A Report on the IJCAI-07 Program

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■ In this article, I report on the primary features of the IJCAI-07 program, including its theme, schedule, and organization. In particular, I discuss an effective and novel presentation format at IJCAI in which oral and poster papers were presented in the same sessions categorized by topic area.

The Twentieth International Joint Conference on Artificial Intelligence (IJCAI-07) was held in Hyderabad, India, January 6–12, 2007. The theme of the conference was "AI and its benefits to society," with the aim of highlighting and raising our research interests for problems of direct relevance to society. It was our hope that the theme of the conference could also be discerned in the technical papers and that the work be used towards the realization of that goal.

The theme was particularly evident in the invited talks. Keynote speaker Raj Reddy spoke on "The AI Challenges in Developing Economies," Patrick Doherty spoke on "Unmanned Aerial Vehicle Research: Challenges and Prospects," Carole Goble delivered a talk titled "The e-Scientist Is the Semantic Web's Friend (or a Friend of a Friend)," and Hideyuki Nakashima delivered a talk titled "Cyber-Assisting Real World with Ambient Intelligence and Semantic Computing." Martha Pollack spoke on "Intelligence Assistive Technology: The Present and the Future," while Devika Subramanian delivered a talk on "Events, Patterns, and Analysis: Forecasting International Conflict by Analyzing Wire News Stories."

Interestingly, in direct response to the theme of the IJCAI conference, a new center was created at the Indian Institute for Information Technology (IIIT), Hyderabad, on "AI Technology and Its Benefits to Society." Sponsored in part by the Byrraju and Satyam Foundations, the center plans to have an international visiting scholars program in addition to its permanent faculty, researchers, and students.[1]

The IJCAI conference included 471 technical papers. The workshop program, chaired by Carles Sierra, featured 23 workshops. There were also 19 tutorials. The tutorial program was chaired by Cynthia Braezeal. More than 200 students who were taking an AI course taught by Rajeev Sangal at IIIT attended the tutorials as part of their course work. Overall, IJCAI-07 had more than 1,200 participants.

We were pleased to receive an unprecedented number of paper submissions (1365), representing authors from 45 different countries. We accepted 471 papers (34.5 percent), with 212 for oral presentation (15.5 percent) and 259 for poster presentation (19 percent). The proceedings of IJCAI-07 were published by AAAI Press and distributed as CDs (see figure 1). Along with previous IJCAI proceedings, the papers are also available online at www.ijcai.org. Hard copies can also be ordered.

Reviewing

The reviewing process represented an enormous amount of work, donated by many volunteers of the international AI research community, who carried out their extensive reviewing work during the summer of 2006. The papers were distributed among a senior program committee (SPC) of 23 members, a program committee (PC) of 86 members, and a set of 997 reviewers.

By early July, each paper had been assigned to one supervisor SPC member and one PC member. The blind reviewing algorithm generated more than 2,500 assignments, which maximized the matched bids of the SPC and PC members and the matched interest keywords. The algorithm recorded the justifications for each assignment in terms of the specific bid and keyword match. PC members then further assigned each paper to three reviewers chosen from a pool of reviewers recruited by the PC.

When completed, the reviews were made available to the authors, who had a chance to rebut them. The PC member held an anonymous discussion among the reviewers based on the authors' rebuttals and finally made a definite or undecided recommendation for each paper in agreement with the correspondent SPC member. We held an SPC meeting September 16–17, 2006, during which all undecided papers were carefully discussed. At the end of the meeting, all papers had a definite decision. The final notifications were sent out on September 18. Figure 2 shows the distribution of accepted papers among the 10 top-level areas.

The reviewers and program committee members were asked to recommend papers for distinction. We were pleased to see that quite a few papers
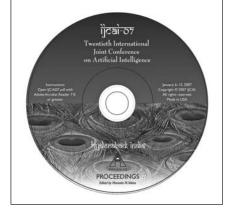

Figure 1. The Cover of the IJCAI-07 Proceedings CD.

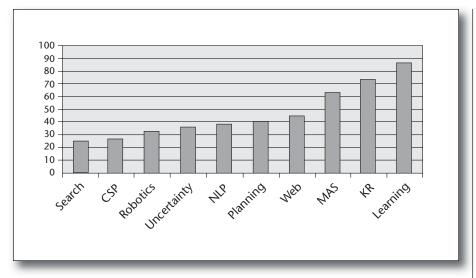(Thanks to IJCAI-07 LAC for their original art.)

Figure 2. Distribution of Papers per Area.

had been identified, out of which a subcommittee of the senior program committee selected three as the IJCAI-07 distinguished papers. These papers are "Building Structure into Local Search for SAT" by Duc Nghia Pham, John Thornton, and Abdul Sattar; "Automated Heart Wall Motion Abnormality Detection from Ultrasound Images Using Bayesian Networks" by Maleeha Qazi, Glenn Fung, Sriram Krishnan, Romer Rosales, Har-

ald Steck, R. Bharat Rao, Dr. Don Poldermans, and Dhanalakshmi Chandrasekaran; and "Performance Analysis of Online Anticipatory Algorithms for Large Multistage Stochastic Integer Programs" by Luc Mercier and Pascal Van Hentenryck.

Program Schedule and Organization

At IJCAI-07, we introduced a new presentation format consisting of oral / poster technical sessions with oral and poster presentations in the same session. The oral and poster papers were divided by topic and presented in the same sessions. This new format was very well received, and it enabled extensive discussion of both the oral and poster papers. Figure 3 captures some of the ambience at the technical sessions.

We also designed the IJCAI-07 schedule for the overall technical pro-

Figure 3. Posters.

Time	Tuesday, January 9	Wednesday, January 10	Thursday, January 11	Friday, January 12
9:15–10:30	*Keynote Talk:* Raj Reddy	Patrick Doherty, Devika Subramanian	Hideyuki Narashima, Martha Pollack	Carole Goble
10:30–11:00	Coffee Break			
11:00–12:30	6 sessions	5 sessions	6 sessions	5 sessions
12:30–14:00	Lunch			
14:00–15:30	6 sessions	5 sessions	6 sessions	5 sessions
15:30–16:00	Coffee Break			
16:00–17:30	6 sessions	5 sessions	6 sessions	5 sessions
18:00–19:30	*C&T Talk:* Peter Stone		*Res. Exc. Talk:* Alan Bundy	

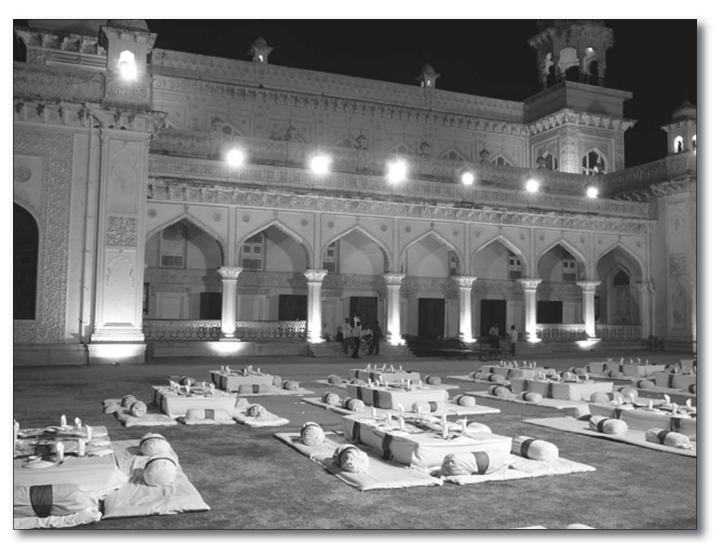*Figure 4. IJCAI-07 Program at a Glance.*

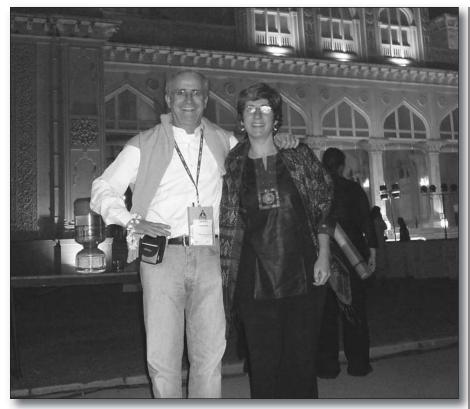*Figure 5. Sit-Down Banquet at the Chowmahalla Palace.*

*Figure 6. IJCAI-07 Conference Chair Ramon Lopez de Mantaras
and IJCAI-07 Program Chair Manuela M. Veloso.*

the selected papers for presentation. The oral/poster sessions at IJCAI-07 provided some empirical evidence for the format's success.

Conclusion

There were many people responsible for making IJCAI-07 successful, and their names are exhaustively listed in the conference proceedings. My special thanks go to Ramón López de Mántaras, the conference chair for IJCAI-07, and the local arrangements committee, who provided a fantastic conference setup for the IJCAI-07 technical program where the hospitality and the wonders of India were a real treat. As an example, figure 5 shows the Chowmahalla Palace, one of the palaces of the Nizam of Hyderabad, where the sit-down banquet for more than 1000 people was held.

Through chairing the IJCAI-07 program, I got to know and truly to enjoy the rich research community and wide variety of excellent work in a very special and privileged manner. The conference website[2] has kept all the detailed information about the conference, including the videos of the invited talks.

Notes

1. More details about this center are available at www.iiit.ac.in.

2. www.ijcai-07.org.

Manuela M. Veloso (see figure 6) is the Herbert A. Simon Professor of Computer Science at Carnegie Mellon University. She received her Ph.D. in computer science from Carnegie Mellon University in 1992. She received a B.S. degree in electrical engineering in 1980 and an M.Sc. in electrical and computer engineering in 1984 from the Instituto Superior Técnico in Lisbon. Veloso's research involves teams of intelligent robots where cognition, perception, and action are seamlessly integrated to address planning, execution, and learning in complex, dynamic environments. Veloso is a Fellow of the American Association of Artificial Intelligence and vice president of the RoboCup International Federation. She was awarded an NSF Career Award in 1995 and the Allen Newell Medal for Excellence in Research in 1997. Veloso was program cochair of AAAI-05 and the program chair of IJCAI-07.

gram with several principles in mind, including (1) no invited talks would be presented in parallel with technical paper sessions; and (2) each technical session would have a duration of 90 minutes followed by a 30 minute break to allow for ample and focused discussion and interaction among the oral and poster presenters and the conference participants. Table 1 shows a sample of the schedule with the keynote and invited talks, the Computer and Thought Award talk by Peter Stone, the Research Excellence Award talk by Alan Bundy, and the multiple parallel paper presentation sessions. Ron Brachman was presented the Distinguished Service Award at the opening ceremony.

We chose to have a maximum of six parallel sessions. On Wednesday, the sixth parallel session was taken by a special symposium organized by the Local Arrangements Committee on "AI and Industry." On the last day, we also had five parallel sessions. The distribution of the actual number of oral and poster papers (constrained by their topics) by a specific number of

parallel technical sessions was nontrivial. Given 212 oral and 259 poster papers, and a total of 66 sessions (see figure 4), we created 52 novel oral/poster sessions, 51 of which had 3 oral and 5 poster presentations, and one had 3 oral and 4 posters. The 52 oral/poster sessions then accommodated a total of 156 oral and the total 259 posters. The remaining 56 oral papers were divided into 14 oral-only sessions with four oral presentations each. When possible, these oral-only sessions were also strategically scheduled when the motivation for poster discussion would have been problematic, namely before lunch time, at the end of the days when there were no following invited talks, and in the last five sessions of the conference.

Two major factors contributed to the innovation of the oral/poster format. First, with the growth of the field, IJCAI receives a very large number of submissions and, inevitably, also accepts a large number of papers. Second, a large number of parallel sessions and nonstructured large poster sessions may not effectively expose