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The 1999 Asia-Pacific Conference on Intelligent-Agent Technology

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The Asia-Pacific Conference on Intelligent-Agent Technology (IAT) is a high-quality, high-impact biennial agent conference series. IAT'99 was the first meeting in this new series and was held in Hong Kong from 14 to 17 December. It was sponsored by Hong Kong Baptist University, the Croucher Foundation, the Epson Foundation, The MIT Press, the Association for Computing Machinery (ACM) Hong Kong, and the Institute of Electrical and Electronics Engineers Hong Kong Section Computer Chapter and in cooperation with ACM Special Interest Groups in Artificial Intelligence (SIGART), Knowledge Discovery in Data (SIGKDD), and Computer-Human Interaction (SIGCHI). Jiming Liu (Hong Kong Baptist University) and Ning Zhong (Yamaguchi University, Japan) were the program chairs, and Setsuo Ohsuga (Waseda University) and Ernest Lam (Hong Kong Baptist University) were the general chairs.

IAT'99 successfully brought together over 150 researchers and practitioners to share their original research results and practical development experiences in intelligent-agent technology. The participants were from Australia, Austria, Belgium, Brazil, Canada, China, Finland, France, Germany, Greece, Hong Kong, Japan, Korea, Macau, Malaysia, Norway, Portugal, Singapore, Slovenia, Spain, Sweden, Taiwan, the United Kingdom, and the United States.

As the first international forum on agent technology taking place in the Asia-Pacific region, IAT'99 was aimed at capturing the essence of the current state of the art in intelligent-agent technology and identifying the new challenges and opportunities that this area is or will be facing. The most important feature of IAT'99 was that it emphasized a multifaceted, holistic view of this emerging technology, from its computational foundations in terms of models, methodologies, and tools for developing a variety of embodiments of agent-based systems to its practical impact on tackling real-world problems.

Much work went into the IAT'99 technical program: Original, high-quality papers were solicited for various aspects of theories, applications, and case studies related to agent technologies. Full papers were submitted from 24 countries and regions of all continents. Each submitted paper was reviewed by at least three experts on the basis of technical soundness, relevance, originality, significance, and clarity. Based on the review reports, 29 regular papers (27.8 percent) and 36 short papers were accepted for presentation and publication. Seventeen technical paper presentation sessions were organized that focused on agent architectures, multiagent cooperation, distributed intelligence, formal agent theories, knowledge discovery and data-mining agents, personalized web agents, software agents, mobile agents, and agent-supported enterprise. K. Suzanne Barber, Anuj Goel, and Cheryl E. Martin from the University of Texas at Austin won the IAT Best Paper Award with their paper entitled "The Motivation for Dynamic Adaptive Autonomy in Agent-Based Systems."

Intelligent-agent technology is one of the most exciting, active areas of research and development in computer science and information technology today. The First Asia-Pacific Conference on Intelligent-Agent Technology (IAT'99) attracted researchers and practitioners from diverse fields such as computer science, information systems, business, telecommunications, manufacturing, human factors, psychology, education, and robotics to examine the design principles and performance characteristics of various approaches in agent technologies and, hence, fostered the cross-fertilization of ideas on the development of autonomous agents and multiagent systems among different domains.

IAT'99 was enriched by four invited talks given by internationally well-recognized experts from the areas of agent-based interfaces, autonomous agents and multiagent systems, large-scale intelligent systems, and knowledge discovery and data mining. Daniel Ling, Microsoft's director of research, delivered a speech entitled "Intelligent Agents: Embodied and Disembodied." Jeffrey Bradshaw, associate technical fellow of The Boeing Company and leader of Boeing's Intelligent-Agent Technology Program, gave a talk entitled "Steps toward the Permanent Colonization of Cyberspace." Other invited speakers included Setsuo Ohsuga, a professor at Waseda University and a professor at, and director of, the Research Center for Advanced Science and Technology at the University of Tokyo, and Jan Zytkow, a professor at the University of North Carolina. The titles of their speeches were, respectively, "How Can AI Systems Deal with Large and Complex Problems—Model Building as Problem Solving" and "ROBOT-DISCOVERER: A Role Model for Any Intelligent Agent."

IAT'99 also provided a special panel session on trends and prospects of IAT, which was chaired by Bradshaw, and a half-day agent exhibit, which was chaired by Jianchang Mao of IBM. Both events highlighted a variety of challenges and real-world applications of intelligent-agent technology. These applications range from software agents, information gathering, retrieval, and visualization to web searching, decision support systems in the marketplace, negotia-

tion, meeting coordination, e-mail, telecontrol robots, intrusion detection, and tracing to an *n*-queen problem solver that is applicable to other large constraint-satisfaction problems. Ten demonstrations were provided by overseas and local participants from both academia and industry. These demonstrations provided an excellent snapshot of the current activities in the field. The demonstrations also addressed many design issues related to agent architectures, models, methodology, multiagent cooperation, data and web mining, distributed intelligence, mobile agents, and security. Demonstrators shared with visitors their valuable hands-on experiences in building real systems. The Information-Technology Promotion Agency, Japan, won the Best Demo Award with its "Information Retrieval and Intrusion-Route Tracing for Intrusion Detection by Use of Mobile Agents." The team members were all present to give a demonstration of this intrusion-detection–agent system.

In addition to the main conference, IAT'99 also featured a one-day workshop entitled "Agents in Electronic Commerce (WAEC)," chaired by Yiming Ye of IBM, on 14 December 1999. More than 30 oral presentations and invited talks were given by researchers and practitioners from around the world in the field of electronic commerce. The two invited talks were given by Wlodek Zadrozny of IBM and Anthony Hall of Nortel. C. J. Tan, director of IBM's E-Business Technology Institute (leader of IBM's DEEP BLUE Chess Project), presented the Best Workshop Paper Award and delivered a keynote speech at the opening of the workshop. The Best Workshop Paper Award went to Pinar Keskinocak of the Georgia Institute of Technology and a team of associates from IBM T. J. Watson Research Center. They presented a paper on decision support for managing an electronic supply chain.

IAT'99 was a big success in many ways. Besides its rich and solid technical program, IAT'99 also contained a number of social events that provided the participants ample time to exchange ideas and get to know each other. The most attractive and well-received events were a complimentary, four-hour bus tour of Hong Kong's most famous scenic places and a breathtaking banquet-dinner cruise at which the Best IAT Paper and the Best Demo awards were presented. Also during this banquet cruise, it was officially announced that the next IAT conference will be held in Tokyo, Japan, in October 2001. For more information about IAT, go to www.comp.hkbu.edu.hk/IAT.

Jiming Liu is an associate professor of computer science at Hong Kong Baptist University and is a senior member of the Institute of Electrical and Electronics Engineers. He is the author of two forthcoming books, entitled Learning and Adaptation in Multiagent Robotic Systems (CRC Press, 2000) and Autonomous Agents and Multiagent Systems: An Introduction (World Scientific, 2000). He is also the editor of *Intelligent-Agent Technology: Systems, Methodologies, and Tools* (World Scientific, 1999). His current research interests include autonomous agents and multiagent systems, AI, learning, self-adaptation, applied dynamics of computation and complex systems, robotics, customized electronic commerce, and active media technology. His e-mail address is jiming@comp.hkbu.edu.hk.