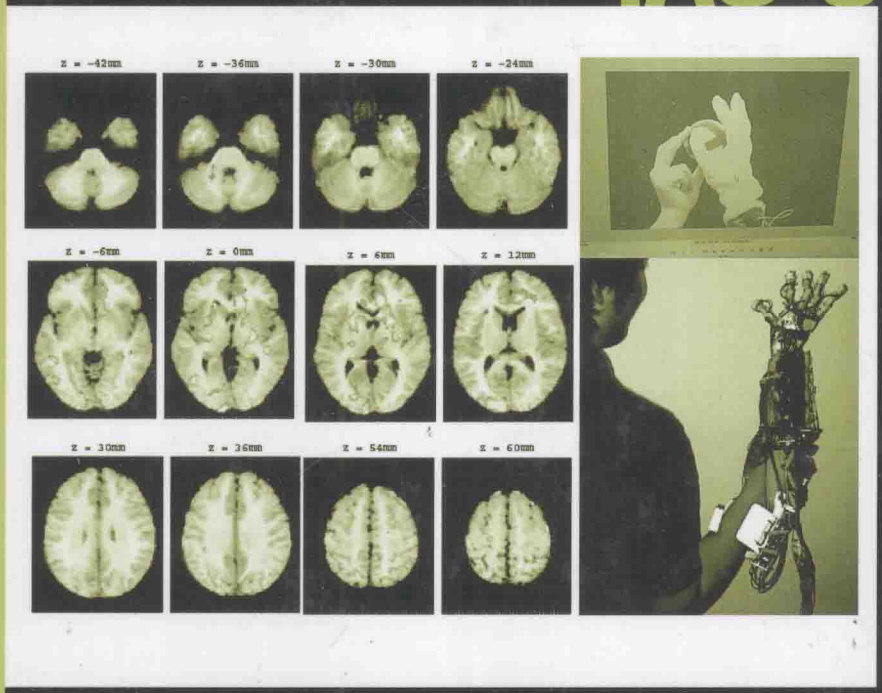
Intelligent Autonomous Systems 9

IAS-9



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IOS Press

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Preface

The **IAS-9** conference aims to address the main issues of concern within the IAS community. The conference covers both the applied as well as the theoretical aspects of intelligent autonomous systems.

Autonomy and adaptivity are key aspects of truly intelligent artificial systems, dating from the first IAS conference in 1989. New directions of research have recently emerged from the synergetic interaction of many fields, such as cognitive science, operations research, mathematics, robotics, mechanics, electronics, informatics, and economics, interdisciplinary as well as transdisciplinarily. One key insight is that to realize both intelligence and autonomy, it is crucial to build real-world devices and abstract principles of design from them. The goal of IAS-9 is to lay out new scientific ideas and design principles for artificial systems able to survive in nature and in our society. The conference proceedings stimulate novel challenges as well as exciting research directions. A total of 146 scientific papers were submitted from 16 countries. All of the submitted papers were reviewed by the program committee, and 112 were accepted as full papers.

We have 5 invited guest speakers at IAS-9: Andrew Adamatzky from the University of West England addresses the new direction of computation; Hod Lipson from Cornell University shows the frontier study of evolutionary robotics; Tomomasa Sato from The University of Tokyo presents the COE project of Japan for the real world application; Masahiro Fujita from SONY addresses the communication and service robotic system; and Shigeyuki Hosoe from RIKEN Bio-mimetic control research center shows the human analysis toward robotic learning.

The conference takes place at Kashiwa new campus of the University of Tokyo, where frontier sciences are being created as "transdisciplinary" studies. A novel research center on artifacts, RACE, is also located on this campus with other three interdisciplinary research centers. I hope all participants of IAS-9 will enjoy the atmosphere of the campus and the facilities of the research building, and experience the novel trend of "transdisciplinary" studies in Japan.

We sincerely appreciate the support of the Inoue Foundation of Science and Kayamori Foundation of Informational Science Advancement, the Robotics Society of Japan and the Research into Artifact Center of Engineering at the University of Tokyo. We would also like to express our gratitude to everybody of the program committee who contributed to the collection and the selection of high-level papers, and to the local committee members who supported the management of IAS-9.

We look forward to seeing you at the conference site of IAS-9 in Tokyo.

Tamio Arai, Rolf Pfeifer, Tucker Balch and Hiroshi Yokoi

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