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Information Search, Integration and Personalization

International Workshop, ISIP 2012
Sapporo, Japan, October 11-13, 2012
Revised Selected Papers



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Preface

This book contains the selected research papers presented at ISIP 2012, the 7th International Workshop on Information Search, Integration and Personalization. The workshop was held at Meme Media Laboratory, Hokkaido University, in Sapporo, Japan, during October 11–13, 2012. There were 29 presentations of scientific papers, of which 24 were submitted to the post workshop peer review. The international Program Committee selected 14 papers to be included in the proceedings.

The themes of the presented papers reflected today’s diversity of research topics as well as the rapid development of interdisciplinary research. With increasingly sophisticated research in science and technology, there is a growing need for interdisciplinary and international availability, distribution, and exchange of the latest research results, in organic forms, including not only research papers and multimedia documents, but also various tools developed for measurement, analysis, inference, design, planning, simulation, and production as well as the related large data sets. There are similar growing needs for the interdisciplinary and international availability, distribution and exchange of ideas and works among artists, musicians, designers, architects, directors, and producers. These contents, including multimedia documents, application tools, and services are being accumulated on the Web, as well as in local and global databases, at a remarkable speed that we have never experienced with other kinds of publishing media. Large amounts of content are now already on the Web, waiting for their advanced personal and/or public reuse. We need new theories and technologies for the advanced information search, integration through interoperation, and personalization of Web content as well as database content. The ISIP 2012 workshop was organized to offer a forum for presenting original work and stimulating discussions and exchanges of ideas around these themes, focusing on the following topics:

- Information search in large data sets (databases, digital libraries, data warehouses)
- Comparison of different information search technologies, approaches, and algorithms
- Novel Approaches to information search
- Personalized information retrieval and personalized Web search
- Data analytics (data mining, data warehousing)
- Integration of Web services, knowledge bases, digital libraries
- Federation of smart objects

ISIP started as a series of Franco-Japanese workshops in 2003, and its first edition was placed under the auspices of the French embassy in Tokyo, which provided the financial support along with JSPS (Japanese Society for the Promotion of

Science). The workshops have alternated so far between Japan and France, and they have attracted increasing interest from both countries. Past ISIP workshops were:

- 2003** First ISIP in Sapporo (June 30–July 2, Meme Media Laboratory, Hokkaido University)
- 2005** Second ISIP in Lyon (May 9–11, University Claude Bernard Lyon 1)
- 2007** Third ISIP in Sapporo (June 27–30, Meme Media Laboratory, Hokkaido University)
- 2008** Forth ISIP in Paris (October 6–8, Tour Montparnasse, Paris)
- 2009** Fifth ISIP in Sapporo (July 6–8, Meme Media Laboratory, Hokkaido University)
- 2010** Sixth ISIP in Lyon (October 11–13, University Claude Bernard Lyon 1)

Originally, the workshops were intended for a Franco-Japanese audience, with the occasional invitation of researchers from other countries as keynote speakers. The proceedings of each workshop were published informally, as a technical report of the hosting institution. One exception was the 2005 workshop, selected papers of which were published in the *Journal of Intelligent Information Systems* in its special issue for ISIP 2005 (Vol. 31, Number 2, October 2008). The original goal of the ISIP workshop series was to create close synergies between a selected group of researchers from the two countries; and indeed, several collaborations, joint publications, joint student supervisions, and research projects have been initiated by participants of the workshop.

With these six workshops, the organizers concluded that the workshop series had reached a mature state with an increasing number of researchers participating every year. As a result, the organizers decided to open up the workshop to a larger audience by inviting speakers from ten countries to the ISIP 2012 Workshop.

The selected papers contained in this book are grouped into three major topics: knowledge federation and integration, social system support and visualization, and social information search and discovery. The first group of papers focuses on the theoretical and practical aspects of platform architectures or frameworks for the federation or integration of knowledge resources. The first two papers in the second group focus on social cyber-physical systems for optimizing or improving social system services based on big-data analysis and visualization. The other two focus on big-data analysis and visualization approaches for rice diseases and health care. The third group proposes theoretical foundations and methodologies for recommendation, statistical analysis, relevant knowledge extraction, and community discovery from social big data and text streams.

We would like to express our appreciation to all the speakers and participants of ISIP 2012 for their intensive discussions and exchanges of new ideas. This book is an outcome of those discussions and exchanged ideas.

Organization

ISIP 2012 was organized by the Meme Media Laboratory of the Hokkaido University, Sapporo, Japan.

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