accepted as scaled-down two-page poster versions. Five of these were subsequently withdrawn by the authors.

Reviewing Process

ISMAR has used a two-tiered reviewing system for a number of years. We invited a group of twelve Area Chairs, experts in areas of AR and MR research selected from different regions of the world. We assigned each submission to one of the Area Chairs. The Area Chair assigned Program Committee (PC) members to each submission. Long papers had at least four reviewers, short papers and posters had at least three, with an attempt to balance young reviewers with fresh views and perspectives with established reviewers with long experience in the field of AR. PC members were recruited by the program chairs from the international research community according to recent publications in relevant venues. Area chairs could also discretionary invite additional external reviewers to voice their expert opinion on a paper. After the review period, the Area Chairs ran a five day discussion period with the reviewers of each paper to settle on an overall evaluation and arrive at a summarizing initial recommendation. Program and Area Chairs gathered in Orlando, FL, on July 16 and 17 to make final decisions. At this meeting, we examined each submission and its reviews and debated whether the submission had sufficient contribution to merit acceptance. The discussion was guided by a number of general rules that were clearly identified during the meeting.
and applied to all decisions in order to make the process as fair and transparent as possible. It was the prime goal to accept as many high quality submissions as possible. We did not consider a maximum number of acceptances.

**Distinction between full papers, short papers and posters**

In accordance with this year’s call for papers, we required long papers to present rather mature research, covering a lot of background, technical details and evaluations. We expected short papers to present less mature work, e.g., missing a full evaluation or a complete implementation. However, the work already had to have a clearly visible novel contribution and enough depth to be worth a 4 page publication in the ISMAR proceedings. Posters were considered to be the first presentations of novel ideas without substantial implementation or testing, or novel applications without significant new technical advancement thus far. As a community, we may want to sharpen this distinction for the years to come.

**Value of Posters**

We consider posters – as well as demonstrations – to be one of the core elements of ISMAR. We expect them to spark exciting discussions and thus turn ISMAR into a true breeding ground for future directions of research, technical development and applications of Augmented Reality. For this reason, we will have several poster and demonstration sessions and also invite all presenters to show their work during breaks whenever they can find the time.

There has been some discussion whether or not to include posters in the proceedings. We think that it is important to have a written record of ideas when they are first presented to the public – such that due reference can be paid to the very originators of novel ideas at their earliest time of presentation. For this reason, posters are included as 2 page abstracts in the proceedings. Yet, we do not formally consider them to be “true” publications. Therefore, we allow future ISMAR paper submissions on the same topic without considering them to be double submissions.

**Publication Ethics**

Careful attention was paid to submissions that contained duplicated work. We distinguished different kinds of duplications. We considered papers and posters as double submissions and thus in violation of research ethics, if the same material with only minor variations was submitted in parallel to several venues. Plagiarism and self-plagiarism is another case of ethically wrong behavior, characterized by using text passages that are copied verbatim from earlier publications without being marked as a quotation. In both cases, submissions were returned to the authors without reviews and all affected stakeholders were informed. A third case is the problem of slicing new research results too thin among several publications, as may happen when authors report on incremental research or when they participate in several, disjoint research communities. Such cases were discussed at length and in detail. Some of the decisions to accept paper submissions as posters were based on our hope that a good novel idea in its infancy could be presented with more substantial results at a future conference without the risk of being considered a double submission.

**Reviewing Ethics**

Single blind reviewing anonymity was observed during the reviewing process. We strictly prevented Program and Area Chairs from seeing reviewer identities for submissions where they had a conflict of interest. At the PC meeting, Program and Area Chairs left the room for discussions of submissions coming from authors who had worked at the same organization, directly collaborated with them in a project, had been their students or teachers, or had had a sponsorship relationship in the past three years.

We welcome you cordially to ISMAR 2009! We expect this to be a very lively and exciting time for all of us to meet, be inspired and be inspiring in many presentations and discussions. We tried to arrange the program in a way that would leave much time for direct communication between all of you and also to have many direct, hands-on experiences of the current state of the art. Be involved!