

## Conference Co-Chairs' Message

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Welcome to Japan and *WWW2005*. This is the 14th conference in the series that was started by Robert Cailliau in Geneva in 1994. It is also worth noting that the conference has now been held in each of the three major W3C host countries (USA, France, and Japan).

This year's conference maintains the traditional 1:3:1 format including: a day of tutorial and workshop sessions, three days of keynotes, paper tracks and poster presentations as well as the special W3C track, and finishes with Developers Day.

Once again we are delighted to have Tim Berners-Lee deliver the opening keynote and to be followed by four internationally distinguished speakers in the other plenary session slots. This year Developers Day also begins with a special keynote address.

The resources and staff of Keio University, the W3C Japan Host and the local Professional Conference Organizer have worked with a large number of volunteers and members of the International World Wide Web Conference Committee (IW3C2), the group that administer the conference series, to organise this year's conference. This work has been supported by our much valued conference partners and sponsors.

Conferences of this nature happen for three reasons: a spirit of inquiry about the subject; the willingness of a group of authors write up and share their ideas and research findings; and, a group of organisers (mostly volunteers) who are prepared to put in the time and effort to build and management a conference program and run a conference environment. Conferences are team efforts — our thanks to everyone who has been a part of the *WWW2005* team.

Finally, we hope you find the conference stimulating and professionally rewarding and that you enjoy your stay in Japan and have a safe trip home.

**Allan Ellis**  
*Southern Cross University*

**Tatsuya Hagino**  
*Keio University*

## Conference Organizers

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International  
World Wide Web  
Conference Committee



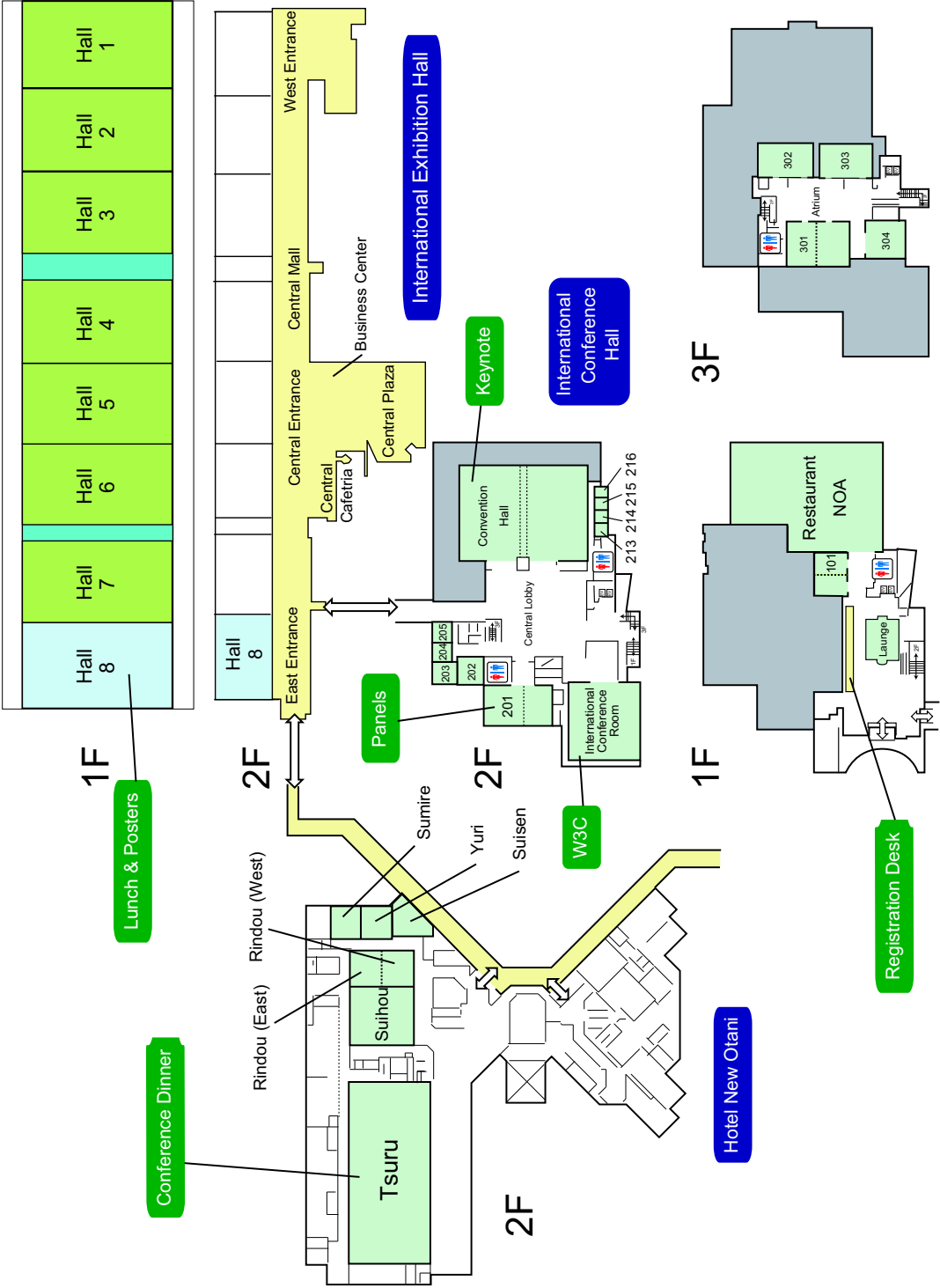
Keio University

## Conference Committee

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<b>Conference Co-Chairs:</b>	Allan Ellis, <i>Southern Cross University, Australia</i> Tatsuya Hagino, <i>Keio University, Japan</i>
<b>Program Committee Co-Chairs:</b>	Fred Douglass, <i>IBM Research, USA</i> Prabhakar Raghavan, <i>Verity, Inc., USA</i>
<b>Program Committee Vice Chairs:</b>	
<b>Applications:</b>	Nina Bhatti, <i>HP Labs, USA</i> (Vice Chair) Jonathan Trevor, <i>Fuji-Xerox Palo Alto Laboratory, USA</i> (Deputy Vice Chair)
<b>Browsers and User Interfaces:</b>	Juliana Freire, <i>University of Utah and OHSU, USA</i> (Vice Chair) Paul Aoki, <i>PARC, USA</i> (Deputy Vice Chair)
<b>Data Mining:</b>	Shinichi Morishita, <i>University of Tokyo, Japan</i> (Vice Chair) Bing Liu, <i>University of Illinois at Chicago, USA</i> (Deputy Vice Chair)
<b>Education:</b>	Riichiro Mizoguchi, <i>Osaka University, Japan</i> (Vice Chair) Lora Aroyo, <i>Eindhoven University of Technology, Netherlands</i> (Deputy Vice Chair)
<b>Performance and Reliability:</b>	Prashant Shenoy, <i>University of Massachusetts, USA</i> (Vice Chair) Michael Rabinovich, <i>AT&amp;T Labs - Research, USA</i> (Deputy Vice Chair)
<b>Search:</b>	Andrew Tomkins, <i>IBM Almaden Research Center, USA</i> (Vice Chair) Junghoo Cho, <i>University of California, Los Angeles, USA</i> (Deputy Vice Chair)
<b>Security, Privacy &amp; E-Commerce:</b>	Patrick McDaniel, <i>Penn State University, USA</i> (Vice Chair) Mark Manasse, <i>Microsoft Research, USA</i> (Deputy Vice Chair)
<b>Semantic Web:</b>	Steffen Staab, <i>University of Koblenz-Landau, Germany</i> (Vice Chair) Ramanathan V. Guha, <i>IBM Research, USA</i> (Deputy Vice Chair)
<b>Web Engineering:</b>	Geert-Jan Houben, <i>Eindhoven University of Technology, Netherlands</i> (Vice Chair) Piero Fraternali, <i>Politecnico di Milano, Italy</i> (Deputy Vice Chair)
<b>XML and Web Services:</b>	Dan Suciu, <i>University of Washington, USA</i> (Vice Chair) Mark Little, <i>Arjuna, UK</i> (Deputy Vice Chair)
<b>Special Interest Track Chairs:</b>	
<b>Embedded Web:</b>	Yoshito Tobe, <i>Tokyo Denki University, Japan</i> (Vice Chair) Tatsuo Nakajima, <i>Waseda University, Japan</i> (Deputy Vice Chair)
<b>Developers' Day:</b>	James Hendler, <i>University of Maryland, USA</i> (Co-Chair) Mark Baker, <i>Coactus, Canada</i> (Co-Chair)
<b>Industrial &amp; Practical Experience:</b>	Kazuo Iwano, <i>IBM Japan, Japan</i> (Chair) Byron Dom, <i>Yahoo! Inc., USA</i> (Deputy Chair) Naohiko Uramoto, <i>IBM Japan, Japan</i> (Deputy Chair)
<b>Panels:</b>	Robin Chen, <i>AT&amp;T Labs, USA</i> (Chair) Ian Horrocks, <i>University of Manchester, UK</i> (Deputy Chair) Irwin King, <i>Chinese University of Hong Kong, China</i> (Deputy Chair)
<b>Posters:</b>	Weisong Shi, <i>Wayne State University, USA</i> (Chair) Akio Kido, <i>IBM Tokyo Research Lab., Japan</i> (Deputy Chair)
<b>Tutorials &amp; Workshops:</b>	Hiroshi Hatta, <i>Ok Electric Industry Co., Ltd, Japan</i> (Co-Chair) Bebo White, <i>Stanford Linear Accelerator Center, USA</i> (Co-Chair)
<b>W3C:</b>	Marie-Claire Forgue, <i>World Wide Web Consortium, France</i>

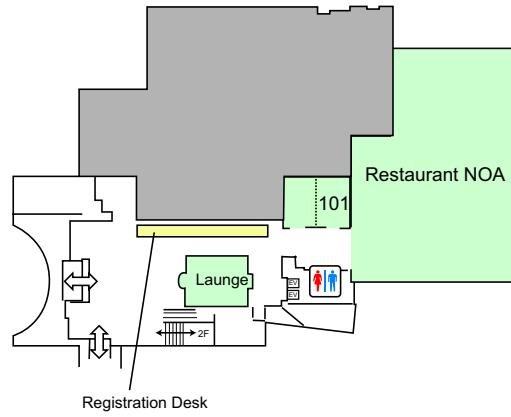
# Maps of the Conference Site



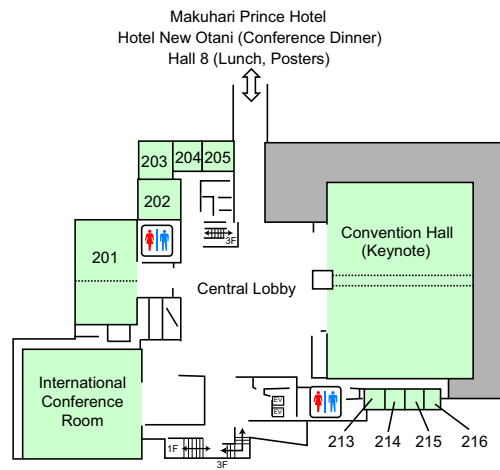
# Maps of International Conference Center

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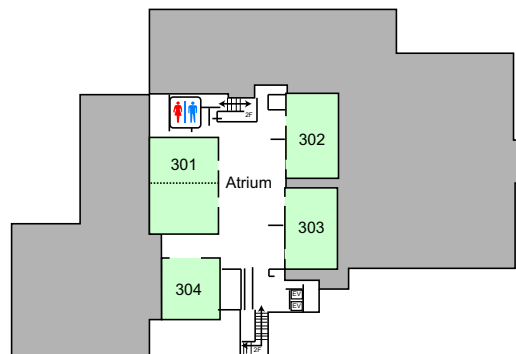
1F



2F



3F





## Schedule at a Glance

Tutorials Workshops	Main Conference			Developer's Day
May 10 Tuesday	May 11 Wednesday	May 12 Thursday	May 13 Friday	May 14 Saturday
<b>9:00 - 10:30</b> <b>Tutorials:</b> TA03, TA05, TA07, TF01, TF03, TF05 <b>Workshops:</b> WF01, WF04-WF12	<b>9:00 - 9:30</b> [Hall] Opening Ceremony <b>9:30 - 10:30</b> [Hall] <b>Keynote:</b> Tim Berners-Lee, World Wide Web Consortium	<b>9:00 - 10:00</b> [Hall] <b>Keynote:</b> Eric Brewer, University of California at Berkeley	<b>9:00 - 10:00</b> [Hall] <b>Keynote:</b> Rob Glaser, RealNetworks	<b>9:00 - 10:00</b> [201] <b>Keynote:</b> Makoto Murata, International University of Japan
<b>Break</b>				
<b>11:00 - 12:30</b> <b>Tutorials:</b> TA03, TA05, TA07, TF01, TF03, TF05 <b>Workshops:</b> WF01, WF04-WF12	<b>10:50 - 12:20</b> [301] Usage Analysis [302] Wide-area Architectures and Protocols [303] Data Extraction [304] Industrial and Practical Experience Track (Paper 1) [201] <b>Panel:</b> Can semantic web be made to flourish? [ICR] <b>W3C:</b> Enabling the Mobile Web	<b>10:30 - 12:00</b> [301] XML Query and Programming Languages [302] Web-based Educational Applications [303] Text Analysis and Extraction [304] Industrial and Practical Experience Track (Paper 2) [201] <b>Panel:</b> Mobile Multimedia Services [ICR] <b>W3C:</b> Privacy and the Semantic Web	<b>10:30 - 12:00</b> [301] Service selection and Metadata [302] Link-based Ranking [303] Improving the Browsing Experience [201] <b>Panel:</b> Querying the past, present and future: where we are and where we will be [ICR] <b>W3C:</b> The Future of XML	<b>10:30 - 12:00</b> [201] Semantic Web [301A] Microformats [301B] Interaction and Visualization [302] Semantic Web Services in Practice <b>10:30 - 17:00</b> [101] Web Bloopers: Avoiding Common Web Design Mistakes [303] Current Best Practices in Web Development and Design
<b>Lunch</b>				
<b>14:00 - 15:30</b> <b>Tutorials:</b> TP01, TP06, TP07, TF01, TF03, TF05 <b>Workshops:</b> WF01, WF04-WF12	<b>13:30 - 14:30</b> [Hall] <b>Keynote:</b> Yuji Inoue, NTT <b>14:40 - 16:10</b> [301] Semantic Querying [302] Web Services [303] Web Application Design [304] Industrial and Practical Experience Track (Invited 1) [201] <b>Panel:</b> Current trends in the integration of search and browsing [ICR] <b>W3C:</b> Accessibility Aspects within Mobile Web and Other Developing Technologies	<b>13:30 - 14:30</b> [Hall] <b>Keynote:</b> Lorrie Cranor, Carnegie Mellon University <b>14:40 - 16:10</b> [301] Web Engineering with Semantic Annotation [302] User-focused Search and Crawling [303] Trustworthy web sites [201] <b>Panel:</b> On culture in a world-wide information society: Toward the knowledge society - the challenge [ICR] <b>W3C:</b> Recent Work in the Semantic Web Activity: Query and Best Practices	<b>13:30 - 15:00</b> [301] Semantic Web Foundations [302] Link-based Similarity [303] XML Parsing and Stylesheets [201] <b>Panel:</b> Web engineering: technical discipline or social process [ICR] <b>W3C:</b> Interaction and the Web: The Future Browser	<b>13:30 - 15:00</b> [201] Semantic Web [301A] Microformats [301B] Interaction and Visualization [302] Semantic Web Services in Practice

## Schedule at a Glance

Tutorials Workshops	Main Conference			Developer's Day
May 10 Tuesday	May 11 Wednesday	May 12 Thursday	May 13 Friday	May 14 Saturday
		<b>14:40 - 17:00</b> [304] Industrial and Practical Experience Track (Panel)		
<b>Break</b>				
<b>16:00 - 17:30</b> <b>Tutorials:</b> TP01, TP06, TP07, TF01, TF03, TF05 <b>Workshops:</b> WF01, WF04–WF12	<b>16:30 - 18:00</b> [301] Semantic Web [302] Applications [303] Indexing and Querying [304] Industrial and Practical Experience Track (Invited 2) [201] <b>Panel:</b> Do we need more web performance research? [ICR] <b>W3C:</b> Foundations And Future Directions of Web Services	<b>16:30 - 18:00</b> [301] Semantic Search [302] Security Through the Eyes of Users [303] Measurements and analysis [201] <b>Panel:</b> Exploiting the dynamic networking effects of the web [ICR] <b>W3C:</b> Web Internationalization Developments	<b>15:30 - 17:00</b> [301] Schemas and Semantics [302] Architecture and Implementation of Web sites [303] Embedded Web [201] <b>Panel:</b> Web services considered harmful? [ICR] <b>W3C:</b> Questions & Answers to the W3C Members and Team  <b>17:10 - 18:00</b> [Hall] Closing Ceremony	<b>15:30 - 16:15</b> [201] Semantic Web [301A] Microformats  <b>15:30 - 17:00</b> [301B] Interaction and Visualization  <b>16:15 - 17:00</b> [201] Semantic Web and Microformats
	<b>18:30 - 20:30</b> [8] Poster Reception	<b>18:30 - 20:30</b> [Tsuru] Conference Dinner		

- [Hall] Convention Hall
- [ICR] International Conference Room
- [8] Exhibition Hall 8
- [Tsuru] Hotel New Otani, Tsuru

## Keynote Speakers

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### Tim Berners-Lee

Director of World Wide Web Consortium

**Tim Berners-Lee** is a graduate of Oxford University, England, and currently holds the 3Com Founders chair at the Computer Science and Artificial Intelligence Laboratory (CSAIL) at the Massachusetts Institute of Technology (MIT). He directs the World Wide Web Consortium (W3C), an open forum of companies and organizations with the mission to lead the Web to its full potential through the development of Web technical standards, which he founded in October 1994.

With a background of system design in real-time communications and text processing software development, Tim invented the World Wide Web, an internet-based hypermedia initiative for global information sharing while working at CERN, the European Particle Physics Laboratory. He wrote the first version of HTML, as well as the first web client (**browser-editor**) and server in 1990.

Subsequent honors include a MacArthur Fellowship, the ACM Software Systems Award, IEEE Koji Kobayashi Computers and Communications Award, the Albert Medal of the Royal Society for the encouragement of Art, Manufactures and Commerce, the Japan Prize and the Finnish Millennium Technology Prize.

He is a Distinguished Fellow of the British Computer Society, and a Honorary Fellow of the Institution of Electrical Engineers., a member of the American Academy of Arts and Sciences, and a Fellow of the Royal Society. In 2004, Tim was made a Knight Commander of the Order of the British Empire (KBE).



### Eric Brewer

Associate Professor, Computer Science Division

Alfred P. Sloan Research Fellow

University of California at Berkeley

**Dr. Brewer** focuses on all aspects of Internet-based systems, including technology, strategy, and government. As a researcher, he has led projects on scalable servers, search engines, network infrastructure, sensor networks, and security. His current focus is in (high) technology for developing regions, with projects in India and Bangladesh (so far), and including communications, health, education, and e-government.

In 1996, he co-founded Inktomi Corporation with a Berkeley grad student based on their research prototype, and helped lead it onto the Nasdaq 100 before it was bought by Yahoo! in March 2003.

In 2000, he founded the Federal Search Foundation, a 501-3(c) organization focused on improving consumer access to government information. Working with President Clinton, Dr. Brewer helped to create **FirstGov.gov**, the official portal of the Federal government, which launched in September 2000.



## Keynote Speakers

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He received an MS and Ph.D. in EECS from the Massachusetts Institute of Technology, and a BS in EECS from UC Berkeley. He was named a “Global Leader for Tomorrow” by the *World Economic Forum*, by the *Industry Standard* as the “most influential person on the architecture of the Internet”, by *InfoWorld* as one of their top ten innovators, by *Technology Review* as one of the top 100 most influential people for the 21st century (the “TR100”), and by *Forbes* as one of their 12 “e-mavericks”, for which he appeared on the cover.



### Lorrie Cranor

Associate Research Professor  
Carnegie Mellon University

**Dr. Lorrie Faith Cranor** is an Associate Research Professor in the School of Computer Science at Carnegie Mellon University in Pittsburgh, Pennsylvania. She is a faculty member in the Institute for Software Research, International and in the Engineering and Public Policy department. She is director of the CMU Usable Privacy and Security Laboratory (CUPS). She came to CMU in December 2003 after seven years at AT&T Labs-Research. While at AT&T she also

taught in the Stern School of Business at New York University.

Dr. Cranor’s research has focused on a variety of areas where technology and policy issues interact, including online privacy, electronic voting, and spam. She is chair of the Platform for Privacy Preferences Project (P3P) Specification Working Group at the World Wide Web Consortium and author of the book *Web Privacy with P3P* (O’Reilly 2002). In 2003 she was named one of the top 100 innovators 35 or younger by *Technology Review* magazine.

Dr. Cranor received her doctorate degree in Engineering & Policy from Washington University in St. Louis in 1996. While in graduate school she helped found *Crossroads, the ACM Student Magazine*, and served as the publication’s editor-in-chief for two years.

Dr. Cranor was chair of the Tenth Conference on Computers Freedom and Privacy (CFP2000) and program committee chair for the 29th Research Conference on Communication, Information and Internet Policy (TPRC 2001). In the Spring of 2000 she served on the Federal Trade Commission Advisory Committee on Online Access and Security. She also serves on the editorial boards of the journals *ACM Transactions on Internet Technology*, *The Information Society*, and *Journal of Privacy Technology*.

Dr. Cranor has been studying electronic voting systems since 1994 and in 2000 served on the executive committee of a National Science Foundation sponsored Internet voting taskforce.

Dr. Cranor was also a member of the project team that developed the Publius censorship-resistant publishing system. In February 2001, the Publius team was honored by *Index on Censorship* magazine for the “Best Circumvention of Censorship.”

Dr. Cranor spends most of her free time with her husband, Chuck, her son, Shane, and her daughter Maya, but sometimes she finds time to play the tenor saxophone or design and create award-winning quilts.

## Keynote Speakers

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### **Rob Glaser**

Chairman and CEO  
RealNetworks, Inc.

**Rob Glaser**, founder and CEO of RealNetworks, Inc. (NASDAQ: RNWK) — the recognized leader in Internet media delivery, has long been intrigued with the nexus of media, computing, communication and the Internet. Since founding RealNetworks in 1995, Glaser has played an integral role in the transformation of the Internet into the next great mass medium. In 1995 under Glaser's direction, RealNetworks introduced the groundbreaking RealAudio, RealVideo, RealPlayer and RealSystem technologies, effectively transitioning television and radio from broadcast to the Web. With the launch of RealJukebox in 1999, RealNetworks secured its leadership position in the digital distribution of music.

In 2001, RealNetworks introduced the revolutionary RealOne, an all-in-one service and technology platform, the single source for consumers to discover, play and manage the best in brand-name digital programming - music, entertainment, sports, news, and more. Since its launch, RealOne has become the fastest growing Internet paid media subscription service in history, with more than half-million subscribers in less than eighteen months.

Prior to founding RealNetworks, Mr. Glaser worked for Microsoft from 1983 to 1993 in a number of executive positions, including Vice President of Multimedia and Consumer Systems.

Mr. Glaser has served on several non-profit boards and committees, including his appointment by President Clinton to the Advisory Committee on Public Interest Obligations of Digital Television Broadcasters.

Mr. Glaser is a graduate of Yale University, with a BA and an MA in Economics and a BS in Computer Science.



### **Yuji Inoue**

Senior Vice President  
NTT

**Yuji Inoue** was born in Fukuoka, Japan, in 1948. He received the B.E., M.E. and Ph. D degrees from Kyushu University, Fukuoka, Japan, in 1971, 1973 and 1986, respectively. He was made an Honorary Professor of Mongolian Technical University in 1999. He joined NTT (Nippon Telegraph and Telephone Corporation) Laboratories in 1973. He was first engaged in the development of digital network equipment and systems, such as digital synchronization, digital switching and digital subscriber loop transmission, and later in the standardization of narrow and broadband ISDN (Integrated Services Digital Network), SDH (Synchronous Digital Hierarchy) and TNA (Transport Network Architecture) through the international standards organization, ITU-T. He was the Special Rapporteur of Study Group XVIII of the ITU-T, formerly CCITT, and he

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co-led SDH and TNA as the first worldwide unique standards in these fields. While conducting multimedia experiments in Japan, he co-initiated the next generation software architecture called Telecommunication Information Networking Architecture, TINA, in the Consortium of which he served as the Chairperson of its Technical Forum for six years from its establishment, 1993 - 1998. In 1997, he joined the global business incubation activities of NTT as the Leader of the Global Information Communications Service Development Project. After launching advanced Internet-based networking services in NTT's global business area, he moved back to the Laboratories in July 1998 as the Executive Manager of NTT Multimedia Networks Laboratories, where he conducted leading-edge studies related to Information Sharing services and platforms.

He joined NTT Data Corporation as the Deputy Senior Executive Manager of Research and Development (R&D) Headquarters, as part of NTT's re-organization in July 1999. He was also a Corporate Senior Vice-President and served as the Chief IT Partner for the IT Business Navigation Group, newly established in September 2000. In June 2001, he became the Senior Executive Manager of R&D Headquarters and of the Intellectual Property Office in R&D Headquarters. He additionally served as the Executive Manager of the Planning Department in R&D Headquarters from April 2002.

Dr. Yuji Inoue moved back to NTT in June 2002, and is now serving as a Senior Vice-President of NTT and the Executive Director of Department III (R&D Strategy Department).

He is an IEICE Fellow and also an IEEE Fellow. He has co-authored several books including "ISDN", "Broadband ISDN and ATM Technologies", "Network Architecture", "The TINA Book", "NTT's Strategy for Global Information Sharing" and "Waves leading to Future Networks."

## Tuesday — Workshops

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	TITLE	PRESENTERS	LOCATION
WF01	2nd International Cross-Disciplinary Workshop on Web Accessibility	Simon Harper, Yeliz Yesilada, and Carole Goble	201A
WF04	The Semantic Computing Initiative — From Semantic Web to Semantic World	Mitsuru Ishizuka and Koiti Hasida	201B
WF05	Interoperability of Web-based Educational Systems	Daniel Olmedilla, Nobuo Saito, and Bernd Simon	302
WF06	AIRWeb'05 — Adversarial Information Retrieval on the Web	Brian Davison	301B
WF07	Innovations in Web Infrastructure (IWI)	Simon Courtenage, Boris Galitsky, and David Lewis	204
WF08	Web Service Semantics: Towards Dynamic Business Integration	Christoph Bussler, Richard Goodwin, Rubén Lara, David Martin, and Takahira Yamaguchi	303
WF09	Policy Management for the World Wide Web	Tim Finin, Jim Hendler, and Lalana Kagal	205
WF10	2nd Annual Workshop on the Weblogging Ecosystem — Aggregation, Analysis and Dynamics	Natalie Glance, Matthew Hurst, and Eytan Adar	304
WF11	Activities on Semantic Web Technologies in Japan	Noboru Shimizu, and Hideaki Takeda	Rindo (East)
WF12	Customer Focused Mobile Services	Johan Hjelm, Annakaisa Hayrynen, Bin Wei and Rittwik Jana	Rindo (West)

### **WF01** 2nd International Cross-Disciplinary Workshop on Web Accessibility

Simon Harper, Yeliz Yesilada, and Carole Goble, *University of Manchester*

Location: 201A

Conventional workshops on accessibility tend to be single disciplinary in nature. However, we are concerned that this focus on a single participant group prevents the cross-pollination of ideas, needs, and technologies from other related but separate fields. This workshop will be decidedly cross-disciplinary and will bring together users, accessibility experts, graphic designers, and technologists from academia and industry to discuss how accessibility can be supported. We also encourage the participation of users and other interested parties as an additional balance to the discussion. Our aim is to focus on accessibility by encouraging participation from many disciplines. Views will bridge academia, commerce, and industry and we hope that arguments encompassing a range of beliefs across the design-accessibility spectrum will be presented.

Last year's workshop outcomes suggested a number of possible themes for the 2005 edition. The theme for this second workshop, 'Engineering Accessible Design', was the most requested topic for further discussions by our 2004 participants. Previous engineering approaches seem to have

## Tuesday — Workshops

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precluded the engineering of accessible systems. This is plainly unsatisfactory. Designers, authors, and technologists are at present playing ‘catch-up’ with a continually moving target in an attempt to retrofit systems. In-fact engineering accessible interfaces is as important as their functionality’s and should be an indivisible part of the development. We should be engineering accessibility as part of the development and not as afterthought or because government restrictions and civil law requires us to. Our workshop will bring together a cross section of the web design and engineering communities; to report on developments, discuss the issues, and suggest cross-pollinated solutions.

### **WF04 The Semantic Computing Initiative - From Semantic Web to Semantic World**

Koiti Hasida, *Information Technology Research Institute, AIST*

Mitsuru Ishizuka, *University of Tokyo*

Location: 201B

Semantic Computing is a vision of information technology based on semantics shared between people and machines, aiming at making computers more usable and useful to everybody. All the information content including not just Web pages but also software, document, and multimodal content should have explicit semantic structure, which would make it straightforward both to tell computers what people mean and to provide information services meaningful to people. For instance, incorporation of semantic structure from the authoring stage will both reduce the cost of authoring and improve the quality of the content (clarity of document, validity of program, and so on).

Semantic Computing extends Semantic Web (in the narrow sense of ontology-based augmentation of Web pages) in terms of both breadth (Semantic Computing encompasses not just the Web but the entire IT) and depth (it addresses not only skeletal meaning of Web pages but detailed semantic structure of natural language, multimodal data, programming language, etc.), hence semantically enriching a much larger realm of the human life-world. Technologies including software engineering, user interface, natural-language processing, artificial intelligence, grid computing, and ubiquitous computing, among others, need be integrated to embody this initiative. The workshop hence invites interested experts to share their new ideas on topics including, but not limited to:

- Integration of ontology-based description and semantic annotation;
- Middleware platform for Semantic Computing;
- Applications and business models based on Semantic Computing.

### **WF05 Interoperability of Web-based Educational Systems**

Daniel Olmedilla, *L3S Research Center*

Nobuo Saito, *Keio University*

Bernd Simon, *Vienna University of Economics and Business Administration*

Location: 302

Nowadays learning resources are increasingly available via web-based educational systems, such as learning (content) management systems, electronic market places for learning materials and courses, or knowledge repositories. With the dawn of various specialised e-learning tools, learning resources became more and more stored in closed environments, restricting accessibility to a closed user

## Tuesday — Workshops

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community. While standardization bodies and consortia such as ADL, CEN/ISSS, IEEE, IMS, and ISO have already identified the need for interoperability of web-based educational systems, learners' choices to fill a particular knowledge gap are in many cases still limited to the offers of the system they are registered at.

Recently, researchers have started to focus in these issues in more depth. Web technologies have appeared as promising approaches where XML, RDF, Web query languages, and ontology-based data integration approaches became essential ingredients of this infrastructure.

### **WF06** AIRWeb'05 — Adversarial Information Retrieval on the Web

Brian D. Davison, *Lehigh University*

Location: 301B

Search is the single most common application used on the Web. The attraction of hundreds of millions of searches per day provide significant incentive to content providers to do whatever necessary to rank highly in search engine results. The use of techniques that push rankings higher than they belong is often called spamming a search engine. Such methods typically include textual as well as link-based techniques. Like e-mail spam, this is a form of adversarial information retrieval; the conflicting goals of accurate results of search providers and high positioning by content providers provides an interesting and real-world environment to study techniques in optimization, obfuscation, and reverse engineering, in addition to the application of information retrieval and classification.

The workshop solicits technical papers on any aspect of adversarial information retrieval on the Web. Particular areas of interest include, but are not limited to search engine spam, link-bombing, reverse engineering of ranking algorithms, advertisement blocking, and web content filtering. Papers addressing higher-level concerns (e.g., whether 'open' algorithms can succeed in an adversarial environment, whether permanent solutions are possible, etc.) are also welcome.

AIRWeb '05 is intended to bring together researchers and practitioners that are concerned with the on-going efforts in adversarial information retrieval on the Web. Workshop participants will hear peer-reviewed technical papers, but are also expected to contribute by helping to identify datasets and evaluation methodologies, and to provide feedback on how research in these areas can contribute to practice.

### **WF07** Innovations in Web Infrastructure (IWI)

Simon Courtenage, *University of Westminster*

Boris Galitsky, *University of London - Birkbeck*

David Lewis, *Trinity College Dublin*

Location: 204

The World-Wide Web provides us with a distributed hyperlinked document repository, but underlying the infrastructure of the web is a communications infrastructure, which is responsible for implementing much of the structure of the document repository. For example, in the current web, when a user chooses to navigate from a web page, using a hyperlink, to another page, they set in motion in a request/response transaction between their web browser and a web server, acting in a client/server relationship, which implements that navigation. Recently, there has been increasing interest in innovative network topologies such as peer-to-peer (structured and unstructured) which

## Tuesday — Workshops

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decentralizes network control, and communications paradigms, such as content-based networking, as well as publish/subscribe which decouples producers and consumers of information and provide asynchronous as well as synchronous information delivery. Yet there is little focus on how this research can benefit the web. At the same time, from the perspective of the web, there has been tremendous interest in extending the infrastructure of the web, for example, through the use of ontologies to structure knowledge, and through the study of web topology and its influence on web search, virtual communities, collaborations and distributed information delivery. Yet there has been little focus on how advances in communications and networking can contribute to this research. Many open research problems exist in this area, such as semantic interoperability and the scalability of ontology-based reasoning within distributed knowledge environments, which require contributions from the communications and networking community in order to advance robust solutions.

IWI will tackle this problem by providing a forum within which web infrastructure topics can be discussed in relation to communications and networking, and similarly, advances in networking can be discussed in relation to their impact on the infrastructure of the web. A possible list of workshop topics would therefore include (but not be limited to):

- Ontology-based routing by content;
- Meta-data management in P2P networks;
- Communications support for distributed reasoning;
- Web topologies and distributed agents;
- Content-based networking for distributed collaboration and virtual communities;
- Decentralized access control and trust.

### **WF08 Web Service Semantics: Towards Dynamic Business Integration**

Christoph Bussler, *National University of Ireland, Galway*

Richard Goodwin, *IBM T. J. Watson Research Center*

Rubén Lara, *Digital Enterprise Research Institute*

David Martin, *SRI International*

Takahira Yamaguchi, *Keio University*

Location: 303

The description of Web services in a machine-understandable fashion is expected to have a great impact in the areas of e-Commerce and Enterprise Application Integration, as it can enable dynamic and scalable cooperation between independently developed systems and organisations. These potential benefits have led to the establishment of an important class of research activities, both in industry and academia, aimed at the practical deployment of declarative, semantically rich service and process descriptions and their use across the Web service lifecycle. This research, which draws on a variety of fields such as Knowledge Representation, Automated Software Engineering, Process Modeling, Workflow, and Software Agents, goes under the heading of Semantic Web Services (SWS). We note that here, “Semantic Web” does not denote any particular set of standards or commitment to any particular vision regarding the future of the Web. In addition many SWS efforts are aligned with rapidly developing commercial Web Service standards such as WSDL and UDDI.

## Tuesday — Workshops

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Many major challenges need to be addressed in this field. This workshop aims to provide a forum in which to focus on selected core technical challenges for deployment of SWS, and reach a better understanding of the relationships between commercial Web service standards, current SWS research efforts, and the ultimate requirements for full-scale deployment of these technologies. Another major focus will be on the relationship of work on SWS to the needs of business systems, and in particular the needs having to do with publishing policies associated with Web services, such as those discussed at the recent W3C Workshop on Constraints and Capabilities for Web Services (see <http://www.w3.org/2004/06/ws-cc-cfp.html>). We will particularly seek submissions that demonstrate innovative application of SWS technologies to the challenges involved in automating online business transactions.

### **WF09 Policy Management for the World Wide Web**

Tim Finin, *University of Maryland*

Jim Hendler, *University of Maryland*

Lalana Kagal, *University of Maryland*

Location: 205

In order to realize the full potential of the World Wide Web as an open, dynamic, and distributed “universe of network-accessible information”, it is important for web entities to behave appropriately. Policy management provides the openness, flexibility, and autonomy required to regulate this environment as entities can reason over their own policies and the policies of other entities to decide how to behave. Using policies also allows entities to specify expected behavior of entities they interact with. Entities can also adapt to increasingly complex requirements without the need for substantial changes to the structure or implementation through the use of policies.

Policy management includes policy specification, deployment, reasoning over policies, updating and maintaining policies, and enforcement. We propose that policy management is required for the web for (i) constraining different kinds of behavior including security, privacy, conversation, and collaboration, (ii) configuration management, (iii) describing business processes, and (iv) establishing trust and reputation.

### **WF10 2nd Annual Workshop on the Weblogging Ecosystem — Aggregation, Analysis and Dynamics**

Natalie Glance, *Intelliseek Applied Research Center*

Matthew Hurst, *Intelliseek Applied Research Center*

Eytan Adar, *Hewlett Packard Labs*

Location: 304

The weblogging microcosm has evolved into a distinct form, into a community of publishers. The strong sense of community amongst bloggers distinguishes weblogs from the various forms of online publications such as online journals, magazines and newsletters that flourished in the early days of the web and from traditional media such as newspapers, magazines and television. The use of weblogs primarily for publishing, as opposed to discussion, differentiates blogs from other online community forums, such as Usenet newsgroups and message boards. Often referred to as the blogosphere, the network of bloggers is a thriving ecosystem, with its own internally driven dynamics.



## Tuesday — Workshops

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The cross-linking that takes place between blogs, through blogrolls, explicit linking, trackbacks, and referrals creates implicit and explicit networks which define the communities of the weblogging world. create a strong sense of community in the weblogging world. There is work underway to understand the dynamics of the weblogging network, much of which springs from bloggers themselves. The self-publishing aspect of weblogs, the time-stamped entries, the highly interlinked nature of the blogging community and the significant impact of weblog content on politics, ideas, and culture make them a fascinating subject of study.

The objective of this workshop is to provide a forum for sharing research on the blogging ecosystem. The workshop will consist of technical papers, panel discussions, and demonstrations of research prototypes.

### **WF11 Activities on Semantic Web Technologies in Japan**

Noboru Shimizu, *Keio Research Institute*

Hideaki Takeda, *National Institute of Informatics*

Location: Hotel New Otani, Rindo (East)

The Semantic Web is a new Web technology that has potentiality of innovating the existing information society. In Japan, research institutes and industries are advancing various research projects on the Semantic Web and developing various practical applications.

In this workshop, each of presenters will speak about outlines of their research projects or practical applications on the Semantic Web in Japan, including some demonstrations of software. One of the purposes of the workshop is introducing Japanese activities in the Semantic Web field to many other country's participants, as the host country.

### **WF12 MobEA III - Customer Focused Mobile Services**

Johan Hjelm, *Ericsson*

Annakaisa Hayrynen, *Elisa Communication Research Center*

Bin Wei, *AT&T Shannon Laboratory*

Rittwik Jana, *AT&T Labs — Research*

Location: Hotel New Otani, Rindo (West)

We are in the midst of a mobile revolution. In order to realize the vision of pervasive mobile computing, the services provided have to be adapted to the users wants and needs. To do this, we need to go beyond technology, and understand the human-centric aspects of mobile computing. The objective of this workshop is to provide a single forum for researchers and technologists to discuss the state-of-the-art, present their contributions, and set future directions in emerging innovative applications for mobile wireless access.

Topics of interest for technical papers include, but are not limited to the following:

- Mobile web usage analysis
- Peer-to-peer mobile computing
- Security of mobile applications
- Methods for measuring mobile application usage
- Models and methods for qualitative analysis of applications usage
- User interface for mobile devices

## Tuesday — Workshops

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- Multimedia applications
- Enterprise applications
- Open-standards and applications
- Performance studies of mobile applications
- Context-Aware services and applications
- Mobility issues of web services

## Tuesday — Full Day Tutorials

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	TITLE	PRESENTERS	LOCATION
TF01	Network and Web Services Security concepts using Java	“Rags” Srinivas	Sumire
TF03	Web Engineering	Yogesh Deshpande and Martin Gaedke	Yuri
TF05	Internationalizing Web Content and Web Technology	Richard Ishida and Martin Dürst	Suisen

### TF01 Network and Web Services Security concepts using Java

Raghavan “Rags” Srinivas, *Technology Evangelist, Sun Microsystems*  
Location: Hotel New Otani, Sumire

Network and web services security concepts are fairly straightforward and simple to understand from a developer viewpoint, especially in conjunction with some working code that can be deployed on the Java platform and security tools that are generally available.

Attend this session to put into practice some of the concepts of security that you’ve heard or learnt and how to connect those dots to help in the implementation of real-life solutions. The session will walk through generating digests, signatures, generating and using keys and certificates to advanced concepts such as using Advanced Encryption Standards (AES). The newer concepts of web services security will be covered as well.

### TF03 Web Engineering: Developing Successful Web Applications In A Systematic Way

Yogesh Deshpande, *University of Western Sydney*  
Martin Gaedke, *University of Karlsruhe*  
Location: Hotel New Otani, Yuri

The Web environment is characterised by millions of Web sites and thousands of Web-based applications. The numbers will continue to grow as more and more countries and organizations adopt and adapt to the Web. Good Web development requires understanding of numerous issues and strategies that span many disciplines, both computing and noncomputing. However, there are very few standard methods for the Web developers to use. To add to the complexity, user expectations and needs change over time. Web technologies and standards also continue to evolve. Consequently, even the successful Web sites and applications require constant attention and modifications that are best described more as evolution than just maintenance, as understood in software development. Hence, there is a strong need to understand and undertake Web engineering. Engineering has traditionally addressed the issues of process management and product development, adapting them to the local environment or users as needed. Web development is truly global in its scope, as implied by the W3C’s Initiatives and Working Groups on personalisation, internationalisation and device independence, among others. Web Engineering reflects this global perspective in a systematic and multidisciplinary way. This tutorial will cover the issues of process management and product development in developing large Web sites and applications. It will analyse and highlight the challenges posed by the global perspective and present strategies that developers could follow for successful Web application development. There will be an extensive use of case studies throughout.

## Tuesday — Full Day Tutorials

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### **TF05** Internationalizing Web Content and Web Technology

Martin Dürst, *Aoyama Gakuin University*

Richard Ishida, *World Wide Web Consortium*

Location: Hotel New Otani, Suisen

Internationalization of Web content and Web technology means dealing with the world-wide variation in language, script, and culture. This tutorial starts with an introduction to writing system characteristics and how they affect Web technology. Next, character encoding is discussed in detail, with a focus on Unicode/ISO 10646 and encodings used in Asia. This leads to the model for character encoding on the Web, which is common to formats such as HTML, XHTML, XML, CSS, and RDF, and practical advice for document encoding and labelling.

Besides internationalized content, we discuss International Domain Names (IDN) and International Resource Identifiers (IRI), two new technologies for making the Web experience more seamless for non-English and non-Latin users. We then continue with international markup, including language and bidirectional markup, international rendering and styling, including recent work on CSS3 focused on the needs of Asia, and international processing, including XSLT, XQuery, and Web Services.

## Tuesday — Morning Tutorials

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	TITLE	PRESENTERS	LOCATION
TA03	Standards-Based Design	Eric Meyer	101B
TA05	Introduction to RDF Query with SPARQL	Dave Beckett, Steve Harris, Eric Prud'hommeaux and Andy Seaborne	101A
TA07	Web Content Mining	Bing Liu	301A

### TA03 Standards-Based Design

Eric A. Meyer, *Complex Spiral Consulting*

Location: 101B

The overall goal of this tutorial is to make attendees familiar with the current state of standards-oriented design and to improve their skills in this area. It will not spend time on 'selling' the benefits of such an approach, but will instead focus on how designers can more easily attain those benefits in the real world.

The tutorial will be split into four subtopics, each taking up about a quarter of the time available. The subtopics are: creating a development environment for free; the pros and cons of specific CSS design techniques; recent advances that improve standards support and counter CSS limitations; and current trends in standards-oriented design. The session will be interactive, with audience questions and observations very much encouraged.

### TA05 Introduction to RDF Query with SPARQL

Dave Beckett, *University of Bristol*

Steve Harris, *University of Southampton*

Eric Prud'hommeaux, *World Wide Web Consortium*

Andy Seaborne, *Hewlett-Packard Laboratories, Bristol*

Location: 101A

SPARQL is the query language and protocol for RDF being designed by the W3C. Around May 2005 the plan is that the work will be in its final stages (at Last Call stage) and that several compatible implementations will be shipping products supporting it.

The purposes of this tutorial are to introduce SPARQL, to explain its benefits for querying RDF over other approaches to enable easy access to manipulating RDF data.

We will demonstrate how SPARQL can be used to significantly simplify the development of semantic web applications enabling easy reuse of existing RDF data as well as building new RDF data services.

The tutorial is divided into two sections. In the first section, we give an overview of SPARQL's key features in accessing RDF, constraining it and producing result formats. By the end of the first section, the attendees should be able to write simple queries for extracting RDF data. In the second section, we propose to focus on applying SPARQL in the development of a small Semantic Web application, taking RDF from a number of data services, matching and transforming and using it to generate a variety of outputs including more RDF, XML and via XML transformations, HTML.

The tutorial will be delivered as slides with demonstrations of SPARQL queries done using web forms in the browser and on the command line. These will talk to servers providing SPARQL

## Tuesday — Morning Tutorials

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query over example data. Some software API work may be shown in Python, Java and possibly C depending on available of implementations in May 2005.

This tutorial will be presented at a level accessible to Web programmers, advanced developers and experienced students.

### **TA07** Web Content Mining

Bing Liu, *University of Illinois at Chicago*

Location: 301A

Web mining aims to develop a new generation of tools and techniques to effectively extract and/or mine useful information or knowledge from the Web. It consists of Web usage mining, Web structure mining, and Web content mining. Web usage mining refers to the discovery of user access patterns from Web usage logs. Web structure mining tries to discover useful knowledge from the structure of hyperlinks. Web content mining aims to extract/mine useful information or knowledge from web page contents.

In this tutorial, we focus on Web content mining. In the past few years, there was a rapid expansion of activities in the Web content mining area. This tutorial will introduce the main mining tasks/problems and state-of-the-art existing techniques for solving these problems. Topics include: data/information extraction, mining the Web to build concept hierarchies or ontology, mining for Web information integration, segmenting Web pages and detecting noise, mining online opinion sources such as reviews and forums, etc. All these tasks and their associated techniques have immediate applications in the real world.

The tutorial will have many examples to help participants to better understand the concepts and techniques, and also to illustrate how they can be deployed in practice to help businesses. All parts of the tutorial will have a mix of research and industry flavor, addressing seminal research concepts and also looking at the technology from an industry point of view. Thus, apart from researchers and graduate students, we particularly encourage practitioners from industry to participate.

## Tuesday — Afternoon Tutorials

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	TITLE	PRESENTERS	LOCATION
TP01	Basis for Automatic Web Service Composition	Giuseppe De Giacomo, Daniela Berardi and Massimo Mecella	101A
TP06	Matching Words and Pictures — Problems, Applications and Progress	Latifur Khan	301A
TP07	Location-based Services in Mobile Information Systems — Architectures, Description, and Systems	Ling Liu	101B

### **TP01** Basis for Automatic Web Service Composition

Giuseppe De Giacomo, *Università di Roma “La Sapienza”*

Daniela Berardi, *Università di Roma “La Sapienza”*

Massimo Mecella, *Università di Roma “La Sapienza”*

Location: 101A

The tutorial aims at providing a deep comprehension of Web Service Composition problem and automated techniques to tackle it. Web Service Composition is currently one the most hyped and addressed issue in the Service Oriented Computing. Starting from an analysis of current technologies and standards for Web Service composition, the tutorial will lead the attendees to consider formal models at the base of current proposals, and techniques that can be fruitfully considered to address automatic composition synthesis in each of them.

### **TP06** Matching Words and Pictures: Problems, Applications and Progress

Latifur Khan, *University of Texas at Dallas*

Location: 301A

The development of technology generates huge amounts of non-textual information, such as images. An efficient image annotation and retrieval system is highly desired. Clustering algorithms make it possible to represent visual features of images with finite symbols. Based on this, many statistical models, which analyze correspondence between visual features and words and discover hidden semantics, have been published. These models improve the annotation and retrieval of large image databases. However, image data usually have a large number of dimensions. Traditional clustering algorithms assign equal weights to these dimensions, and become confounded in the process of dealing with these dimensions.

In this tutorial, first, we will present current state of the art and their shortcomings. Second, we will present weighted feature selection algorithm as a solution to the existing problem. For a given cluster, we determine relevant features based on histogram analysis and assign greater weight to relevant features as compared to less relevant features. Third, we will exploit spatial correlation to disambiguate visual features, and spatial relationship will be constructed by spatial association rule mining. Fourth, we will demonstrate various models including current state of the art to link visual tokens with keywords based on the clustering results of K-means algorithm with weighted feature selection and without feature selection, and will evaluate performance using precision, recall and correspondence accuracy using benchmark dataset. Fifth, we will show that weighted feature

## Tuesday — Afternoon Tutorials

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selection is better than traditional ones for automatic image annotation and retrieval. Finally, we will discuss open problems and future directions in the domain of image and video.

### **TP07 Location-based Services in Mobile Information Systems: Architectures, Description, and Systems**

Ling Liu, *Georgia Institute of Technology*

Location: 101B

With the growing market of sensing and positioning technologies and the growing popularity and availability of mobile communications, location-based information management has become an important problem in mobile computing systems. Furthermore, the computational capabilities in mobile devices, ranging from navigational systems in cars to hand-held devices and cell phones, continue to rise, making mobile devices increasingly accessible. However, significant research efforts to date have been devoted to location management techniques and location-based services in centralized location monitoring systems. Very few have studied the distributed approach to real-time location monitoring. We argue that for mobile applications that need to manage a large and growing number of mobile objects, the centralized approaches do not scale well in terms of server load and network bandwidth, and are vulnerable to single point of failure.

This tutorial presents the necessary concepts, architectures, techniques, and infrastructure to understand Location-based Services in mobile information systems. The tutorial is designed to be self-contained, and gives the essential background for anyone planning to learn about and contribute to the principles and applications of location-based services in mobile commerce and geographical information systems. It guides practitioners by highlighting best practices in location based information monitoring and introduces students and advanced developers to design and engineering issues in building scalable and privacy-aware distributed location based services, including the key trade-offs, as well as the limitations of current approaches. This tutorial is presented at a senior or beginning graduate student level. It is accessible to Web programmers, advanced application developers, and graduate students.



## Wednesday

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Room	9:00 - 9:30	9:30 - 10:30	13:30 - 14:30
Hall	Opening Ceremony	<b>Keynote:</b> Tim Berners-Lee, World Wide Web Consortium	<b>Keynote:</b> Yuji Inoue, NTT

Room	10:50 - 12:20	14:40 - 16:10	16:30 - 18:00
301	PT01 Usage Analysis	PT04 Semantic Querying	PT07 Semantic Web
302	PT02 Wide-area Architectures and Protocols	PT05 Web Services	PT08 Applications
303	PT03 Data Extraction	PT06 Web Application Design	PT09 Indexing and Querying
304	IT01 Industrial and Practical Experience Track (Paper 1)	IT02 Industrial and Practical Experience Track (Invited 1)	IT03 Industrial and Practical Experience Track (Invited 2)
201	PANEL01 Can semantic web be made to flourish?	PANEL02 Current trends in the integration of search and browsing	PANEL03 Do we need more web performance research?
ICR	W3C01 Enabling the Mobile Web	W3C02 Accessibility Aspects within Mobile Web and Other Developing Technologies	W3C03 Foundations And Future Directions of Web Services

Room	18:30 - 20:30
8	Poster Reception

**9:00 – 9:30**

### Opening Ceremony

Location: Convention Hall

**9:30 – 10:30**

### Keynote Speech

Location: Convention Hall

Session Chair: Allan Ellis, *Southern Cross University*

#### **WWW at 15 Years: Looking Forward**

Tim Berners-Lee, *World Wide Web Consortium*

The key property of the WWW is its universality: One must be able to access it whatever the hardware device, software platform, and network one is using, and despite the disabilities one might have, and whether one is in a “developed” or “developing” country; it must support information of any language, culture, quality, medium, and field without discrimination so that a hypertext link can go anywhere; it must support information intended for people, and that intended for machine processing. The Web architecture incorporates various choices which support these axes of universality.

Currently the architecture and the principles are being exploited in the recent Mobile Web initiative in W3C to promote content which can be accessed optimally from conventional computers and mobile devices. New exciting areas arise every few months as possible Semantic Web flagship applications. As new areas burst forth, the fundamental principles remain important and are extended and adjusted. At the same time, the principles of openness and consensus among international stakeholders which the WWW Consortium (W3C) employs for new technology are adjusted, but ever-important.

## Wednesday

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**10:30 – 10:50**

Break

**10:50 – 12:20** Parallel Sessions

**PT01** Usage Analysis

Location: Room 301

Session Chair: Bing Liu, *University of Illinois at Chicago*

**Semantic Similarity Between Search Engine Queries Using Temporal Correlation**

Steve Chien, *Microsoft Research*

Nicole Immerlica, *MIT*

**Duplicate Detection in Click Streams**

Ahmed Metwally\*, Divyakant Agrawal† and Amr El Abbadi†

\* *UCSB, ValueClick, Inc.*

† *UCSB*

**Improving Recommendation Lists Through Topic Diversification**

Cai-Nicolas Ziegler\*, Sean M. McNee†, Joseph A. Konstan† and Georg Lausen\*

\* *University of Freiburg, Germany*

† *University of Minnesota, USA*

**PT02** Wide-area Architectures and Protocols

Location: Room 302

Session Chair: Misha Rabinovich, *AT&T Labs - Research*

**GlobeDB: Autonomic Data Replication for Web Applications**

Swaminathan Sivasubramanian\*, Gustavo Alonso†, Guillaume Pierre\* and Maarten van Steen\*

\* *Department of Computer Science, Vrije Universiteit, Amsterdam*

† *Department of Computer Science, Swiss Federal Institute of Technology (ETH), Zurich*

**Hierarchical Substring Caching for Efficient Content Distribution to Low-Bandwidth Clients**

Utku Irmak and Torsten Suel, *Polytechnic University*

**Executing Incoherency Bounded Continuous Queries at Web Data Aggregators**

Rajeev Gupta\*, Ashish Puri† and Krithi Ramamritham†

\* *IBM, India Research Lab*

† *Indian Institute of Technology, Bombay*

**PT03** Data Extraction

Location: Room 303

Session Chair: Shinichi Morishita, *University of Tokyo*

**Fully Automatic Wrapper Generation for Search Engines**

Hongkun Zhao\*, Weiyi Meng\*, Zonghuan Wu†, Vijay Raghavan† and Clement Yu‡

\* *State University of New York at Binghamton*

† *University of Louisiana at Lafayette*

‡ *University of Illinois at Chicago*

## Wednesday

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### **Web Data Extraction Based on Partial Tree Alignment**

Yanhong Zhai and Bing Liu, *University of Illinois at Chicago*

### **Thresher: Automating the Unwrapping of Semantic Content from the World Wide Web**

Andrew Hogue, *Google, Inc., MIT CSAIL*

David Karger, *MIT CSAIL*

## **IT01 Industrial and Practical Experience Track (Paper 1)**

Location: Room 304

Session Chair: Alex Arsky, *Yahoo!*

### **A personalized search engine based on web-snippet hierarchical clustering**

P. Ferragina and Antonio Gull, *Dipartimento di Informatica, Pisa*

### **Ranking Definitions with Supervised Learning Methods**

Jun Xu\*, Yunbo Cao<sup>†</sup>, Hang Li<sup>†</sup> and Min Zhao<sup>‡</sup>

\**Nankai University*

<sup>†</sup>*Microsoft Research Asia*

<sup>‡</sup>*Chinese Academy of Sciences*

### **Identifying link farm spam pages**

Baoning Wu and Brian D. Davison, *Lehigh University*

### **The Volume and Evolution of Web Page Templates**

David Gibson\*, Kunal Punera<sup>†</sup> and Andrew Tomkins\*

\**IBM Almaden Research Center*

<sup>†</sup>*University of Texas at Austin*

## **PANEL01 Can semantic web be made to flourish?**

Location: Room 201

Moderator: David Wood, *Software Memetics*

Panelists: Zavisla Bjelogrić, *Co-founder, @semantics*

Bernadette Hyland, *Co-founder, Tucana Technologies*

Prof. Jim Hendler, *Director, MIND Lab, University of Maryland*

Kanzaki Masahide, *Consultant, Kanzaki.com*

This panel's objective will be to discuss whether the Semantic Web can be made to grow in a "viral" manner, like the World Wide Web did in the early 1990s. The scope of the discussion will include efforts by the World Wide Web Consortium's Semantic Web Best Practices & Deployment Working Group to identify and publish best practices of Semantic Web practitioners, and the barriers to adoption of those practices by a wider community. The concept of "best practices" as it applies to a distributed, diverse and partially-defined Semantic Web will be discussed and its relevance debated. Specifically, panelists will discuss the capability of standards bodies, commercial companies and early adopters to create a viral technology.

## Wednesday

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### **W3C01** Enabling the Mobile Web

Location: International Conference Room

Session Chairs: Dan Applequist, *Vodafone*

Stéphane Boyera, *W3C Device Independence Activity Lead*

Speakers: Dan Applequist, *Vodafone*

Stéphane Boyera, *W3C Device Independence Activity Lead*

The session's goal is twofold: present in details the objectives and roadmap of W3C's work in the Mobile Web area (in Mobile Web Best Practices and Device Description), and get feedback and input from Japanese companies involved in the mobile market in Japan, very advanced in terms of enabling and accessing the Web on mobile devices.

The session will mainly consist on a panel discussion where all actors of the mobile delivery chain will be represented.

**12:20 – 13:30**

### **Lunch**

Location: Exhibition Hall 8

**13:30 – 14:30**

### **Keynote Speech**

Location: Convention Hall

Session Chair: Tatsuya Hagino, *Keio University*

#### **Innovation for a Human-Centered Network**

Yuji Inoue, *NTT*

This talk presents NTT's approach for realizing a Human-Centered Network. Last November, we announced the NTT Group's Medium-Term Management Strategy, which consists of three management objectives: (1) building the ubiquitous broadband market and helping achieve the e-Japan Strategy and the u-Japan Initiative; (2) building a safe, secure, and convenient communications network environment and broadband access infrastructure, while achieving a seamless migration from the legacy telephone network to the next generation network; and (3) striving to increase corporate value and achieve sustainable growth. Since the management strategy takes account of Japan's future social issues such as declining birthrate and aging population, the need to reduce the environmental load, etc, we believe that the R&D activities directed towards accomplishing these objectives consequently lead to the realization of a Human-Centered Network.

**14:40 – 16:10** Parallel Sessions

### **PT04** Semantic Querying

Location: Room 301

Session Chair: Andrew Tomkins, *IBM Almaden Research Center*

## Wednesday

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### **Ranking a Stream of News**

Gianna M. Del Corso\*, Antonio Gullí† and Francesco Romani\*

\* *Dip. di Informatica, Pisa, Italy*

† *Dip. di Informatica, Pisa, Italy and IIT-CNR*

### **Algorithmic Detection of Semantic Similarity**

Ana Maguitman, Filippo Menczer, Heather Roinestad and Alessandro Vespignani, *Indiana University*

### **SemRank: Ranking Complex Relationship Search Results on the Semantic Web**

Kemafor Anyanwu, Angela Maduko and Amit Sheth, *University of Georgia*

## **PT05 Web Services**

Location: Room 302

Session Chair: Arnaud Sahuguet, *Bell Labs*

### **A Service Creation Environment based on End to End Composition of Web Services**

Vikas Agarwal, Koustuv Dasgupta, Neeran Karnik, Arun Kumar, Ashish Kundu, Sumit Mittal and Biplav Srivastava, *IBM India Research Lab*

### **Ensuring Required Failure Atomicity of Composite Web Services**

Sami Bhiri, Olivier Perrin and Claude Godart, *LORIA-INRIA France*

### **Web Service Interfaces**

Dirk Beyer, *EPFL, Lausanne, Switzerland*

Arindam Chakrabarti, *University of California, Berkeley*

Thomas A. Henzinger, *EPFL Lausanne, CH & UC Berkeley*

## **PT06 Web Application Design**

Location: Room 303

Session Chair: Geert-Jan Houben, *Eindhoven University of Technology*

### **Building Adaptable and Reusable XML Applications with Model Transformations**

Ivan Kurtev and Klaas van den Berg, *Software Engineering Group, University of Twente*

### **Exception Handling in Workflow-Driven Web Applications**

Marco Brambilla, Stefano Ceri, Sara Comai and Christina Tziviskou, *Politecnico di Milano*

### **AwareDAV: A Generic WebDAV Notification Framework and Implementation**

Henning Qin Jehøj, Niels Olof Bouvin and Kaj Grønbaek, *Department of Computer Science, University of Aarhus*

## **IT02 Industrial and Practical Experience Track (Invited 1)**

Location: Room 304

Session Chair: Kazuo Iwano, *IBM Japan*

### **DoCoMo's Challenge Towards New Mobile Services**

Kiyoyuki Tsujimura, *NTT DoCoMo*

### **Automatic Text Processing to Enhance Product Search for On-line Shopping**

Gilles Vandelle, *Kelkoo*

## Wednesday

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### **Approach and the problem of business of NHN Group in South Korea, Japan, and China**

TBD, *NHN Corporation Group*

### **PANEL02 Current trends in the integration of search and browsing**

Location: Room 201

Moderators: Andrei Z Broder, *IBM T.J. Watson Research Center, USA*

Yoelle S. Maarek, *IBM Research, Israel*

Panelists: Krishna Bharat, *Principal Scientist, Google Inc.*

Susan Dumais, *Senior Researcher, Microsoft Research*

Steve Papa, *Founder and CEO, Endeca*

Jan Pedersen, *Chief Scientist, Yahoo Inc.*

Prabhakar Raghavan, *Senior Vice President and CTO, Verity, Inc.*

Searching and browsing are the two basic information discovery paradigms, since the early days of the Web. After more than ten years down the road, three schools seem to have emerged: (1) The search-centric school argues that guided navigation is superfluous since free form search has become so good and the search UI so common, that users can satisfy all their needs via simple queries (2) The taxonomy navigation school claims that users have difficulties expressing informational needs and (3) The meta-data centric school advocates the use of meta-data for narrowing large sets of results, and is successful in e-commerce where it is known as “multi faceted search”. This panel brings together experts and advocates for all three schools, who will discuss these approaches and share their experiences in the field. We will ask the audience to challenge our experts with real information architecture problems.

### **W3C02 Accessibility Aspects within Mobile Web and Other Developing Technologies**

Location: International Conference Room

Session Chair: Shawn Henry, *W3C WAI Activity Team*

Speakers: Shawn Henry, *W3C WAI Activity Team*

Wendy Chisholm, *W3C*

In the first part of this session we explain the interdependencies between essential components of Web accessibility, and show that the responsibility for Web accessibility goes beyond the content developer to include developers of authoring tools, user agents, assistive technologies, and technical specifications. We provide a brief update on WCAG 2.0, ATAG 2.0, and international Web accessibility developments.

In the second part, we explore how the knowledge and experience in Web accessibility helps inform the development of emerging Web technologies, including the mobile Web, multimodal interaction, and content adaptation.

**16:10 – 16:30**

**Break**

## Wednesday

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### 16:30 – 18:00 Parallel Sessions

#### PT07 Semantic Web

Location: Room 301

Session Chair: Jim Hendler, *University of Maryland*

##### **Learning Domain Ontologies for Web Service Descriptions: an Experiment in Bioinformatics**

Marta Sabou\*, Chris Wroe†, Carole Goble† and Gilad Mishne‡

\* *Vrije Universiteit Amsterdam*

† *University of Manchester*

‡ *University of Amsterdam*

##### **Making RDF Presentable — Selection, Structure and Surfability for the Semantic Web**

Lloyd Rutledge, Jacco van Ossenbruggen and Lynda Hardman, *CWI*

#### PT08 Applications

Location: Room 302

Session Chair: Jonathan Trevor, *Fuji-Xerox Palo Alto Laboratory*

##### **Shared Lexicon for Distributed Annotations on the Web**

Paolo Avesani and Marco Cova, *ITC-irst*

##### **Using XForms to Simplify Web Programming**

Richard Cardone, Danny Soroker and Alpana Tiwari, *IBM Watson Research Center*

##### **Web-Assisted Annotation, Semantic Indexing and Search of Television and Radio News**

Mike Dowman\*, Valentin Tablan\*, Hamish Cunningham\* and Borislav Popov†

\* *University of Sheffield*

† *Ontotext Lab, Sirma AI EAD*

#### PT09 Indexing and Querying

Location: Room 303

Session Chair: Frank McSherry, *Microsoft*

##### **Improving Web Search Performance Via a Locality Based Static Pruning Method**

Edleno S. de Moura\*, Célia Francisca dos Santos\*, Daniel R. Fernandes\*, Altigran S. da Silva\*, Pável P. Calado† and Mário Nascimento‡

\* *Federal University of Amazonas*

† *INESC*

‡ *University of Alberta*

##### **Sampling Search-Engine Results**

Aris Anagnostopoulos, *Brown University*

Andrei Broder, *IBM Watson Research Lab*

David Carmel, *IBM Research Lab in Haifa*

##### **Three-Level Caching for Efficient Query Processing in Large Web Search Engines**

Xiaohui Long and Torsten Suel, *Polytechnic University*

## Wednesday

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### **IT03 Industrial and Practical Experience Track (Invited 2)**

Location: Room 304

Session Chair: Naohiko Uramoto, *IBM Tokyo Research Laboratory*

#### **Internet Search Engines: Past and Future**

Jan Pedersen, *Yahoo!*

#### **News in the Age of the Web**

Krishna Bharat, *Google*

#### **Technical Challenges in Exploiting the Web as a Business Resource**

Andrew Tomkins, *IBM*

### **PANEL03 Do we need more web performance research?**

Location: Room 201

Moderator: Michael Rabinovich, *AT&T Labs - Research, USA*

Panelists: Giovanni Pacifici, *IBM Watson Research Center, USA*

Michele Colajanni, *University of Modena, Italy*

Krithi Ramamritham, *IIT Bombay, India*

Bruce Maggs, *CMU/Akamai, USA*

This panel will discuss the future and purpose of Web performance research, concentrating on the reasons for modest success in the adoption of research results in practice. The panel will in particular examine factors that hinder technology transfer in the Web performance area, consider examples of past successes and failures in this arena, and stimulate the discussion on how to make Web performance research more relevant.

### **W3C03 Foundations And Future Directions of Web Services**

Location: International Conference Room

Session Chair: Hugo Haas, *W3C Web Services Activity Lead*

Speakers: Hugo Haas, *W3C Web Services Activity Lead*

Charlton Barreto, *webMethods*

This session will give an overview of the motivation for Web services, how the technologies standardized at W3C fit together, starting with the messaging framework (SOAP 1.2, MTOM, WS-Addressing 1.0) and continuing with the description languages for services and choreographies (WSDL 2.0, WS-CDL 1.0). Finally, this presentation will discuss future work considered to continue making the Web services' promise a reality.

**18:30 – 20:30**

### **Poster Reception**

Location: Exhibition Hall 8



## Thursday

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Room	9:00 - 10:00	13:30 - 14:30
Hall	<b>Keynote:</b> Eric Brewer, University of California at Berkeley	<b>Keynote:</b> Lorrie Cranor, Carnegie Mellon University

Room	10:30 - 12:00	14:40 - 16:10	16:30 - 18:00
301	PT10 XML Query and Programming Languages	PT13 Web Engineering with Semantic Annotation	PT16 Semantic Search
302	PT11 Web-based Educational Applications	PT14 User-focused Search and Crawling	PT17 Security Through the Eyes of Users
303	PT12 Text Analysis and Extraction	PT15 Trustworthy web sites	PT18 Measurements and analysis
304	IT04 Industrial and Practical Experience Track (Paper 2)	14:40 - 17:00 IT05 Industrial and Practical Experience Track (Panel)	
201	PANEL04 Mobile Multimedia Services	PANEL05 On culture in a world-wide information society: Toward the knowledge society - the challenge	PANEL06 Exploiting the dynamic networking effects of the web
ICR	W3C04 Privacy and the Semantic Web	W3C05 Recent Work in the Semantic Web Activity: Query and Best Practices	W3C06 Web Internationalization Developments

Room	18:30 - 20:30
Tsuru	Conference Dinner

### 9:00 – 10:00

#### Keynote Speech

Location: Convention Hall

Session Chair: Prabhakar Raghavan, *Verity, Inc.*

#### The Case for Technology for Developing Regions

Eric Brewer, *University of California, Berkeley*

Moore's Law and the wave of technologies it enabled have led to tremendous improvements in productivity and the quality of life in the industrialized world. Yet, technology has had almost no effect on the four billion people that make less US\$2000/day. In this talk I argue that the decreasing costs of computing and wireless networking make this the right time to spread the benefits of technology, and that the biggest missing piece is a lack of focus on the problems that matter, including health, education, and government. After covering some example applications that have shown very high impact, I take an early look at the research agenda for developing regions. Finally, I examine some of the pragmatic issues required to make progress on these very challenging problems. My goal is to convince high-tech researchers that technology for developing regions is an important and viable research topic.

### 10:00 – 10:30

#### Break

## Thursday

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### **10:30 – 12:00** Parallel Sessions

#### **PT10** XML Query and Programming Languages

Location: Room 301

Session Chair: Jim Webber, *University of Sydney*

##### **Sub-document queries over XML with XSquirrel**

Arnaud Sahuguet, *Bell Labs research*

Bogdan Alexe, *Ecole Polytechnique + ENST*

##### **XJ : Facilitating XML Processing in Java**

Matthew Harren\*, Mukund Raghavachari†, Oded Shmueli‡, Michael Burke†, Rajesh Bordawekar†, Igor Pechtchanski† and Vivek Sarkar†

\* *University of California, Berkeley*

† *IBM T.J. Watson Research Center*

‡ *Technion Israel Institute of Technology*

##### **XQuery Containment in Presence of Variable Binding Dependencies**

Li Chen, *San Diego Supercomputer Center*

Elke Rundensteiner, *Worcester Polytechnic Institute*

#### **PT11** Web-based Educational Applications

Location: Room 302

Session Chair: Lora Aroyo, *Eindhoven University of Technology*

##### **eBag - a Ubiquitous Web Infrastructure for Nomadic Learning**

Christina Brodersen\*, Bent Guldbjerg Christensen\*, Kaj Grønbaek\* and Christian Dindler†

\* *Department of Computer Science, University of Aarhus*

† *Department of Information- and Media Sciences, University of Aarhus*

##### **Online Curriculum on the Semantic Web: The CSD-UoC Portal for Peer-to-Peer e-learning**

Sofia Peditaditaki, Apostolos Apostolidis and Dimitris Kotzinos, *Department of Computer Science, University of Crete*

##### **The Classroom Sentinel: Supporting Data-Driven Decision Making in the Classroom**

Mark K. Singley and Richard B. Lam, *IBM T.J. Watson Research Center*

#### **PT12** Text Analysis and Extraction

Location: Room 303

Session Chair: Filippo Menczer, *University of Indiana*

##### **Topic Segmentation of Message Hierarchies for Indexing and Navigation Support**

Jong Wook Kim, K. Selcuk Candan and Mehmet E. Donderler, *Arizona State University*

##### **Gimme' The Context: Context-driven automatic semantic annotation with C-PANKOW**

Philipp Cimiano\*, Günter Ladwig\* and Steffen Staab†

\* *Institute AIFB, University of Karlsruhe*

† *Institute for Computer Science, University of Koblenz-Landau*

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### **Opinion Observer: Analyzing and Comparing Opinions on the Web**

Bing Liu, Mingqing Hu and Junsheng Cheng, *University of Illinois at Chicago*

### **IT04 Industrial and Practical Experience Track (Paper 2)**

Location: Room 304

Session Chair: Yuichi Nakamura, *IBM Tokyo Research Laboratory*

#### **The Infocious Web Search Engine: Improving Web Searching through Linguistic Analysis**

Alexandros Ntoulas, Gerald Chao and Junghoo Cho, *Infocious Inc.*

#### **How to make Web sites talk together - Web Service Gateway Solution**

Hoang Pham Huy\*, Takahiro Kawamura† and Tetsuo Hasegawa†

\**Hanoi University of Technology*

†*Toshiba R&D Center*

#### **Diversified SCM Standard for the Japanese Retail Industry**

Koichi Hayashi, Naoki Koguro and Reki Murakami, *UL Systems, Inc.*

#### **Crawling a Country: Better Strategies than Breadth-First for Web Page Ordering**

Ricardo Baeza-Yates\*, Carlos Castillo\*, Mauricio Marin† and Andrea Rodriguez‡

\**Universidad de Chile*

†*Universidad de Magallanes*

‡*Universidad de Concepción*

### **PANELO4 Mobile Multimedia Services**

Location: Room 201

Moderator: Behzad Shahraray, *AT&T Labs - Research, USA*

Panelists: Wei-Ying Ma, *Microsoft Research, USA*

Avideh Zakhor, *University of California, Berkeley, USA*

Noboru Babaguchi, *Osaka University, Japan*

This panel will mainly focus on the role that media processing can play in creating mobile communications, information, and entertainment services. A major premise of our discussion is that media processing techniques go beyond compression and can be employed to monitor, filter, convert, and repurpose information. Such automated techniques can serve to create personalized information and entertainment services in a cost-effective way, adapt existing content for consumption on mobile devices, and circumvent the inherent limitations of mobile devices. Some examples of the applications of media processing techniques for mobile service generation will be given.

### **W3C04 Privacy and the Semantic Web**

Location: International Conference Room

Session Chairs: Giles Hogben, *Joint Research Center of the European Commission*

Thomas Roessler, *W3C Technology and Society Team*

Speakers: Giles Hogben, *Joint Research Center of the European Commission*

Thomas Roessler, *W3C Technology and Society Team*

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This session will explore privacy-enhancing technologies beyond P3P, how the semantic web is contributing to these technologies and vice-versa.

We will discuss new technologies for enforcing privacy promises, evaluating the security of data processing operations in realtime and reasoning about anonymity of authorization credentials requested. The session will consist of presentations and a subsequent panel discussion.

**10:00 – 10:30**

### Lunch

Location: Exhibition Hall 8

**13:30 – 14:30**

### Keynote Speech

Location: Convention Hall

Session Chair: Fred Douglass, *IBM Research*

#### **Towards Usable Web Privacy and Security**

Lorrie Cranor, *Carnegie Mellon University*

Internet users now rely on a whole arsenal of tools to protect their security and privacy. Experts recommend that computer users install personal firewalls, anti-virus software, spyware blockers, spam filters, cookie managers, and a variety of other tools to keep themselves safe. Users are told to pick hard-to-guess passwords, use a different password at every Web site, and not to write any of their passwords down. They are told to read privacy policies before providing personal information to Web sites, look for lock icons before typing in a credit card number, refrain from opening email attachments from people they don't know, and even to think twice about opening email attachments from people they do know. With so many do's and don'ts, it is not surprising that much of this advice is ignored. In this talk I will highlight usability problems that make it difficult for people to protect their privacy and security on the Web, and I will discuss a number of approaches to addressing these problems.

**14:40 – 16:10** Parallel Sessions

**PT13** Web Engineering with Semantic Annotation

Location: Room 301

Session Chair: Piero Fraternali, *Politecnico di Milano*

#### **Accessibility: A Web Engineering Approach**

Peter Plessers\*, Sven Casteleyn\*, Yeliz Yesilada†, Olga De Troyer\*, Robert Stevens†, Simon Harper† and Carole Goble†

\* *Vrije Universiteit Brussel*

† *School of Computer Science*

#### **A Multilingual Usage Consultation Tool based on Internet Searching —More than search engine, Less than QA—**

Kumiko Tanaka-Ishii and Hiroshi Nakagawa, *University of Tokyo*

#### **Improving Portlet aggregation through deep annotation**

Oscar Díaz, Jon Iturrioz and Arantza Irastorza, *Department of Computer Languages and Systems, University of the Basque Country, Spain*

## Thursday

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### PT14 User-focused Search and Crawling

Location: Room 302

Session Chair: Brian Davison, *Lehigh*

#### **CubeSVD: A Novel Approach to Personalized Web Search**

Jian-Tao Sun\*, Hua-Jun Zeng<sup>†</sup>, Huan Liu<sup>‡</sup>, Yu-Chang Lu<sup>§</sup> and Zheng Chen<sup>†</sup>

\**Department of Computer Science, TsingHua University.*

<sup>†</sup>*Microsoft Research Asia*

<sup>‡</sup>*Department of Computer Science Engineering, Arizona State University*

<sup>§</sup>*Department of Computer Science, TsingHua University*

#### **Automatic Identification of User Goals in Web Search**

Uichin Lee, Zhenyu Liu and Junghoo Cho, *Computer Science Department, UCLA*

#### **User-Centric Web Crawling**

Sandeep Pandey and Christopher Olston, *CMU*

### PT15 Trustworthy web sites

Location: Room 303

Session Chair: Oliver Spatscheck, *AT&T Labs-Research*

#### **An Abuse-Free Fair Contract Signing Protocol Based on the RSA Signature**

Guilin Wang, *Institute for Infocomm Research, Singapore*

#### **SGuard: Countering Vulnerabilities in Reputation Management for Decentralized Overlay Networks**

Mudhakar Srivatsa, Li Xiong and Ling Liu, *College of Computing, Georgia Tech*

#### **Static Approximation of Dynamically Generated Web Pages**

Yasuhiko Minamide, *University of Tsukuba*

### PANEL05 On culture in a world-wide information society: Toward the knowledge society - the challenge

Location: Room 201

Moderator: Alfredo M. Ronchi, *Politecnico di Milano, Milano Italy*

Panelists: Lynn Thiesmeyer, *Keio University, Tokyo, Japan*

Antonella Quacchia, *International Labor Office, Geneve, Swiss*

Georges Mihajes, *Oslo Platform, Oslo, Norway*

Katsuhiko Onoda, *Foundation for Computer & Communication Promotion, Japan*

Ranjit Makkuni, *Sacred World Foundation - New Delhi - India*

Starting from more than ten years of experience and achievements in online cultural content, the panel aims to provide a comprehensive view on controversial issues, or unsolved problems, both in the WWW and Cultural community to stimulate lively, thoughtful, and sometimes provocative discussions. Panelists will outline the relevance of digital collections of intangible heritage and endangered archives and discuss the following topics: the “global” Web vs. the preservation of “local” cultural identities, cultural diversities and their relevance in delivering web based services, preservation & future of digital memories, Web-based development and sustainability models. We expect the panelists to actively engage the audience and help them broaden their understanding of the issues.

URL: [http://www.medicif.org/Events/MEDICI\\_events/WWW2005/default.htm](http://www.medicif.org/Events/MEDICI_events/WWW2005/default.htm)

## Thursday

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### **W3C05 Recent Work in the Semantic Web Activity: Query and Best Practices**

Location: International Conference Room

Session Chair: Guus Schreiber, *W3C Semantic Web Best Practices and Deployment Working Group co-chair (Vrije Universiteit)*

Speakers: Guus Schreiber, *W3C Semantic Web Best Practices and Deployment Working Group co-chair (Vrije Universiteit)*

Jeremy Carroll, *HP*

David Wood, *Mindswap, co-chair SWBPD*

Eric Prud'hommeaux, *W3C*

This session presents recent work in the W3C Semantic Web activity, in particular the activities of the Semantic Web Best Practices & Deployment Working Group and the Data Access Working Group.

The session will feature a number of talks addressing selected topics from this work, namely (i) links between RDF/OWL and UML. (ii) support for RDF/OWL-based ontology engineering, (iii) representing RDF metadata in XHTML, and (iv) an overview of the draft query language SPARQL. The session will also show some sample applications of semantic-web technology.

**14:40 – 17:00**

### **IT05 Industrial and Practical Experience Track Panel How Search Engines Shape the Web**

Location: Room 304

Moderator: Byron Dom, *Yahoo!*

Panelists: Krishna Bharat, *Google*

Andrei Broder, *IBM*

Jan Pedersen, *Yahoo!*

Yoshinobu Tonomura, *NTT*

Marc Najork, *Microsoft*

**16:10 – 16:30**

**Break**

**16:30 – 18:00 Parallel Sessions**

### **PT16 Semantic Search**

Location: Room 301

Session Chair: Junghoo (john) Cho, *University of California, Los Angeles*

#### **A Search Engine for Large-Corpus Language Applications**

Michael J. Cafarella and Oren Etzioni, *University of Washington*

#### **An Enhanced Model for Searching in Semantic Portals**

Lei Zhang\*, Yong Yu\*, Jian Zhou\*, ChenXi Lin\* and David Y. Yang†

\**Shanghai JiaoTong University*

†*Hong Kong University of Science and Technology*

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### **Disambiguating Web Appearances of People in a Social Network**

Ron Bekkerman and Andrew McCallum, *Department of Computer Science, University of Massachusetts*

### **PT17 Security Through the Eyes of Users**

Location: Room 302

Session Chair: Mark Manasse, *Microsoft Research*

#### **A Convenient Method for Securely Managing Passwords**

J. Alex Halderman, Brent Waters and Edward W. Felten, *Department of Computer Science, Princeton University*

#### **Improving Understanding of Website Privacy Policies with Fine-Grained Policy Anchors**

Stephen E. Levy, *Watson Research Center, IBM*

Carl Gutwin, *Computer Science Department, University of Saskatchewan*

#### **Hardening Web Browsers Against Man-in-the-Middle and Eavesdropping Attacks**

Haidong Xia and José Carlos Brustoloni, *University of Pittsburgh*

### **PT18 Measurements and analysis**

Location: Room 303

Session Chair: Prashant Shenoy, *University of Massachusetts*

#### **ATMEN: A Triggered Network Measurement Infrastructure**

Balachander Krishnamurthy\*, Harsha V. Madhyastha† and Oliver Spatscheck\*

\**AT&T Labs-Research*

†*University of Washington*

#### **On the lack of typical behavior in the global Web traffic network**

Mark Meiss, Filippo Menczer and Alessandro Vespignani, *Indiana University*

#### **Analysis of Multimedia Workloads with Implications for Internet Streaming**

Lei Guo\*, Songqing Chen†, Zhen Xiao‡ and Xiaodong Zhang\*

\**Department of Computer Science, College of William and Mary*

†*Department of Computer Science, George Mason University*

‡*AT&T Labs-Research*

### **PANEL06 Exploiting the dynamic networking effects of the web**

Location: Room 201

Moderator: Ramesh Sarukkai, Yahoo, USA

Panelists: Prof. Soumen Chakrabarthy, *Professor, IIT Bombay*

Dr. Gary William Flake, *Head of Research Labs, Yahoo!*

Dr. Narayanan Shivakumar, *Director of Ad Systems, Google*

Prof. Asim M. Ansari, *Professor, Columbia Business School*

This panel aims to explore the dynamic networking effects of the Web. Today, linkages on the Web are augmented with dynamic connectivities based on various monetization strategies: e.g. ads and sponsored links. Such linkages change the dynamics of user click/flow on the Web. The key focus of this panel is to debate whether/how such dynamic effects on the Web can

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be modeled and best exploited. How can we derive cooperative placement strategies that are optimal from a customer perspective? As the World Wide Web becomes more dynamic with fluid link placements guided by different factors, optimizing link placement in a cooperative fashion across the Web will be an integral and crucial component.

URL: <http://research.yahoo.com/workshops/www2005/NetworkingEffectsWeb/>

### **W3C06** Web Internationalization Developments

Location: International Conference Room

Session Chair: Richard Ishida, *W3C Internationalization Activity Lead*

Speaker: Richard Ishida, *W3C Internationalization Activity Lead*

The W3C Internationalization Activity now comprises three Working Groups. This session brings you up to date with key areas of their work.

Topics covered: recent clarifications by the GEO Working Group on language declaration and character encoding for Web documents; the issues before the newly formed Internationalized Tag Set Working Group; work by the Core Working Group on internationalized Web addresses; and related work on language tags.

**18:30 – 20:30**

### **Conference Dinner**

Location: Hotel New Otani, Tsuru



## Friday

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Room	9:00 - 10:00	17:10 - 18:00
Hall	<b>Keynote:</b> Rob Glaser, RealNetworks	Closing Ceremony

Room	10:30 - 12:00	13:30 - 15:00	15:30 - 17:00
301	PT19 Service selection and Metadata	PT22 Semantic Web Foundations	PT25 Schemas and Semantics
302	PT20 Link-based Ranking	PT23 Link-based Similarity	PT26 Architecture and Implementation of Web sites
303	PT21 Improving the Browsing Experience	PT24 XML Parsing and Stylesheets	PT27 Embedded Web
201	PANEL07 Querying the past, present and future: where we are and where we will be	PANEL08 Web engineering: technical discipline or social process	PANEL09 Web services considered harmful?
ICR	W3C07 The Future of XML	W3C08 Interaction and the Web: The Future Browser	W3C09 Questions & Answers to the W3C Members and Team

**9:00 – 10:00**

### Keynote Speech

Location: Convention Hall

Session Chair: Fred Douglass, *IBM Research*

#### Real and the Future of Digital Media

Rob Glaser, *RealNetworks, Inc.*

**10:00 – 10:30**

### Break

**10:30 – 12:00** Parallel Sessions

**PT19** Service selection and Metadata

Location: Room 301

Session Chair: Philipp Cimiano, *Institute AIFB, University of Karlsruhe*

#### On Optimal Service Selection

P.A. Bonatti and P. Festa, *University of Napoli Federico II*

#### G-ToPSS: Fast Filtering of Graph-based Metadata

Milenko Petrovic, Haifeng Liu and Hans-Arno Jacobsen, *University of Toronto*

#### Automating Metadata Generation: the Simple Indexing Interface

Kris Cardinaels, Michael Meire and Erik Duval, *Departement Computerwetenschappen, Katholieke Universiteit Leuven*

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### PT20 Link-based Ranking

Location: Room 302

Session Chair: Torsten Suel, *Polytechnic University, Brooklyn*

#### PageRank as a Function of the Damping Factor

Paolo Boldi, Massimo Santini and Sebastiano Vigna, *Università degli Studi di Milano*

#### Object-Level Ranking: Bringing Order to Web Objects

Zaiqing Nie\*, Yuanzhi Zhang†, Ji-Rong Wen\* and Wei-Ying Ma\*

\**Microsoft Research Asia, Beijing, China*

†*Peking University, Beijing, China*

#### Unifying a Large Class of PageRank Optimizations

Frank McSherry, *Microsoft Research, SVC*

### PT21 Improving the Browsing Experience

Location: Room 303

Session Chair: Yoelle Maarek, *IBM Research Haifa*

#### Information Search and Re-access Strategies of Experienced Web Users

Anne Aula, Natalie Jhaveri and Mika Käki, *University of Tampere*

#### Browsing Fatigue in Handhelds: Semantic Bookmarking Spells Relief

Saikat Mukherjee and I.V. Ramakrishnan, *Department of Computer Science, SUNY Stony Brook*

#### WebPod: Persistent Web Browsing Sessions with Pocketable Storage Devices

Shaya Potter and Jason Nieh, *Columbia University*

### PANEL07 Querying the past, present and future: where we are and where we will be

Location: Room 201

Moderator: Ling Liu, *Georgia Institute of Technology, USA*

Panelists: Andrei Z Broder, *IBM T.J. Watson Research Center, USA*

Dieter Fensel, *Digital Enterprise Research Institute (DERI), Europe*

Carole Goble, *University of Manchester, United Kingdom*

Christopher Olsen, *MIT, USA*

Calton Pu, *CERCS, Georgia Tech, USA*

This panel will focus on exploring future enhancements of Web technology for active Internet-scale information delivery and dissemination. It will ask the questions of whether the current Web technology is sufficient, what can be leveraged in this endeavor, and how a combination of ideas from a variety of existing disciplines can help in meeting the new challenges of large scale information dissemination. Relevant existing technologies and research areas include: active databases, agent systems, continual queries, event Web, publish/subscribe technology, sensor and stream data management. We expect that some suggestions may be in conflict with current, well-accepted approaches.

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### **W3C07 The Future of XML**

Location: International Conference Room

Session Chair: Liam Quin, *W3C XML Activity Lead*

Speakers: Liam Quin, *W3C XML Activity Lead*

Makoto Murata, *IBM Tokyo Research Lab*

Robin Berjon, *Expway*

What should the W3C XML Activity be working on over the next few years? How might we incorporate efficient transfer of XML (e.g. binary XML) into the XML stack? Where should our major specifications be going? Should we work on new specifications?

This is a community session: come prepared to voice a considered opinion and be heard.

### **12:00 – 13:30**

#### **Lunch**

Location: Exhibition Hall 8

### **13:30 – 15:00 Parallel Sessions**

#### **PT22 Semantic Web Foundations**

Location: Room 301

Session Chair: Steffen Staab, *University of Koblenz-Landau*

##### **Named Graphs, Provenance and Trust**

Jeremy J. Carroll, *HP Labs*

Christian Bizer, *Free University of Berlin*

Pat Hayes, *IHMC*

Patrick Stickler, *Nokia*

##### **OWL DL vs. OWL Flight: Conceptual Modeling and Reasoning for the Semantic Web**

Jos de Bruijn, Axel Pollered, Ruben Lara and Dieter Fensel, *Digital Enterprise Research Institute (DERI)*

##### **Debugging OWL Ontologies**

Bijan Parsia, Evren Sirin and Aditya Kalyanpur, *University of Maryland, College Park*

#### **PT23 Link-based Similarity**

Location: Room 302

Session Chair: Marc Najork, *Microsoft*

##### **Scaling Link-Based Similarity Search**

Daniel Fogaras, *Budapest University of Technology and Economics*

Balazs Racz, *Computer and Automation Research Institute of the Hungarian Academy of Sciences*

##### **LSH Forest: Self-Tuning Indexes for Similarity Search**

Mayank Bawa\*, Tyson Condie† and Prasanna Ganesan\*

\**Stanford University*

†*University of California, Berkeley*

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### **Partitioning of Web Graphs by Community Topology**

Hidehiko Ino, Mineichi Kudo and Atsuyoshi Nakamura, *Hokkaido University*

### **PT24 XML Parsing and Stylesheets**

Location: Room 303

Session Chair: Makoto Murata, *IBM Tokyo Research Lab*

#### **Incremental Maintenance for Materialized XPath/XSLT Views**

Makoto Onizuka\*, Fong Yee Chan†, Ryusuke Michigami‡ and Takashi Honishi\*

\**NTT CyberSpace Laboratories*

†*Simon Fraser University*

‡*Plala Networks Inc.*

#### **Compiling XSLT 2.0 into XQuery 1.0**

Achille Fokoue, Kristoffer Rose, Jerome Simeon and Lionel Villard, *IBM T.J. Watson Research Center*

#### **An Adaptive, Fast, and Safe XML Parser Based on Byte Sequences Memorization**

Toshiro Takase, Hisashi Miyashita, Toyotaro Suzumura and Michiaki Tatsubori, *IBM Tokyo Research Laboratory*

### **PANEL08 Web engineering: technical discipline or social process**

Location: Room 201

Moderator: Bebo White, *Stanford Linear Accelerator Center, USA*

Panelists: David Lowe, *University of Technology, Sydney*

Martin Gaedke, *University of Karlsruhe*

Daniel Schwabe, *PUC Rio de Janeiro*

Yogesh Deshpande, *University of Western Sydney*

This panel aims to explore the nature of the emerging Web engineering discipline. It will attempt to strongly engage with the issue of whether Web Engineering is currently, and (more saliently) should be in the future, viewed primarily as a technical design discipline with its attention firmly on the way in which Web technologies can be leveraged in the design process, or whether it should be viewed primarily as a socio-positioned discipline which focuses on the nature of the way in which projects are managed, needs are understood and users interact.

### **W3C08 Interaction and the Web: The Future Browser**

Location: International Conference Room

Session Chair: Steven Pemberton, *W3C Interaction Domain Team*

Speakers: Steven Pemberton, *W3C Interaction Domain Team*

Bert Bos, *W3C*

TV Raman, *IBM*

Mark Birbeck, *x-port.net*

Dean Jackson, *W3C*

As new W3C technologies begin to come online in browsers, new possibilities open for how browsers can be used and applied, across devices, and for new purposes. This session explores some of these new directions.

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**15:00 – 15:30**

Break

**15:30 – 17:00** Parallel Sessions

**PT25** Schemas and Semantics

Location: Room 301

Session Chair: Wolfgang Nejdl, *L3S and University of Hannover*

**CaTTS: Calendar Types and Constraints for Web Applications**

François Bry, Frank-André Rieß and Stephanie Spranger, *University of Munich*

**Expressiveness of XSDs: from Practice to Theory, There and Back Again**

Geert Jan Bex\*, Wim Martens\*, Frank Neven\* and Thomas Schwentick†

\**Limburgs Universitair Centrum*

†*Philipps Universitaet Marburg*

**WEESA - Web Engineering for Semantic Web Applications**

Gerald Reif\*, Harald Gall† and Mehdi Jazayeri\*

\**Distributed Systems Group, Vienna University of Technology*

†*Department of Informatics, University Zurich*

**PT26** Architecture and Implementation of Web sites

Location: Room 302

Session Chair: Fred Douglass, *IBM Research*

**A Multi-Threaded PIPELINED Web Server Architecture for SMP/SoC Machines**

Gyu Sang Choi, Jin-Ha Kim, Deniz Ersoz and Chita R. Das, *Pennsylvania State University*

**Cataclysm: Policing Extreme Overloads in Internet Applications**

Bhuvan Urganonkar and Prashant Shenoy, *University of Massachusetts*

**Design for Verification for Asynchronously Communicating Web Services**

Aysu Betin-Can\*, Tevfik Bultan\* and Xiang Fu†

\**University of California at Santa Barbara*

†*Georgia Southwestern State University*

**PT27** Embedded Web

Location: Room 303

Session Chair: Tatsuya Hagino, *Keio Univerisy*

**Need for Non-Visual Feedback with Long Response Times in Mobile HCI**

Virpi Roto, *Nokia Research Center*

Antti Oulasvirta, *Helsinki Institute of Information Technology*

**An environment for collaborative contents aquisition and editing by coordinated ubiquitous devices**

Yutaka Kidawara, *NICT*

Tomoyuki Uchiyama, *Kyoto University*

Katsumi Tanaka, *NICT and Kyoto University*

## Friday

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### **PANEL09** Web services considered harmful?

Location: Room 201

Moderator: Rohit Khare, *CommerceNet Labs, USA*

Panelists: Jeff Barr, *Amazon Web Services*

Mark Baker, *Developer's Day Chair*

Adam Bosworth, *Google*

Tim Bray, *Sun Microsystems*

Jeffery McManus, *eBay Web Services*

It has been estimated that all of the Web Services specifications and proposals (“WS-\*) weigh in at several thousand pages by now. At the same time, their predecessor technologies such as XML-RPC have developed alongside other “grassroots” technologies like RSS. This debate has arguably even risen to the architectural level, contrasting “service-oriented architectures” with REST-based architectural styles. Unfortunately, the multiple overlapping specifications, standards bodies, and vendor strategies tend to obscure the very real successes of providing machine-automatable services over the Web today. This panel asks: Are current community processes for developing, debating, and adopting Web Services are helping or hindering the adoption of Web Services technology?

URL: <http://labs.commerce.net/wiki/images/1/19/CN-TR-04-05.pdf>

### **W3C09** Questions & Answers to the W3C Members and Team

Location: International Conference Room

Session Chair: Steve Bratt, *W3C Chief Operating Officer*

Speaker: all W3C Track'05 session chairs and speakers

**17:10 – 18:00**

### **Closing Ceremony**

Location: Convention Hall

## Saturday — Developers' Day Tutorials

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	TITLE	PRESENTERS	LOCATION
TD01	Web Bloopers — Avoiding Common Web Design Mistakes	Jeff Johnson	101
TD02	Current Best Practices in Web Development and Design	(with WOW Web Professional Certification Exam Option)	303

### **TD01** Web Bloopers: Avoiding Common Web Design Mistakes

Jeff Johnson, *UI Wizards, Inc.*

Location: 101

This tutorial is based on the presenter's new book: *Web Bloopers: 60 Common Web Design Mistakes and How to Avoid Them* (Morgan Kaufmann, 2003). The book explains how to avoid common Web design errors, illustrated with examples from actual websites. The tutorial, like the book, organizes bloopers into categories: Content, Task-Support, Navigation, Form, Search, Text & Writing, Link Presentation, and Graphic and Layout. It includes class exercises in which participants review actual websites looking for bloopers and discuss how to improve them. The tutorial is intended for Web designers and developers, mainly those who lack several years of experience designing and evaluating websites and Web applications. Others who might benefit from this tutorial are web Q/A engineers, usability testers, and web development managers. After completing this full-day tutorial, participants will:

- Have seen the most common Web design errors and ways to avoid them;
- Be able to recognize those errors in websites and Web applications;
- Be better designers and customers of websites and online services.

### **TD02** Current Best Practices in Web Development and Design

(with WOW Web Professional Certification Exam Option)

Location: 304

The advancement of Web-based technologies is exciting, yet how do designers and developers working day to day adopt contemporary practices into existing workflow? This session's goal is to focus on the hot topics in Web design and development as they pertain to the practical application of progressive web technologies. An emphasis on semantic markup, CSS, accessibility, as well as a concern for esthetic choices for screen, alternative devices, and even print will be discussed.

Key Objectives: During these sessions you will:

- Hone in on workflow problems in the industry, and learn about new models that can aid in improving your workflow.
- Learn contemporary design & development technologies and how they can serve you.
- Learn about Cascading Style Sheets (CSS) and how they are so critical not just for designers, but for web developers and site managers, too.
- Gain insight into current tools, including web browsers, and how to work with them more effectively.

## Saturday — Developers' Day Tutorials

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- Understand the benefits of Web standards and best practices, and learn how technical and ROI performance improves with their implementation.

Participants will have the option to take one of two WOW certification exams at the end of the session, the Certified Professional Webmaster (CPW), or the Certified Professional Web Designer (CPWD) exam. For further information about WOW's full day event, WOW's certification exams, more about the WOW organization and additional certification resources and objectives visit:

- Japanese version: <http://www.webprofessionals.org/www2005jp>
- English version: <http://www.webprofessionals.org/www2005>



## Saturday — Developers' Day

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**9:00 – 10:00**

### Keynote Speech

Location: Room 201

**One project, four schema languages; medley or melee?**

Makoto Murata, *International University of Japan*

**10:30 – 12:00** Parallel Sessions

**DD01** Semantic Web

Location: Room 201

Session Chair: Jim Hendler, *University of Maryland*

**DD02** Microformats

Location: Room 301A

Session Chairs: Tantek Celik, *Technorati*

Eric Meyer, *Complex Spirial Consulting*

**DD03** Interaction and Visualization

Location: Room 301B

Session Chairs: Joyce Park, *CommerceNet Labs*

Kevin Hughes, *CommerceNet Labs*

Mark Baker, *Coactus, Canada*

**DD04** Semantic Web Services in Practice

Location: Room 302

Session Chairs: Terry Payne, *Southampton University*

Evren Sirin, *University of Maryland*

**13:30 – 15:00** Parallel Sessions

**DD05** Semantic Web

Location: Room 201

**DD06** Microformats

Location: Room 301A

**DD07** Interaction and Visualization

Location: Room 301B

**DD08** Semantic Web Services in Practice

Location: Room 302

**15:30 – 16:15** Parallel Sessions

**DD09** Semantic Web

Location: Room 201

## Saturday — Developers' Day

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**DD10** **Microformats**

Location: Room 301A

**15:30 – 17:00**

**DD11** **Interaction and Visualization**

Location: Room 301B

**16:15 – 17:00**

**DD12** **(Panel) Semantic Web and Microformats**

Location: Room 201

Moderator: Mark Baker, *Coactus, Canada*

# Posters

## Posters

Location: Exhibition Hall 8



## E-Commerce

- 0101 **Designing Learning Services: From Content-based to Activity-based Learning Systems**  
Pythagoras Karampiperis and Demetrios Sampson,  
*Advanced e-Services for the Knowledge Society Research Unit, Informatics and Telematics Institute*
- 0102 **How much is a Keyword worth?**  
Ramesh Sarukkai, *Yahoo! Inc.*

## Multimedia

- 0201 **Accuracy Enhancement of Function oriented Classification of Web Images**  
Koji Nakahira, Toshihiko Yamasaki and Kiyoharu Aizawa, *Department of Frontier Informatics, The University of Tokyo*

- 0202 **Multichannel publication of interactive media documents in a news environment**  
Tom Beckers\*, Nico Oorts†, Filip Hendrickx‡ and Rik Van de Walle\*  
\* *Ghent University-IBBT*  
† *VRT*  
‡ *IMEC*
- 0203 **Multi-Step Media Adaptation : Implementation of a Knowledge-Based Engine**  
Peter Soetens and Matthias De Geyter, *VRT*
- 0204 **Personal TV Viewing by Using Live Chat as Metadata**  
Hisashi Miyamori\*, Satoshi Nakamura\* and Katsumi Tanaka†  
\* *National Institute of Information and Communications Technology (NICT)*  
† *National Institute of Information and Communications Technology (NICT) and Kyoto University*

## Posters

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- 0205 **Video Quality Estimation for Internet Streaming**  
Amy Reibman, Subhabrata Sen and Jacobus van der Merwe, *AT&T Labs-Research*
- 0206 **Webified Video: Media Conversion from TV Program to Web Content and their Integrated Viewing Method**  
Hisashi Miyamori, *National Institute of Information and Communications Technology (NICT)*  
Katsumi Tanaka, *National Institute of Information and Communications Technology (NICT) and Kyoto University*
- Networking**
- 0301 **A Publish and Subscribe Collaboration Architecture for Web-Based Information**  
M. Brian Blake\*, David H. Fado† and Gregory A. Mack†  
\**Department of Computer Science, Georgetown University*  
†*Advanced Systems and Concepts, Science Applications International Corp. (SAIC)*
- 0302 **An Adaptive Middleware Infrastructure for Mobile Computing**  
Ronnie Cheung, *Department of Computing, Hong Kong Polytechnic University*
- 0303 **An Approach for Realizing Privacy-Preserving Web-Based Services**  
Wei Xu\*, R. Sekar\*, I.V. Ramakrishnan\* and V.N. Venkatakrishnan†  
\**Department of Computer Science, Stony Brook University*  
†*Department of Computer Science, University of Illinois at Chicago*
- 0304 **Application Networking on Peer-to-Peer Networks**  
Mu Su and Chi-Hung Chi, *School of Computing, National University of Singapore*
- 0305 **Automatic Generation of Web Portals Using Artificial Ants**  
Hanene Azzag\*, Gilles Venturni\* and Christiane Guinot†  
\**Laboratoire d'Informatique, Polytech Tours*  
†*CE.R.I.E.S*
- 0306 **Data Versioning Techniques for Internet Transaction Management**  
Ramkrishna Chatterjee and Gopalan Arun, *Oracle Corporation*
- 0307 **Design and Implementation of A Feedback Controller for Slowdown Differentiation on Internet Servers**  
Jianbin Wei and Cheng-Zhong Xu, *Department of Electrical and Computer Engineering, Wayne State University*
- 0308 **Exploiting the Web for Point-in-Time File Sharing**  
Roberto J. Bayardo Jr., *IBM Almaden Research Center*  
Sebastian Thomschke, *IBM Deutschland GmbH*
- 0309 **Finding Group Shilling in Recommendation System**  
Xue-Feng Su\*, Hua-Jun Zeng† and Zheng Chen†  
\**Computer Science and Technology, Beijing University of Posts and Telecommunications*  
†*Microsoft Research Asia*
- 0310 **Improved Timing Control for Web Server Systems Using Internal State Information**  
Xue Liu, Rong Zheng, Jin Heo and Lui Sha, *Department of Computer Science, University of Illinois at Urbana-Champaign*
- 0311 **Information Flow using Edge Stress Factor**  
Franco Salvetti, *University of Colorado at Boulder*  
Savitha Srinivasan, *IBM Almaden Research Center*
- 0312 **Predicting Navigation Patterns on the Mobile-Internet Using Time of the Week**  
Martin Halvey, Mark T. Keane and Barry Smyth, *Adaptive Information Cluster, Department of Computer Science, University College Dublin*
- 0313 **WAND: A Meta-data Maintenance System over the Internet**  
Anubhav Bhatia, Saikat Mukherjee, Saugat Mitra and Srinath Srinivasa, *Indian Institute of Technology, Bangalore*
- 0314 **Web Page Marker: a Web Browsing Support System based on Marking and Anchoring**  
Takahiro Koga, Noriharu Tashiro, Tadachika Ozono, Takayuki Ito and Toramatsu Shintani, *Department of Computer Science and Engineering, Nagoya Institute of Technology*
- 0315 **Web Resource Geographic Location Classification and Detection**  
Chuang Wang\*, Xing Xie†, Lee Wang‡, Yansheng Lu\* and Wei-Ying Ma†  
\**Department of Computer Science, Huazhong University of Science and Technology*  
†*Microsoft Research Asia*  
‡*Microsoft Corporation*

## Posters

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### Performance

- 0401 **A Comprehensive Comparative Study on Term Weighting Schemes for Text Categorization with Support Vector Machines**  
Man Lan\*, Chew-Lim Tan†, Hwee-Boon Low\* and Sam-Yuan Sung†  
\* *Institute for Infocomm Research*  
† *Department of Computer Science, National University of Singapore*
- 0402 **A Framework for Determining Necessary Query Set Sizes to Evaluate Web Search Effectiveness**  
Eric C. Jensen\*, Steven M. Beitzel\*, Ophir Frieder\* and Abdur Chowdhury†  
\* *Information Retrieval Laboratory, Illinois Institute of Technology*  
† *Search & Navigation Group, America Online Inc.*
- 0403 **Applying NavOptim to Minimise Navigational Effort**  
David Lowe and Xiaoying Kong, *University of Technology, Sydney*
- 0404 **Boosting SVM Classifiers By Ensemble**  
Yan-Shi Dong, *Shanghai Jiao Tong University*  
Ke-Song Han, *Motorola Labs, China Research Center*
- 0405 **Bootstrapping Ontology Alignment Methods with APFEL**  
Marc Ehrig\*, Steffen Staab† and York Sure\*  
\* *Institute AIFB, University of Karlsruhe*  
† *ISWeb, University of Koblenz-Landau*
- 0406 **Can Link Analysis Tell Us about Web Traffic?**  
Marcin Sydow, *Polish-Japanese Institute of Information Technology*
- 0407 **Clustering for Probabilistic Model Estimation for CF**  
Qing Li Kumoh\*, Byeong Man Kim† and Sung Hyon Myaeng\*  
\* *National Institute of Technology, Information & Communication University, Korea*  
† *Kumoh National Institute of Technology*
- 0408 **Efficient Structural Joins with On-The-Fly Indexing**  
Kun-Lung Wu, Shyh-Kwei Chen and Philip S. Yu, *IBM T. J. Watson Research Center*
- 0409 **Finding The Search Engine That Works For You**  
Kin F. Li\*, Wei Yu\*, Shojiro Nishio† and Yali Wang\*  
\* *Department of Electrical & Computer Engineering, University of Victoria*  
† *Graduate School of Information Science & Technology, Osaka University*
- 0410 **Improving Text Collection Selection with Coverage and Overlap Statistics**  
Thomas Hernandez and Subbarao Kambhampati, *Department of Computer Science and Engineering, Arizona State University*
- 0411 **Predicting Outcomes of Web Navigation**  
Jacek Gwizdka and Ian Spence, *Department of Psychology, University of Toronto*
- 0412 **Site Abstraction for Rare Category Classification in Large-Scale Web Directory**  
Tie-Yan Liu\*, Hao Wan†, Tao Qin†, Zheng Chen\*, Yong Ren† and Wei-Ying Ma\*  
\* *Microsoft Research Asia*  
† *Department of Electronic Engineering, Tsinghua University*
- 0413 **The WT10G dataset and the evolution of the Web**  
Wei-Tsen Milly\*, Markus Hagenbuchner\* and Ah Chung Tsoi†  
\* *University of Wollongong*  
† *Australian Research Council*
- 0414 **TotalRank: Ranking Without Damping**  
Paolo Boldi, *DSI, Università degli Studi di Milano*
- 0415 **WCAG Formalization with W3C Standards**  
Vicente Luque Centeno\*, Carlos Delgado Kloos\*, Martin Gaedke† and Martin Nussbaumer†  
\* *Carlos III University of Madrid*  
† *University of Karlsruhe*

### Search and Data Mining

- 0501 **A Clustering Method for News Articles Retrieval System**  
Hiroyuki Toda and Ryoji Kataoka, *NTT Cyber Solutions Laboratories, NTT Corporation*
- 0502 **A More Precise Model of Web Retrieval**  
Junli Yuan, *Institute for Infocomm Research, School of Computing, National University of Singapore*  
Chi-Hung Chi, *School of Computing, National University of Singapore*  
Qibin Sun, *Institute for Infocomm Research*

## Posters

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- 0503 **Adaptive Page Ranking with Neural Networks**  
Franco Scarselli\*, Sweah Liang Yong<sup>†</sup>, Markus Hagenbuchner<sup>†</sup> and Ah Chung Tsoi<sup>‡</sup>  
\* *University of Siena*  
<sup>†</sup> *University of Wollongong*  
<sup>‡</sup> *Australian Research Council*
- 0504 **Adaptive Query Routing in Peer Web Search**  
Le-Shin Wu\*, Ruj Akavipat\* and Filippo Menczer<sup>†</sup>  
\* *Department of Computer Science, Indiana University*  
<sup>†</sup> *School of Informatics and Department of Computer Science, Indiana University*
- 0505 **An Analysis of Search Engine Switching Behavior using Click Streams**  
Yun-Fang Juan and Chi-Chao Chang, *Yahoo! Inc.*
- 0506 **An Economic Model of Web Search**  
Georgios Kouroupas\*, Elias Koutsoupas<sup>†</sup>, Christos Papadimitriou<sup>‡</sup> and Martha Sideri\*  
\* *Athens University of Economics and Business*  
<sup>†</sup> *University of Athens*  
<sup>‡</sup> *University of California, Berkeley*
- 0507 **An Information Extraction Engine for Web Discussion Forums**  
Hanny Yulius Limanto, Nguyen Ngoc Giang, Vo Tan Trung, Nguyen Quang Huy, Jun Zhang and Qi He, *Nanyang Technological University*
- 0508 **Analysis of Topic Dynamics in Web Search**  
Xuehua Shen\*, Susan Dumais<sup>†</sup> and Eric Horvitz<sup>†</sup>  
\* *Department of Computer Science, University of Illinois*  
<sup>†</sup> *Microsoft Research*
- 0509 **Analyzing Online Discussion for Marketing Intelligence**  
Natalie Glance, Matthew Hurst, Kamal Nigam, Matthew Siegler, Robert Stockton and Takashi Tomokiyo, *Intelliseek Applied Research Center*
- 0510 **Analyzing Web Page Headings Considering Various Presentation**  
Yushin Tatsumi and Toshiyuki Asahi, *NEC Internet Systems Research Laboratories*
- 0511 **Automatically Learning Document Taxonomies for Hierarchical Classification**  
Kunal Punera, Suju Rajan and Joydeep Ghosh, *Department of Electrical and Computer Engineering, University of Texas at Austin*
- 0512 **BackRank: an Alternative for PageRank**  
Mohamed Bouklit, *LIRMM*  
Fabien Mathieu, *LIRMM-INRIA*
- 0513 **Building an Open Source Meta-Search Engine**  
Antonio Gulli, *Dipartimento di Informatica, University of Pisa*  
Alessio Signorini, *University of Iowa, Computer Science*
- 0514 **Comparing Relevance Feedback algorithms for Web Search**  
Vishwa Vinay\*, Ken Wood<sup>†</sup>, Natasa Milic-Frayling<sup>†</sup> and Ingemar Cox\*  
\* *University College London*  
<sup>†</sup> *Microsoft Research Cambridge*
- 0515 **Cyclone: An Encyclopedic Web Search Site**  
Atsushi Fujii\*, Katunobu Itou<sup>†</sup> and Tetsuya Ishikawa\*  
\* *Graduate School of Library, Information and Media Studies, University of Tsukuba*  
<sup>†</sup> *Graduate School of Information Science, Nagoya University*
- 0516 **Delivering new web content reusing remote and heterogeneous sites. A DOM-based approach**  
Luis Álvarez Sabucedo and Luis Anido Rifón, *Universidade de Vigo, Departamento Telemática*
- 0517 **Exploiting the Deep Web with DynaBot: Matching, Probing, and Ranking**  
Daniel Rocco\*, James Caverlee<sup>†</sup>, Ling Liu<sup>†</sup> and Terence Critchlow<sup>‡</sup>  
\* *University of West Georgia*  
<sup>†</sup> *Georgia Institute of Technology*  
<sup>‡</sup> *Lawrence Livermore National Laboratory*
- 0518 **Extracting Context To Improve Accuracy For HTML Content Extraction**  
Suhit Gupta\*, Gail Kaiser\* and Salvatore Stolfo<sup>†</sup>  
\* *Programming Systems Lab, Columbia University*  
<sup>†</sup> *Intrusion Detection Lab, Columbia University*
- 0519 **Focused Crawling By Exploiting Anchor Text Using Decision Tree**  
Jun Li, *Department of General System Studies, The University of Tokyo*  
Kazutaka Furuse, *Institute of Information Sciences & Electronics, University of Tsukuba*  
Kazunori Yamaguchi, *Information Technology Center, The University of Tokyo*
- 0520 **From User-Centric Web Traffic Data to Usage Data**  
Thomas Beauvisage and Houssein Assadi, *France Telecom R&D*

## Posters

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- 0521 **Incremental Page Rank Computation on Evolving Graphs**  
Prasanna Desikan\*, Nishith Pathak<sup>†</sup>, Delhi Jaideep Srivastava\* and Vipin Kumar\*  
\*Department of Computer Science, University of Minnesota  
<sup>†</sup>Department of Computer Science, University of Minnesota & Indian Institute of Technology
- 0522 **Information Retrieval in P2P Networks Using Genetic Algorithm**  
Wan Yeung Wong, Tak Pang Lau and Irwin King, Department of Computer Science & Engineering, The Chinese University of Hong Kong
- 0523 **Learning How to Learn with Web Contents**  
Akihiro Kashihara, *The University of Electro-Communications*  
Shinobu Hasegawa, *Research Center for Distance Learning, Japan Advanced Institute of Science and Technology*
- 0524 **METEOR: Metadata and Instance Extraction from Object Referral Lists on the Web**  
Hasan Davulcu\*, Srinivas Vadrevu\*, Saravanakumar Nagarajan\* and Fatih Gelgi<sup>†</sup>  
\*Department of Computer Science and Engineering, Arizona State University  
<sup>†</sup>Department of Computer Science and Engineering, Arizona State University,
- 0525 **Mining Directed Social Network from Message Board**  
Naohiro Matsumura\*, David E. Goldberg<sup>†</sup> and Xavier Llorà<sup>†</sup>  
\*Osaka University  
<sup>†</sup>University of Illinois at Urbana-Champaign
- 0526 **Mining Web Site's Topic Hierarchy**  
Nan Liu and Christopher C. Yang, *Department of Systems Engineering and Engineering Management, The Chinese University of Hong Kong*
- 0527 **Modeling the Author Bias Between Two On-line Computer Science Citation Databases**  
Vaclav Petricek\*, Ingemar J. Cox\*, Hui Han<sup>†</sup>, Isaac Councill<sup>‡</sup> and C. Lee Giles<sup>‡</sup>  
\*University College London  
<sup>†</sup>Yahoo! Inc.  
<sup>‡</sup>The School of Information Sciences and Technology, The Pennsylvania State University
- 0528 **On the Feasibility of Low-rank Approximation for Personalized PageRank**  
András Benczúr\*, Károly Csalogány\* and Tamás Sarlós<sup>†</sup>  
\*Eötvös University  
<sup>†</sup>Computer and Automation Institute, Hungarian Academy of Sciences
- 0529 **Predictive Ranking: A Novel Page Ranking Approach by Estimating the Web Structure**  
Haixuan Yang\*, Irwin King<sup>†</sup> and Michael R. Lyu<sup>†</sup>  
\*Department of Computer Science and Engineering, The Chinese University of Hong Kong  
<sup>†</sup>Department of Computer Science and Engineering The Chinese University of Hong Kong
- 0530 **Preferential Walk: Towards Efficient and Scalable Search in Unstructured Peer-to-Peer Networks**  
Hai Zhuge, Xue Chen and Xiaoping Sun, *Key Lab of Intelligent Information Processing, Institute of Computing Technology, Chinese Academy of Sciences*
- 0531 **Representing Personal Web Information as a Topic-Oriented Interface**  
Zhigang Hua\*, Hao Liu<sup>†</sup>, Xing Xie<sup>‡</sup>, Hanqing Lu\* and Wei-Ying Ma<sup>†</sup>  
\*Institute of Automation, Chinese Academy of Sciences  
<sup>†</sup>Department of Information Engineering, Chinese University of Hong Kong  
<sup>‡</sup>Microsoft Research Asia
- 0532 **Retrieving Multimedia Web Objects Based on Page Rank Algorithm**  
Christopher C. Yang and K. Y. Chan, *Department of Systems Engineering and Engineering Management, The Chinese University of Hong Kong*
- 0533 **SAT-MOD: Moderate Itemset Fittest for Text Classification**  
Jianlin Feng, Huijun Liu and Jing Zou, *Department of Computer Science, Huazhong University of Science & Technology*
- 0534 **Semantic Search of Schema Repositories**  
Tanveer Syeda-Mahmood\*, Gauri Shah\*, Lingling Yan<sup>†</sup> and Willi Urban<sup>‡</sup>  
\*IBM Almaden Research Center  
<sup>†</sup>IBM SVL  
<sup>‡</sup>IBM Software Group

## Posters

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- 0535 **The Indexable Web is More than 11.5 Billion Pages**  
Antonio Gulli, *Università di Pisa, Dipartimento di Informatica*  
Alessio Signorini, *University of Iowa, Computer Science*
- 0536 **TruRank: Taking PageRank to the Limit**  
Sebastiano Vigna, *Dipartimento di Scienze dell'Informazione, Università degli Studi di Milano*
- 0537 **Using Visual Cues for Extraction of Tabular Data from Arbitrary HTML Documents**  
Bernhard Krüepf, Marcus Herzog and Wolfgang Gatterbauer, *Vienna University of Technology*
- 0538 **Web Data Cleansing for Information Retrieval using Key Resource Page Selection**  
Yiqun Liu, Canhui Wang, Min Zhang and Shaoping Ma, *State Key Lab of Intelligent technology & systems, Tsinghua University*
- 0539 **Web Log Mining with Adaptive Support Thresholds**  
Jian-Chih Ou\*, Chang-Hung Lee† and Ming-Syan Chen\*  
*\*Department of Electrical Engineering, National Taiwan University*  
†*BenQ Corporation 18*
- 0540 **XAR-Miner: Efficient Association Rules Mining for XML Data**  
Sheng Zhang\*, Ji Zhang†, Han Liu† and Wei Wang‡  
*\*College of Physics Sciences and Technology, Nanjing Normal University, Nanjing, China*  
†*Department of Computer Science, University of Toronto*  
‡*College of Educational Science, Nanjing Normal University, Nanjing, China*
- 0603 **An Architecture for Personal Semantic Web Information Retrieval System**  
Haibo Yu\*, Tsunenori Mine† and Makoto Amamiya†  
*\*Graduate School of Information Science and Electrical Engineering, Kyushu University*  
†*Faculty of Information Science and Electrical Engineering, Kyushu University*
- 0604 **Association Search in Semantic Web: Search + Inference**  
Liang Bangyong, Tang Jie and Li Juanzi, *Department of Computer Science, Tsinghua University*
- 0605 **Automated Semantic Web Services Orchestration via Concept Covering**  
Tommaso Di Noia\*, Eugenio Di Sciascio\*, Francesco M. Donini†, Azzurra Ragone\* and Simona Colucci‡  
*\*Politecnico di Bari*  
†*Università della Toscana*  
‡*Politecnico di Bari and Knowledge Management Institute - Open University*
- 0606 **AVATAR: An approach based on Semantic Reasoning to Recommend Personalized TV programs**  
Yolanda Blanco-Fernández, Jose J. Pazos-Arias, Alberto Gil-Solla, Manuel Ramos-Cabrer, Ana Fernández-Vilas, Rebeca P. Díaz-Redondo, Martín López-Nores and Belén Barragáns-Martínez, *Department of Telematic Engineering, University of Vigo*
- 0607 **Constructing Extensible XQuery Mappings**  
Gang Qian and Yisheng Dong, *Department of Computer Science and Engineering, Southeast University*
- 0608 **Hera Presentation Generator**  
Flavius Frasinca, Geert-Jan Houben and Peter Barna, *Eindhoven University of Technology*
- 0609 **Hybrid Semantic Tagging for Information Extraction**  
Ronen Feldman\*, Benjamin Rosenfeld\*, Moshe Fresko\* and Brian D. Davison†  
*\*Computer Science Department, Bar-Ilan University*  
†*Computer Science and Engineering, Lehigh University*
- 0601 **An Agent System for Ontology Sharing on WWW**  
Kotaro Nakayama, Takahiro Hara and Shojiro Nishio, *Graduate School of Information Science and Technology, Osaka University*
- 0602 **An Approach for Ontology-based Elicitation of User Models to Enable Personalization on the Semantic Web**  
Ronald Denaux\*, Lora Aroyo\* and Vania Dimitrova†  
*\*Department of Computer Science, Eindhoven University of Technology*  
†*School of Computing, University of Leeds*
- 0610 **Multiple Strategies Detection in Ontology Mapping**  
Jie Tang, Bang-Yong Liang and Juan-Zi Li, *Department of Computer, Tsinghua University*
- 0611 **Semantic Virtual Environments**  
Karsten A. Otto, *Freie Universität Berlin*



## Posters

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- 0612 **Service Discovery and Measurement based on DAML-QoS Ontology**  
Chen Zhou, Liang-Tien Chia and Bu-Sung Lee, *Center for Multimedia & Network Technology, Nanyang Technological University*
- 0613 **Signing individual fragments of an RDF graph**  
Giovanni Tummarello, Christian Morbidoni, Paolo Puliti and Francesco Piazza, *Università Politecnica delle Marche*
- 0614 **Soundness Proof of Z Semantics of OWL Using Institutions**  
Dorel Lucanu\*, Yuan Fang Li† and Jin Song Dong†  
\*Faculty of Computer Science, "A.I.Cuza" University  
†School of Computing, National University of Singapore
- 0615 **Verify Feature Models using Protege-OWL**  
Hai Wang, *The University of Manchester*  
Yuan Fang Li, *National University of Singapore*  
Jing Sun, *The University of Auckland*  
Hongyu Zhang, *RMIT University*
- 0705 **Car Racing through the Streets of the Web: a High-Speed 3D Game over a Fast Synchronization Service**  
Stefano Cacciaguerra, Stefano Ferretti, Marco Rocchetti and Matteo Roffilli, *Department of Computer Science, University of Bologna*
- 0706 **Interactive Web-Wrapper Construction for Extracting Relational Information from Web documents**  
Tsuyoshi Sugibuchi and Yuzuru Tanaka, *Meme Media Laboratory, Hokkaido University*
- 0707 **Introducing Multimodal Character Agents into Existing Web Applications**  
Kimihiro Ito, *Meme Media Laboratory, Hokkaido University*
- 0708 **MemoSpace: A visualization tool for Web navigation**  
Jacqueline Waniek\*, Holger Langner† and Falk Schmidberger†  
\*Keio University  
†Chemnitz University of Technology
- 0709 **Migrating Web Application Sessions in Mobile Computing**  
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†College of Educational Science, Nanjing Normal University, Nanjing, China  
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\* *IBM Research, Tokyo Research Laboratory*  
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