

Preface

JSAI-isAI 2015 was the 7th International Symposium on Artificial Intelligence supported by the Japanese Society of Artificial Intelligence (JSAI). JSAI-isAI 2015 was successfully held during November 16–18 at Keio University in Kanagawa, Japan. In total, 246 people from 16 countries participated. The symposium took place after the JSAI SIG joint meeting. As the total number of participants for these two co-located events was 794, it was the second-largest JSAI event in 2015 after the JSAI annual meeting.

JSAI-isAI 2015 included eight workshops, where 27 invited talks and 124 papers were presented. This volume, *New Frontiers in Artificial Intelligence: JSAI-isAI 2015 Workshops*, comprises the proceedings of JSAI-isAI 2015. From the seven of the eight workshops (LENLS 12, JURISIN 9, AAA 2015, HAT-MASH 2015, TSDAA 2015, ASD-HR2015 and SKL 2015), 38 papers were carefully selected and revised according to the comments of the workshop Program Committee. About 33% of the total submissions were selected for inclusion in the conference proceedings.

LENLS (Logic and Engineering of Natural Language Semantics) is an annual international workshop on formal semantics and pragmatics. This year's workshop was the 12th LENLS in the series, and its theme featured talks on a wide range of topics, including discourse particles, disjunction, truth, copredication, expressive content, categorial grammar, dependent-type semantics, sequent calculus, and various aspects of formal pragmatics.

JURISIN (Juris-informatics) 2015 was the ninth event in the series, organized by Satoshi Tojo (Japan Advanced Institute of Science and Technology). The purpose of this workshop was to discuss both the fundamental and practical issues among people from various backgrounds such as law, social science, information and intelligent technology, logic and philosophy, including the conventional “AI and law” area.

AAA (Argument for Agreement and Assurance) has the goal of deepening a mutual understanding and exploring a new research field involving researchers/practitioners in formal and informal logic, artificial intelligence, and safety engineering working on agreement and assurance through argument. The Second Workshop on Argument for Agreement and Assurance took place at Keio University, 2015. The general sessions included a variety of presentations covering material ranging from theoretical work and methodology to demonstrations of practical tools.

HAT-MASH 2015 (Healthy Aging Tech Mashup Service, Data and People) was the first international workshop bringing people together from the fields of healthy aging and elderly care technology, information technology, and service engineering. The main objective of this workshop was to provide a forum for discussing important research questions and practical challenges in healthy aging and elderly care support and to promote transdisciplinary approaches.

TSDAA 2015 (Workshop on Time Series Data Analysis and Its Applications) aimed at providing an interdisciplinary forum for discussion of different approaches and

techniques of time series data analysis and their implementation in various real-life applications. As time series data are abundant in nature, a unifying approach is needed to bridge the gap between traditional multivariate time series data analysis with state-of-the-art methodologies of data mining from real-life time series data (numerical and text) in various applications ranging from medical and health related, biometrics, or process industry to finance or economic data analysis or weather prediction.

ASD-HR 2015 (Autism Spectrum Disorders Using a Humanoid Robot) was the first international workshop on interventions for children with autism spectrum disorders using a humanoid robot. As shown in the statistics of the recent reports, the necessity for treatment and education for children and adolescents with autism spectrum disorders (ASD) has been widely recognized. Researchers have recently considered using humanoid robots to treat ASD-associated deficits in social communication. In all, 16 oral presentations including five invited talk were given at the workshop, presenting studies in the interdisciplinary field of research on this topic including both engineering and medical sides.

SKL 2015 (Skill Science) invited researchers who investigate human skills. Human skills involve well-attuned perception and fine motor control, often accompanied by thoughtful planning. The involvement of the body, environment, and tools mediating them makes the study of skills unique among researches of human intelligence. The study of skills requires various disciplines to collaborate with each other because the value of skills is not determined solely in terms of efficiency, but calls for consideration of quality. Participants discussed the theoretical foundations of skill science as well as practical and engineering issues.

It is our great pleasure to be able to share some highlights of these fascinating workshops in this volume. We hope this book introduces readers to the state-of-the-art research outcomes of JSAI-isAI 2015, and motivates them to participate in future JSAI-isAI events.

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New Frontiers in Artificial Intelligence

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