



# 2008 IEEE Congress on SERVICES (Part I) and IEEE SCC 2008

## ADVANCE PROGRAM

**IEEE Congress on Services (SERVICES 2008)**

<http://conferences.computer.org/services/2008>

**IEEE International Conference on Services Computing (SCC 2008)**

<http://conferences.computer.org/scc/2008>

**2008 Summer School on Services Computing (SERVICES UNIVERSITY)**

Sponsored by **IEEE Technical Committee on Services Computing**

<http://tab.computer.org/tcsc>



**IEEE TRANSACTIONS ON  
SERVICES  
COMPUTING**



**IBM Research**



July 6-7 (SERVICES UNIVERSITY) and July 8-11 (SERVICES and SCC 2008), 2008,  
Hilton Hawaiian Village Beach Resort & Spa  
2005 Kalia Road, Honolulu, Hawaii 96815, USA  
Phone: 1-808-949-4321 Fax: 1-808-951-5458

## **IEEE SCC/SERVICES-1 2008 Program Summary**

- 44 Sessions for SCC 2008 (18 Research Sessions, 18 Application and Industry Sessions, and 8 Work in Progress Sessions)
- 6 IEEE SOA Industry Summit Sessions
- 3 Sessions for The Education Methodology Summit on Services Computing
- 3 Keynotes, 2 Panels, and 6 Tutorials
- Congress Banquet
- Editorial Board Meeting of IEEE Transactions on Services Computing
- IEEE Services Computing Body of Knowledge on Services Computing (<http://servicescomputing.tv>) Sponsored by IEEE Computer Society
- IEEE Services Computing Contest – Part I (Hawaii)
- Services Computing Job Fair ([www.jobsintheservices.com](http://www.jobsintheservices.com)) at SERVICES 2008
- IEEE Symposium on SOA Standards (IEEE Standards Association SOA and Web Services Working Group)
- Emerging Services Technology Track at SERVICES-1 2008
- Ph.D. Symposium on Services Computing
- 7 Workshops at 2008 IEEE Congress on Services (SERVICES 2008) Part I
  1. *2008 International Workshop on Electronic Service Marketing (ESM 2008)*
  2. *2008 International Workshop on Methodologies for Non-functional Properties in Services Computing (MNPSC 2008)*
  3. *3rd International Workshop on Service- and Process-Oriented Software Engineering (SOPOSE 2008)*
  4. *International Workshop on Scientific Workflows (SWF 2008)*
  5. *Workshop on Web Service Composition and Adaptation (WSCA 2008)*
  6. *2008 IEEE International Workshop on Web Services Testing (WS-Testing 2008)*
  7. *2008 IEEE International Workshop on Web X.0 (WebX 2008)*

<b>2008 IEEE Congress on Services (SERVICES 2008)</b> <b>2008 IEEE International Conference on Services Computing (SCC 2008)</b>		
	<b>2008 Summer School on Services Computing (SERVICES UNIVERSITY)</b>	
	<b>July 6, 2008 (Sunday)</b> <b>Room: South Pacific 1</b>	<b>July 7, 2008 (Monday)</b> <b>Room: South Pacific 1</b>
8:00-10:00	Registration, Site Tour, and Social Networking	
10:00-12:00	Summer School on Services Computing	Summer School on Services Computing
12:00-13:00	Lunch (not included)	
13:00-15:00	Summer School on Services Computing	Summer School on Services Computing
15:00-15:30	PM Break	
15:30-17:30	Summer School on Services Computing	Summer School on Services Computing
	1. No planned conference activities for conference participants 2. Editorial Board Meeting for IEEE Transactions on Services Computing (Invitation Only) on <u>July 7, 2008 (Monday)</u>	

<b>2008 IEEE Congress on Services (SERVICES 2008)</b> <b>2008 IEEE International Conference on Services Computing (SCC 2008)</b>							
7:30-10:00	Registration						
<i>Room</i>	<i>S. Pacific Ballroom #1</i>	<i>S. Pacific Ballroom #2</i>	<i>S. Pacific Ballroom #3</i>	<i>S. Pacific Ballroom #4</i>	<i>Sea Pearl Suite 1-2</i>	<i>Sea Pearl Suite 3-4</i>	<i>Sea Pearl Suite 5-6</i>
10:00 - 11:30	SCC/SERVICES Tutorial 1	MNPSC 2008	SOPOSE 2008	SWF 2008	WebX 2008	ESM 2008	
11:30-12:30	Lunch (not included)						
12:30-14:00	SCC/SERVICES Tutorial 1	MNPSC 2008	SOPOSE 2008	SWF 2008	WebX 2008	ESM 2008	
14:00-14:15	PM Break						
14:15-15:45	SCC/SERVICES Tutorial 3	MNPSC 2008	SOPOSE 2008	SWF 2008	Ph.D. Symposium	WSCA 2008	SCC/SERVICES Tutorial 4
15:45-16:30	PM Break with Freshments (Room: Coral Lounge)						
16:30-18:00	SCC/SERVICES Tutorial 3	MNPSC 2008	WS-Testing 2008	Emerging Services Technology	Ph.D. Symposium	WSCA 2008	SCC/SERVICES Tutorial 4
18:30-21:00	1. No planned conference activities for conference participants 2. Editorial Board Meeting for IEEE Transactions on Services Computing (Invitation Only)						

7:30-8:00	Breakfast (Room: Coral Lounge)						
8:00-9:30	SCC/SERVICES 2008 Keynote 1 (Room: Coral Ballroom #2)						
9:30-10:00	AM Break						
10:00-17:00	Job Fair ( <a href="http://www.jobsintheservices.com">http://www.jobsintheservices.com</a> ) Innovation Showcase (Demo and Display) IEEE Body of Knowledge on Services Computing Initiative Internet Access Services						
Room	<i>S. Pacific Ballroom #1</i>	<i>S. Pacific Ballroom #2</i>	<i>S. Pacific Ballroom #3</i>	<i>S. Pacific Ballroom #4</i>	<i>Sea Pearl Suite 1-2</i>	<i>Sea Pearl Suite 3-4</i>	<i>Sea Pearl Suite 5-6</i>
10:00 - 11:30	SCC/SERVICES Tutorial 5	Panel 1	Research Session 1	Research Session 2	Application and Industry Session 1	Application and Industry Session 2	WIP Session 1
11:30-12:30	Lunch (not included)						
12:30-14:00	SCC/SERVICES Tutorial 5	Education Methodology Summit 1	Research Session 3	Research Session 4	Application and Industry Session 3	Application and Industry Session 4	WIP Session 2
14:00-14:15	PM Break						
14:15-15:45	SCC/SERVICES Tutorial 6	Education Methodology Summit 2	Research Session 5	Research Session 6	Application and Industry Session 5	Application and Industry Session 6	WIP Session 3
15:45-16:30	PM Break with Freshments (Room: Coral Lounge)						
16:30-18:00	SCC/SERVICES Tutorial 6	Panel 2	Research Session 7	Research Session 8	Application and Industry Session 7	Application and Industry Session 8	WIP Session 4
19:00-22:00	Congress Banquet (Room: Coral Ballroom #2) and SERVICES UNIVERSITY Update						

7:30-8:00	Breakfast (Room: Coral Lounge)						
8:00-9:30	SCC/SERVICES 2008 Keynote 2 (Room: Coral Ballroom #2)						
9:30-10:00	AM Break						
Room	S. Pacific Ballroom #1	S. Pacific Ballroom #2	S. Pacific Ballroom #3	S. Pacific Ballroom #4	Sea Pearl Suite 1-2	Sea Pearl Suite 3-4	Sea Pearl Suite 5-6
10:00 - 11:30	WIP Session 5	Services Computing Contest	Research Session 9	Research Session 10	Application and Industry Session 9	Application and Industry Session 10	SOA Industry Summit 1
11:30-12:30	Lunch (not included)						
12:30-14:00	Education Methodology Summit 3	Services Computing Contest	Research Session 11	Research Session 12	Application and Industry Session 11	Application and Industry Session 12	SOA Industry Summit 2
14:00-14:15	PM Break						
14:15-15:45	SCC/SERVICES Tutorial 2	Services Computing Contest	Research Session 13	Research Session 14	Application and Industry Session 13	Application and Industry Session 14	SOA Industry Summit 3
15:45-16:30	PM Break with Freshments (Room: Coral Lounge)						
16:30-18:00	SCC/SERVICES Tutorial 2	Services Computing Contest	Research Session 15	Research Session 16	Application and Industry Session 15	Application and Industry Session 16	SOA Industry Summit 4
18:30-23:00	1. No planned conference activities for conference participants 2. SERVICES and SCC Organization Committee Meeting						

7:30-8:00	Breakfast (Room: Coral Lounge)						
8:00-9:30	SCC/SERVICES 2008 Keynote 3 (Room: Coral Ballroom #2)						
9:30-10:00	AM Break (Room)						
Room	<i>S. Pacific Ballroom #1</i>	<i>S. Pacific Ballroom #2</i>	<i>S. Pacific Ballroom #3</i>	<i>S. Pacific Ballroom #4</i>	<i>Sea Pearl Suite 1-2</i>	<i>Sea Pearl Suite 3-4</i>	<i>Sea Pearl Suite 5-6</i>
10:00 - 11:30	WIP Session 7	WIP Session 6	Research Session 17	Research Session 18	Application and Industry Session 17	Application and Industry Session 18	SOA Standards
11:30-12:30	Lunch (not included)						
12:30-14:00	WIP Session 8	Reserved 1	Reserved 2	Reserved 3	SOA Industry Summit 5	SOA Industry Summit 6	SOA Standards
14:00-14:15	PM Break (Room)						
14:15-15:15	1. Status Report of the 2008 IEEE Services Computing Contest 2. Closing Remarks and SCC 2009 Planning (Room: Coral Ballroom #2)						
15:15	Have A Great Trip Back Home!						

# ***SERVICES-1 & SCC 2008 Keynote 1***

## **Development of Adaptive Service-based Software**

Stephen S. Yau

Professor of Computer Science and Engineering  
Director, Information Assurance Center  
Arizona State University

### **Abstract:**

Adopting service-oriented architecture in large-scale distributed applications, such as e-business, healthcare, transportation, scientific computing, and homeland security, requires adaptive service-based software (ASBS), which has the capability of monitoring the changing system status, analyzing and controlling tradeoffs among multiple QoS features, and adapting its service configuration to satisfy multiple QoS requirements simultaneously. Development of ASBS with multiple QoS monitoring and adaptation capabilities in dynamic environments expeditiously and cost-effectively requires major improvements on software technology.

We will first discuss the challenges for the development of ASBS with satisfactory QoS in dynamic environments and related ongoing research, such as autonomic computing and situation awareness. Then, an overview of our research on the development of ASBS will be presented. Major research issues and possible approaches to dealing with them, such as declarative specification of situation awareness and security requirements, automated agent synthesis for situation-aware workflows, and establishing performance models for ASBS to support the development of QoS monitoring and adaptation capabilities, will be discussed.

### **About the Speaker:**



**Stephen S. Yau** is currently a professor of computer science and engineering and the Director of Information Assurance Center at Arizona State University (ASU), Tempe. He served as the Chair of the Department of Computer Science and Engineering at ASU in 1994-2001. Previously, he was on the faculties of Northwestern University, Evanston, Illinois, and University of Florida, Gainesville.

He served as the President of the Computer Society of the Institute of Electrical and Electronics Engineers (IEEE) and on the IEEE Board of Directors and the Board of Directors of Computing Research Association. He also served as the Editor-in-Chief of IEEE COMPUTER magazine, and organized many national and international major conferences, including the World Computer Congress sponsored by International Federation for Information Processing (IFIP) in 1989. He founded and organized the Annual International Computer Software and Applications Conference (COMPSAC) sponsored by the IEEE Computer Society, in 1977.



# **SERVICES-1 & SCC 2008 Keynote 2**

## **Business Cloud: Bridging The Power of SOA and Cloud Computing**

**Moderator:** Liang-Jie Zhang, IBM T.J. Watson Research Center, USA

**Panelists (alphabetical order):**

- Carl K Chang, Iowa State University, USA
- Ephraim Feig, Motorola, USA
- Robert Grossman, University of Illinois at Chicago, USA

**Panel Theme:**

This panel addresses bringing the power of Service-Oriented Architecture (SOA) and Cloud Computing together to deliver business and practical value to emerging software applications, hardware, and business process provisioning services over the Internet. The leading companies in the industry are moving applications and data to the Internet. Typically, there are three types of resources that can be provisioned and consumed over the Internet and shared among users, thereby leveraging economies of scale:

- Computing resource, including computing power, storage, and machine provisioning
- Software applications, delivered as software as a service and mashups of value-added applications
- Business processes that support outsourcing, composition, and provisioning

There are opportunities to explore a converging software and services architecture for enterprise users and consumer users. There are also challenges in developing a unified application development environment for Cloud Computing as well as creating a scalable, reusable, and configurable provisioning platform for Cloud Computing.

The key focus of this panel is to discuss and debate

- What is Cloud Computing, and can we leverage Grid Computing to enable it?
- How do we leverage SOA to build scalable Cloud Computing infrastructures?
- Which applications are best delivered in a Cloud Computing environment?
- How do we merge the power of SOA and Cloud Computing together
- What are appropriate strategies and execution practices to create a Services Computing Curriculum to get more skilled people ready for Business Cloud?

## **Biographies**

### *Moderator*

**Liang-Jie Zhang (LJ)** is a Research Staff Member and Program Manager of Application Architectures and Realization at IBM T.J. Watson Research Center. Dr. Zhang is the founding chair of IBM Research's Services Computing Professional Interest Community and has been leading an IBM Service-Oriented Architecture (SOA) tooling and architecture research projects since 2001. He has been co-leading IBM's SOA Solution Stack (aka SOA Reference Architecture: Solution View) project since 2004. His new book Services Computing has been published by Springer. He has received 2 IBM Outstanding Technical Achievement Awards, 9 IBM Creative Contribution Awards, an Outstanding Achievement Award by the

World Academy of Sciences, and an Innovation Leadership Award from Chinese Institute of Electronics. Dr. Zhang has 36 granted patents and 20 pending patent applications. As the lead inventor, he holds federated Web services discovery and dynamic services composition patents. He is the chair of IEEE Computer Society Technical Committee on Services Computing. He has been appointed as the founding Editor-in-Chief of the IEEE Transactions on Services Computing.

#### *Panelists*

**Carl K. Chang** was 2004 IEEE Computer Society President. Upon completing his presidency for the Computer Society, he was appointed to be the Editor-in-Chief of IEEE Computer (2007-2010). Previously he served as the Editor-in-Chief for *IEEE Software* (1991-94). Currently, Chang is Professor and Chair of the Department of Computer Science at Iowa State University. He received a PhD in computer science from Northwestern University.

**Ephraim Feig** is a Senior Director at Motorola. Prior to his joining Motorola, he was Chief Technology Officer and Chief Marketing Officer of Kintera, Inc. from 2000 until 2006 and a researcher and R&D manager at IBM from 1980 until 2000. He was elected IEEE Fellow for contributions to signal processing, holds 27 US patents, and has published more than 100 technical articles. Dr. Feig has served as an adjunct professor at several universities, including Columbia University, The City College of New York and New York Polytechnic Institute. He is a founding member of the IEEE Computer Society Technical Committee on Services Computing and this year's Program Chair of IEEE SCC. He serves on advisory boards at CUNY, UCSD and USD, and is on the board of directors of the San Diego Symphony Orchestra.

**Robert Grossman** is the Director of the Laboratory for Advanced Computing and the National Center for Data Mining at the University of Illinois at Chicago, where he has been a faculty member since 1988. He is also the Managing Partner of Open Data Group, which provides consulting and outsourced services focused on data. He has published over 140 papers in refereed journals and proceedings on data mining, distributed computing, high performance computing, high performance networking, business intelligence, and related areas, and lectured extensively at conferences and workshops. He is the Chair of the Open Cloud Computing Consortium. He is also the Chair of the Data Mining Group (DMG), an industry consortium responsible for the Predictive Model Markup Language (PMML), an XML language for data mining and predictive modeling.

# ***SERVICES-1 & SCC 2008 Keynote 3***

## **Cloud Computing**

Mahmoud Naghshineh  
Director Service Delivery  
IBM Research  
IEEE Fellow

### **Abstract:**

Cloud computing is viewed as a game-changing paradigm for enterprise and internet environments and has created palatable excitement among industry and academic leaders. It offers great opportunities for innovative web-delivered services beyond the traditional computing and internet models and is at the intersection of major new trends such as large scale mega datacenters, new programming models, social and collaborative networking, and innovative IT service delivery paradigms. In this talk, we will describe key cloud computing trends and innovation opportunities that it promises to create in traditional IT environments and the potential it offers to fuel the explosive growth in social networking, mobile internet, and open collaboration platforms.

### **About the Speaker:**

**Mahmoud Naghshineh** is Director of services delivery research at IBM Thomas J Watson Research Center with worldwide responsibility for technologies, processes and tools for next generation IT systems service automation, deployment and management.

From 2004 to 2005, Mahmoud was a partner at IBM Business Consulting Services, responsible for managing the federal industry alliances account. Prior to that, he was the Director of emerging markets at IBM Systems and Technology Group's CTO office. From 1990 to 2002, he worked at IBM Research in areas of software and services related to Web-based infrastructure, mobile and wireless Internet, embedded software, secure computing platforms, telecommunications services, and quality-of-service provisioning. He joined IBM Systems Group in 1988. He has made several major contributions to IBM products and services in areas of systems, middleware and infrastructure services.

In 2002, Mahmoud was elected as a Fellow of the IEEE and has been active in creating new industry standards in both IETF and IEEE. He has served as the Editor-in-Chief of IEEE Wireless Communications Magazine, program co-chair of MobiCom 2001, and chairperson for many IEEE/ACM, NSF and government research conferences and workshops. He was an Adjunct Professor at the department of electrical engineering, Columbia University from 1997 to 2001. He has published over 100 technical papers and holds a number of IBM outstanding recognition awards and patents. He received his doctoral degree from Columbia University, New York.

## *Panel Sessions*

### **Panel 1**

#### **Web Services for Group Decision and Negotiation Support**

##### **Chair:**

Tung Bui, University of Hawaii, USA

##### **Panelists:**

Freimut Bodendorf, University of Erlangen-Nuremberg, Germany

Rong Chang, IBM Watson Research Center, USA

Michael Goul, Arizona State University, USA

##### **Theme:**

The purpose of this panel is to present a number recent achievements in the use of Web services to support the many bargaining and negotiation activities in business. Discussion topics include, but are not limited to, the latest Web services technologies in distributed and mobile computing, design methodologies to embed Web services to assist the business users in different phases of group decision and negotiation processes -- before, during and after, and directions for future research.

##### **Biographies**

**Tung Bui** is Matson Navigation Co. Professor at the Shidler College of Business, Department of Information Technology, University of Hawaii. He has done extensive research in the area of computer-supported group decision and negotiation, and how this technology can be applied to large organizations and to particular distributed applications such electronic commerce/supply chain management, humanitarian assistance/disaster relief (HA/DR). Before joining the University of Hawaii, Tung was on the faculty at the Naval Postgraduate School, the Universities of Fribourg and Lausanne, and the Hong Kong University of Science and Technology.

**Freimut Bodendorf**, born 1953, graduated 1977 from the University of Erlangen-Nuremberg (School of Engineering) with a degree in Computer Science. 1981 he obtained his doctor degree (Ph.D.) in Information Systems. Subsequently he was head of an IS department at the University of Freiburg/Germany (School of Medicine), full professor at the Postgraduate School of Engineering in Nuremberg/Germany, and full professor at the Department of Computer Science and Information Systems at the University of Fribourg/Switzerland. Since 1990 he is head of the Department of Information Systems II at the University of Erlangen-Nuremberg (School of Management). His research areas include information systems in the service industry, services computing, business virtualization, business process management, e-health networking, business intelligence, and knowledge management.

**Rong Chang** is Manager of Service Management Environments and Chair of Services Computing PIC (Professional Interest Community) at the IBM T.J. Watson Research Center. He received his Ph.D. degree in computer science & engineering from the University of Michigan at Ann Arbor in 1990. Before joining IBM in 1993, he was with Bell Communications Research (Bellcore) creating advanced personal

ubiquitous application services for broadband networks. He received his ITIL (IT Infrastructure Library) Foundation Certificate in IT Services Management in 2005, and completed a Micro MBA Program in 2006. He has received one IEEE Best Paper Award and many IBM awards, including two corporate-level Outstanding Technical Achievement Awards. His current research interests include services computing, SOA & distributed computing, IT service lifecycle management, business-driven service management (BSM), business process management (BPM), and service level management (SLM).

**Michael Goul's** research interests are in the area of services-based data warehousing and business intelligence. He was a pioneer in bridging the concepts, methods and technologies of the artificial intelligence, knowledge management and decision support disciplines. Michael's recent publications have dealt with theory advancement and design sciences associated with agile architectures capable of enabling rapid configuration of collaborative inter- and intra-organizational decision support environments. This emphasis is represented in recent work including strategies for "Master Data Management," the promise of ontology and semantics within what is being referred to as the "Service-Oriented Enterprise," and autonomics as applied to inter-organizational workflows. He collaborates with faculty colleagues from business, computer science, industrial engineering and other disciplines in the emerging "services science" research area. His field work has involved firms including Teradata, American Express and Intel. Dr. Goul has authored or co-authored over fifty journal and refereed proceedings papers, he has supervised sixteen doctoral dissertations and over sixty master degree theses, and he served as a journal editor, special issue co-editor and IEEE Transactions on Services Computing Associate Editor.

## Panel 2

### Systems, Tools, and Environments in Services Computing

#### Chairs:

Vladimir Getov, University of Westminster, UK

#### Panelists:

Wu Chou, Avaya Labs, USA

Jeffrey Kreulen, IBM Almaden Research Center, USA

Calton Pu, Georgia Tech, USA

Andreas Wombacher, University of Twente, the Netherlands

#### Theme:

Services computing started from the client-server programming paradigm, but have seen a continuous broadening of its definition and scope embracing other modern paradigms such as peer-to-peer and event processing. In this panel, we will cover some trends of services computing from the systems, tools, and environments perspective including service composition, system integration, interoperability, scalability, virtualization, and support for dynamic properties. The discussion will also address novel application development methodologies and some emerging areas of services computing in SaaS (Software-as-a-Service), CaaS (Communication-as-a-Service), and mobile services computing with corresponding tools and environments.

#### Biographies

**Vladimir Getov** graduated from the Technical University of Sofia (Bulgaria) with distinction in 1975 and then earned his Ph.D. in Computer Science from the Bulgarian Academy of Sciences in 1980. As a Senior Research Fellow he spent several years leading both R&D and academic research projects in Bulgaria. During that time Dr Getov was Project Manager of the first Bulgarian IBM PC/XT compatible computer (1984). In 1989 he moved to England where he joined the Concurrent Computations Group at the University of Southampton. Since 1994 Dr Getov has been an academic staff member at the University of Westminster in London where he was awarded the titles Reader in 1998 and Professor in 2001. In 2003 Vladimir Getov was appointed Research Director of the Harrow School of Computer Science. In 2006 he was awarded Doctor of Science degree from the Bulgarian Academy of Sciences for research work and results in the area of "Methods and Systems for High Performance Computing with Java".

Professor Vladimir Getov has been leading the Distributed and Intelligent Systems Group at the University of Westminster in London since 1996. He was a founding member of the Java Grande Forum in 1998 and has led the Java Grande Message Passing Group which produced the Message Passing For Java (MPJ) specification. Vladimir Getov was also co-chair of the Service Management Frameworks Group of the Open Grid Forum. In 2004, Professor Getov was elected Governor of the International Council for Computer Communication. He is a member of the CoreGrid Executive Committee and Leader of the European Institute on "Grid Systems, Tools, and Environments" of the EU CoreGrid Network of Excellence (Sept. 2004 - Aug. 2008). Professor Getov is also a Steering Committee Member of the John Vincent Atanasoff Initiative, working actively towards worldwide recognition of the inventor of electronic digital computing.



**Wu Chou** is an IEEE Fellow. He received his M.S. degree in mathematics in 1986, M.S. degree in electrical engineering in 1987, M.S. degree in statistics in 1988, and Ph.D. degree in electrical engineering in 1990, all from Stanford University, California, respectively. He joined AT&T Bell Labs in 1990. Currently, he is Director, Avaya Labs Fellow at Avaya Labs Research, Avaya Inc. He and his group explore advanced technologies and applications in Web services, communication, software-as-a-service (SaaS), and services computing. He is a member of IEEE Computer Society, Signal Processing Society, and Communication Society. He served at various technical committees, industry standard bodies, and editorial boards. He contributed to many Industry standards on web services, speech and language processing, multimodal interaction, computer supported telecommunication applications, and unified communication services. He has been granted over 20 US and international patents, authored or co-authored more than 100 journal and conference paper publications, including three book chapters, and one edited book. He received Bell Laboratories President's Gold Award in 1997 and Avaya Leadership Award in 2005.

**Jeffrey Kreulen** is Senior Manager of Services Oriented Technologies and Senior Technical Staff Member at the IBM Almaden Research Center, USA. He holds a B.S. degree in applied mathematics (computer science) from Carnegie-Mellon University, a M.S. degree in electrical engineering and a Ph.D. in computer engineering both from The Pennsylvania State University.

**Calton Pu** was born in Taiwan and grew up in Brazil. He received his PhD from University of Washington in 1986 and served on the faculty of Columbia University and Oregon Graduate Institute. Currently, he is holding the position of Professor and John P. Imlay, Jr. Chair in Software at the College of Computing, Georgia Institute of Technology. He is leading the Infosphere project, building software tools to support information flow-driven applications such as digital libraries and electronic commerce. Infosphere builds on his previous and ongoing research interests. First, he has been working on next-generation operating system kernels to achieve high performance, adaptiveness, security, and modularity, using program specialization, software feedback, and domain-specific languages. This area has included projects such as Synthetix, Immunix, Microlanguages, and Microfeedback, applied to distributed multimedia and system survivability. Second, he has been working on new data and transaction management by extending database technology. This area has included projects such as Epsilon Serializability, Reflective Transaction Framework, and Continual Queries over the Internet. His collaborations include applications of these techniques in scientific research on macromolecular structure data, weather data, and environmental data, as well as in industrial settings. He has published more than 60 journal papers and book chapters, 150 conference and refereed workshop papers, and served on more than 90 program committees, including the co-PC chairs of SRDS'95, ICDE'99, CoopIS'02, SRDS'03, DOA'07, and co-general chair of ICDE'97, CIKM'01, ICDE'06, DEPSA'07, CEAS'07.

**Andreas Wombacher** is an Assistant Professor at University Twente and co-coordinator of the strategic research objective Applied Science of Services for Information Society Technologies (ASSIST). He did his master and Ph.D. degree at the Technical University of Darmstadt. He gathered professional experience at IBM (Germany), the Integrated Publication and Information Systems Institute (IPSI) of GMD (Germany), the University of Twente (Netherlands), and the Swiss Federal Institute of Technology in Lausanne (EPFL). His research interests are in the area of service oriented architectures, distributed data management, and data processing with a focus on sensor networks. He has published around 60 papers and has been involved in several organization committees.

# ***Tutorial Session 1***

## **From Mathematical Model to Systematic SOA Solution Design Tool**

Nianjun Zhou

IBM T.J. Watson Research Center

Liang-Jie Zhang

IBM T.J. Watson Research Center

### **Abstract:**

Service-Oriented Architecture (SOA) is an architectural style for solution architects to create and manage new value added solutions by leveraging various solution artifacts such as business processes, services, packaged applications, and manageable attributes throughout their lifecycle. In this tutorial, we present our initial findings of mathematical modeling of a selected SOA solution architecture. It includes the steps required from a mathematical model to a real implementation of SOA solution tool using XML annotation, XML transformation, UML models and artifact generation with context-aware enabling utilities. We will start from the introduction of SOA concept, solution architecture, and practices in the field. Then we will present a mathematical abstraction of description of an SOA solution model using graph theory and define concepts to capture the relationships, constraints and notations of an SOA solution's building blocks. In addition, XML is introduced and leveraged to convert this mathematical abstraction into materialized description of an SOA solution model which is independent from the product-specific tooling environment. As an example, we will introduce an SOA modeling tool using UML and context-aware software plug-in on top of IBM's Rational Software Architect (RSA) to illustrate the seamless connection between the mathematical model and a reusable software system.

### **About the speakers**

**Nianjun Zhou** has been working in IBM since 1997. Now, he is the research staff member of IBM Watson research lab in the area of services computing. Before joining research, he led the efforts of grid computing including server grid and client grid in IBM CIO. Before joining IBM, he has been a research scientist of New York State Department of Environmental Conservation. Dr. Zhou received his Ph.D. from Rensselaer Polytechnic Institute (RPI) in Electrical Engineering focus on Ad Hoc/Sensor network routing overhead for variable topology network. His interesting is using computer methodologies and technologies to innovate new ideas, develop new infrastructure and applications which enhance the computing resources utilities, efficiency of knowledge and information management.

**Liang-Jie Zhang** is a Research Staff Member (RSM) in Services Technologies Department at IBM T.J. Watson Research Center. He is the worldwide lead of an IBM's SOA solution design and modeling tool. He has been co-leading the IBM-wide SOA Solution Stack project since 2004. Dr. Zhang is one of the leading research pioneers of Service-Oriented Architecture (SOA) and Web Services. Dr. Zhang was the lead inventor and architect of Business Explorer for Web Services (BE4WS), WSIL Explorer, and Web Services Outsourcing Manager (WSOM), all released by IBM alphaWorks. In 2001, he led a worldwide team to create the first comprehensive Web services-based Managed E-Hub to enable services provisioning and business on-boarding for supporting business process on demand. He is the founding Editor in Chief of IEEE Transactions on Services Computing.



## ***Tutorial Session 2***

### **Identity Management for Services**

Elisa Bertino  
Purdue University, USA

Kenji Takahashi  
NTT, Japan

#### **Abstract:**

This tutorial will explore critical issues concerning identity management for the emerging service oriented society. Identity management must be incorporated as an integral part of service infrastructures to make identity available to services across organizations in a secure and privacy protected manner. Identity data is crucial for successfully providing personalized experiences for legitimate users of services. It is important that the users have strong control over their identity data to foster a socially responsible service industry. The goal of this tutorial is to give participants a detailed understanding of the prospects for, and issues arising from, identity management in the emerging service oriented industry. In this tutorial, we first introduce basic notions concerning identity, identity lifecycle and federated digital identity management. We will then give an overview of identity management for services and illustrate best practices and lessons learned in real settings using case studies. We will discuss fundamental methods of identity management (e.g., authentication and authorization techniques), examine enabling technology (e.g., technical standards) and initiatives (Liberty Alliance, Shibboleth, CardSpace), explore the key challenges and research trends (e.g., security and performance).

#### **About the speakers**

**Elisa Bertino** is Professor at Purdue University and Research Director of CERIAS. Her current research interests include digital identity management, computer security, privacy, service oriented architectures, healthcare applications. She has given invited talks and tutorials at several conferences, including the IEEE ICWS 2006 where she presented a tutorial on “Security in SOA and Web Services”. She is a Fellow Member of IEEE and ACM.

**Kenji Takahashi** is a Senior Research Engineer, Supervisor at NTT Information Sharing Platform Laboratories in Tokyo, Japan. He is working on identity management technologies for next generation networks. His research interests are in the interdisciplinary areas of security, identity, and usability. He is also very active in technical standardization, such as Liberty Alliance. Dr. Takahashi has given many talks and tutorials at international conferences, including the following ones related to the proposed topic: - “Application Service Providers: System Development Using Application Services over the Net” at IEEE/ACM ICSE 2000. - “Identity Management” at ACM CCS 2004.

# ***Tutorial Session 3***

## **Services and Processes: Models, Analysis, and Systems**

Wil van der Aalst

Eindhoven University of Technology, The Netherlands

### **Abstract:**

Services and processes are closely intertwined and some refer to languages like BPEL as "programming in the large" thus illustrating the role of processes in service computing. The tutorial focuses on the process-aspects of services. BPEL is the de-facto standard for process support in a SOA context. However, processes can be interpreted in a broader way and many things can be learned from experiences in the BPM and workflow area. This tutorial will first provide an overview of the different approaches and languages. Contemporary systems and languages will be linked to foundational concepts and techniques. After this overview the tutorial will focus on the analysis of services. On the one hand it will be shown that process models can be analyzed in various ways (from performance analysis to verification). On the other hand, one can analyze the actual behavior of services through monitoring and process mining. The tutorial will report on many practical experiences with process analysis. It will be demonstrated that spectacular can be achieved using technology that is available today. For example, it is possible to verify large collections of models and detect errors. Moreover, by using event logs or tapping of messages processes can be constructed automatically and used for performance analysis, social network analysis, etc. Moreover, the same data and tools can be used to check conformance, e.g., is a service behaving as it should? At TU/e there is a lot of experience in the area of BPM, WFM, SOA, and process analysis. TU/e has probably the largest research group on BPM in the world with more than 50 researchers working on topics mentioned above.

### **About the speaker**

**Wil van der Aalst** is a full Professor of Information Systems at the Technische Universiteit Eindhoven (TU/e) having a position in both the Department of Mathematics and Computer Science and the Department of Technology Management. Currently he is also an Adjunct Professor at Queensland University of Technology (QUT) working within the BPM group there. His research interests include workflow management, process mining, Petri nets, business process management, process modeling, and process analysis. Wil van der Aalst has published more than one hundred journal papers, fifteen books (as author or editor), and more than two hundred conference/workshop publications. Many of his papers are highly cited (his H-number is 49 according to Google Scholar) and his ideas have influenced researchers, software developers, and standardization committees working on process support. He has been a Co-Chair of many conferences including the Business Process Management conference, the International Conference on Cooperative Information Systems, the International conference on the Application and Theory of Petri Nets, and the IEEE International Conference on Services Computing. He is also Editor/Member of the editorial board of several journals, including the Business Process Management Journal, the International Journal of Business Process Integration and Management, the International Journal on Enterprise Modelling and Information Systems Architectures, Computers in Industry, IEEE Transactions on Services Computing, Lecture Notes in Business Information Processing, and Transactions on Petri Nets and Other Models of Concurrency. For more information about his work visit: [www.workflowpatterns.com](http://www.workflowpatterns.com), [www.workflowcourse.com](http://www.workflowcourse.com), [www.processmining.org](http://www.processmining.org), [www.yawl-system.com](http://www.yawl-system.com), [www.wvdaalst.com](http://www.wvdaalst.com).

## ***Tutorial Session 4***

### **Software as a Service (SaaS): Security Strategy, Risk Management, Static Analysis and Assessment Tool**

Patrick C. K. Hung

University of Ontario Institute of Technology, Canada

Wendy Hui

Zayed University, U.A.E

#### **Abstract:**

Software as a Service (SaaS) is an emerging software design, implementation and delivery model. The main property of SaaS is that the software requesters do not own the software itself but rather use it through an Application Programming Interface (API) accessible over the Web. The software providers own the software and SaaS is generally priced on a per-user basis, sometimes with a minimum number of users. As security has become an essential component for all software, several security solutions for XML data have been proposed. In addition to security issues, survivability requires SaaS in a service overlay network to be able to fulfill their missions in a timely manner, even in the presence of attacks, threats, or failures due to unreliable communication channels. Because of the severe consequences of failure, software requesters are focusing on SaaS survivability as a key risk management strategy for businesses.

Technically this tutorial will review the topics of XML and a portfolio of related standards in response to the growing need for a platform independent language for supporting SaaS design, implementation and delivery. This tutorial aims to present and discuss various security issues of SaaS. This tutorial will cover the fundamental concepts of security strategy and risk management from the managerial perspectives of SaaS. This tutorial will discuss security risks and related security issues in SaaS. Strategy and policy topics on how to find the right balance between security and usability will be addressed as well as the management of maintaining a secure SaaS infrastructure. This tutorial will also address the common practices and related tools/procedures for addressing those security risks such as static analysis and assessment tool. A research prototype of security assessment tool by MilesScan will also be presented and demonstrated in the tutorial.

#### **About the speakers**

**Patrick Hung** is an Associate Professor and IT Director at the Faculty of Business and Information Technology in UOIT and an Adjunct Assistant Professor at the Department of Electrical and Computer Engineering in University of Waterloo. He is an executive committee member of the IEEE Computer Society's Technical Steering Committee for Services Computing, a steering member of EDOC "Enterprise Computing," and an associate editor/editorial board member/guest editor in several international journals such as the IEEE Transactions on Services Computing, International Journal of Web Services Research (JWSR) and International journal of Business Process and Integration Management (IJBPIIM).

**Wendy Hui** holds a Ph.D. in Information Systems from the Hong Kong University of Science and Technology (HKUST). She is currently an Assistant Professor at Zayed University, Abu Dhabi, U.A.E. Her research interests include Economics of Information Systems, Information Security, and Technology-Assisted Learning. Her work has been accepted at Journal of Management Information Systems (JMIS), Decision Support Systems (DSS), IEEE Transactions on Systems, Man and Cybernetics, Part A (IEEE SMCA), and Communication of the AIS (CAIS).

Industry Research Partner: **Steven Siu**, Director, MilesScan Technologies, Hong Kong

## ***Tutorial Session 5***

### **Business Entities: Modeling Process and Information**

Frederick Wu  
IBM T.J. Watson  
Research Center, US

Santhosh Kumaran  
IBM T.J. Watson  
Research Center, US

Rong Liu  
IBM T.J. Watson  
Research Center, US

#### **Abstract:**

In this tutorial, we present a business process and information modeling approach based on our research results and engagement experiences over the past five years. A business process model describes actions taken by business (human or system) actors to achieve a strategic or operational goal. Traditionally, most of the work in this area, like workflow modeling, is activity-centric and focuses on prescribing activities and their sequences, for example, by stating "first we do A, then B, then C, and while doing C we also do D." This approach has a number of drawbacks, particularly when the goal is to consolidate business processes across organizations, generate IT solutions that are in close alignment with business goals, and achieve desirable features like scalability, flexibility and modularity as business processes become complex and large. In response to these challenges, we developed a new modeling paradigm that models process activities in the context of information entities. Although a business process may involve a large number of information entities, very often we observe that only a small number of them (for example, the claim in an insurance claim process) are key drivers of the flow of activities in the process. The business process itself is the path of these "business entities" through their lifecycles, from their initial states to their final states. Therefore, a complex process can be viewed as the intersecting life cycles of such entities. In this tutorial, we will first introduce the concept of business entities and a method for discovering business entities from existing activity-centric process models. Second, we will describe the modeling of business entity lifecycles as formal state machines and representing business processes as interacting state machines. A formal technique for verifying such process models will be also introduced. Third, we will demonstrate that SOA-based IT solutions can be automatically generated from such business entity models. Moreover, as this new paradigm has been successfully tested through customer engagements, in this tutorial, we will select a couple of case studies to show how it was applied to solve real customer problems. Finally, we will compare this new approach with traditional process modeling approaches and show the advantages of this approach in achieving process scalability, flexibility and modularity.

#### **About the speakers**

**Frederick Wu** leads a team of researchers in the area of model-driven enterprise solutions at IBM Thomas J. Watson Research Center. He has worked in the area of electronic commerce and business integration for the past nine years. He holds S.B., S.M., and Ph.D. degrees from the Massachusetts Institute of Technology.

**Santhosh Kumaran** leads a team of researchers in the area of model-driven business integration at IBM Thomas J. Watson Research Center. His research interest is in using formal models to explicitly define the structure and behavior of an enterprise and employing these models to integrate, monitor, analyze, and improve its performance.

**Rong Liu** is a researcher at IBM Thomas J. Watson Research Center. Her research interest includes entity centric business modeling, process modeling and verification, workflow systems, Petri net technologies and supply chain management.

# ***Tutorial Session 6***

## **Enterprise Service Architectures**

Aditya K. Ghose  
University of Wollongong, Australia

George Koliadis  
University of Wollongong, Australia

### **Abstract:**

An executive service architecture helps provide a high-level blueprint of the complexity underlying an enterprise, which can be used by senior management, as well as technical, IT and operational personnel in key decision and change processes. With the growing popularity of the SOA paradigm, and the increasing emphasis on the application of business process management principles, it is becoming increasingly important for organizations to understand their service architectures by answering questions such as what services the enterprise supports, which enterprise actors/units over these services, which services support cross-enterprise value chains, which processes rely on these services, which processes implement these services, which of these are critical to realizing enterprise goals, which services are redundant etc. This tutorial presents the current state-of-the-art in enterprise service architectures and explores a set of novel approaches to the problem. The tutorial will begin by exploring a competence theory for enterprise service architectures, by discussing the key questions that such enterprise service architectures must help answer. An initial competence theory will be presented based on the existing literature. Attendees will be encouraged to identify and discuss gaps, if any, in the competency theory presented. A wide repertoire of frameworks that can serve as the basis for enterprise service architectures will then be reviewed. These include Porter's Value Chain model (subsequently implemented in VCOR and extended to the Value Network model), Kaplan and Norton's Strategy Maps, the Business Motivation Model (BMM), the ARIS House of Business Engineering (HOBE) architecture, the Business Process Architecture Framework (BPAF) and Role-Activity Diagrams. More research-oriented frameworks such as i\*, e3 Value, the Semantic Object Model (SOM) and the Toronto Virtual Enterprise Ontology (TOVE) will also be examined in detail. Each of these (and others) will be evaluated against the competence theory discussed above. Gaps in functionality will be highlighted, and will form the basis for motivating a new set of frameworks for enterprise service architectures that support a variety of techniques for relating service and process portfolios to enterprise models.

### **About the speakers**

**Aditya Ghose** is a Professor in the School of Computer Science and Software Engineering at the University of Wollongong, and Director of that university's Decision Systems Lab. His research has been published in the top venues in service-oriented computing (SCC and ICSOC), software modelling (ER), software evolution (IWSSD, IWPSE) and AI (AAAI, AAMAS and ECAI). He has an invited speaker at the Schloss Dagstuhl Seminar Series in Germany and the Ban International Research Station in Canada. He has also been a keynote speaker at several conferences, and program/general chair of several others. He is a senior technical advisor to several companies both in Australia and Canada.

**George Koliadis** holds a B.Sc. Honours from the University of Wollongong, and is currently in his PhD candidature at this institution. He has previously worked on large-scale software engineering projects for the Australian Taxation Office, and as a researcher for a collaborative research centre in Sydney, Australia. His research and applied interests include Business Process Management, Conceptual Modeling, and Requirements Engineering.

# Proceedings of 2008 IEEE International Conference on Services Computing (SCC 2008)

## Regular Research Papers

---

### Research Session 1 – Access Control

**Session Chair:** Jian Yang (Macquarie University, Australia)

Verification of Access Control Requirements in Web Services Choreography

*Federica Paci, Mourad Ouzzani, and Massimo Mecella*

Pattern-based Policy Configuration for SOA Applications

*Fumiko Satoh, Nirmal K. Mukhi, Yuichi Nakamura, and Shinichi Hirose*

Monitoring Dependencies for SLAs: The MoDe4SLA Approach

*Lianne Bodenstaff, Andreas Wombacher, Manfred Reichert, and Michael C. Jaeger*

### Research Session 2 – Access Control

**Session Chair:** Weisong Shi (Wayne State University, USA)

Towards Effective Project Management across Multiple Projects with Distributed Performing Centers

*Rohit M. Lotlikar, Ramana Polavarapu, Sadhika Sharma, and Biplav Srivastava*

Optimizing Change Request Scheduling in IT Service Management

*Leila Zia, Yixin Diao, Daniela Rosu, Chris Ward, and Kamal Bhattacharya*

Predictive Admission Control Algorithm for Advanced Reservation in Equipment Grid

*Jie Yin, Yuexuan Wang, Meizhi Hu, and Cheng Wu*

### Research Session 3 – Access Control

**Session Chair:** Thomas Y. Kwok (IBM T.J. Watson Research Center, USA)

End-to-End Versioning Support for Web Services

*Philipp Leitner, Anton Michlmayr, Florian Rosenberg, and Schahram Dustdar*

Representing and Accessing Design Knowledge for Service Integration

*Karthikeyan Umapathy and Sandeep Purao*

Incomplete Preference-driven Web Service Selection

*Hongbing Wang, Junjie Xu, and Peicheng Li*

### Research Session 4 - Business

**Session Chair:** Jeane Chen (Kintera, USA)

Zazen: A Mediating SOA Between Ajax Applications and Enterprise Data

*Avraham Leff and James Rayfield*

To Establish Enterprise Service Model from Enterprise Business Model

*P. Jamshidi, M. Sharifi, and S. Mansour*

SCOOP: Automated Social Recommendation in Enterprise Process Management

*Huiming Qu, Jimeng Sun, and Hani Jamjoom*



### Research Session 5 – Case Study

**Session Chair:** M. Brian Blake (Georgetown University, USA)

Auction Based Models for Ticket Allocation Problem in IT Service Delivery Industry

*Prasad M Deshpande, Dinesh Garg, and N Rama Suri*

Experimental Robustness Evaluation of JMS Middleware

*Marco Vieira, Henrique Madeira, and Nuno Laranjeiro*

Locating Components Realizing Services in Existing Systems

*Renuka Sindhgatta and Karthikeyan Ponnalagu*

### Research Session 6 – Case Study

**Session Chair:** Mikio Aoyama (Nanzan University, Japan)

On The Specification of Payment Requirements For Collaborative Services

*Bart Orriens and Jian Yang*

A Graph Theory Based Impact and Completion Analysis Framework and Applications for Modeling SOA Solution Components

*Nianjun Zhou and Liang-Jie Zhang*

Rapid Deployment of SOA Solutions via Automated Image Replication and Reconfiguration

*Manish Sethi, Kalapriya Kannan, Narendran Sachindran, and Manish Gupta*

### Research Session 7 - Security

**Session Chair:** Wenbing Zhao (Cleveland State University, USA)

Security Specification at Process Level

*Stephanie Chollet and Philippe Lalanda*

Adaptive Secure Access to Remote Services

*Hanping Lufei, Weisong Shi, and Vipin Chaudhary*

A Secure Information Flow Architecture for Web Services

*Lenin Singaravelu, Jinpeng Wei, and Calton Pu*

### Research Session 8 – Semantic Web

**Session Chair:** Patrick C. K. Hung (University of Ontario Institute of Technology, Canada)

Morpheus: Semantics-based Incremental Change Propagation in SOA-based Solutions

*Ramya Ravichandar, Nanjangud C. Narendran, Karthikeyan Ponnalagu, and Dipayan Gangopadhyay*

Web Services Matching By Ontology Instance Categorization

*Qianhui Althea Liang and Herman Lam*

An Automatic Semantic Segment Detection Service for HTML Documents

*Stephen J. H. Yang, Jia Zhang, and Stella T.C. Tsai*

### Research Session 9 - Service Discovery

**Session Chair:** Sambit Sahu (IBM T.J. Watson Research Center, USA)

Chord4S: A P2P-based Decentralised Service Discovery Approach

*Qiang He, Jun Yan, Yun Yang, Ryszard Kowalczyk, and Hai Jin*

Predicting Service Mashup Candidates Using Enhanced Syntactical Message Management

*M. Brian Blake and Michael F. Nowlan*

Proactive Runtime Service Discovery

*Andrea Zisman, James Dooley, and George Spanoudakis*

## Research Session 10 - SOA

**Session Chair:** Sujoy Basu (HP Labs, USA)

Instance Isolation Analysis for Service-Oriented Architectures

*Gero Decker and Mathias Weske*

Variation-Oriented Engineering (VOE): Enhancing Reusability of SOA-based Solutions

*N.C. Narendra, K. Ponnalagu, B. Srivastava and G.S. Banavar*

Promoting Reuse via Extraction of Domain Concepts and Service Abstractions  
from Design Diagrams

*Kalapriya Kannan and Biplav Srivastava*

## Research Session 11 - Workflow

**Session Chair:** Wil van der Aalst (Eindhoven University of Technology, The Netherlands)

Study of Service Processing Agent for Context-Aware Service Coordination

*Yoji Yamato, Hiroyuki Ohnishi, and Hiroshi Sunaga*

PASS: An Approach to Personalized Automated Service Composition

*Yang Li, JinPeng Huai, Hailong Sun, Ting Deng, and Huipeng Guo*

Run Time Protocol Binding: Flexible Service Integration By Means Of Flexible Service Interactions

*J. Fabra, P. A lvarez, J.A. Banares, and J. Ezpeleta*

## Research Session 12 - Workflow

**Session Chair:** Andreas Wombacher (University of Twente, The Netherlands)

A QSQL-based Efficient Planning Algorithm for Fully-automated Service Composition in Dynamic Service Environments

*Kaijun Ren, Xiao Liu, Jinjun Chen, Nong Xiao, Junqiang Song, and Weimin Zhang*

A User-Steering Exploratory Service Composition Approach

*Shuying Yan, Yanbo Han, Jing Wang, Chen Liu, and Guiling Wang*

Leveraging Service Composition Relationship to Improve CPU Demand Estimation in SOA Environments

*Chun Zhang, Rong N. Chang, Chang-Shing Perng, Edward So, Chunqiang Tang, and Tao Tao*

## Research Session 13 - Workflow

**Session Chair:** Wil van der Aalst (Eindhoven University of Technology, The Netherlands)

Dynamic Support for BPEL Process Instance Adaptation

*Ru Fang, Zhi Le Zou, Corina Stratan, Liana Fong, David Marston, Linh Lam, and David Frank*

Service-Oriented Architecture for VIEW: a Visual Scientific Workflow Management System

*Cui Lin, Shiyong Lu, Zhaoqiang Lai, Artem Chebotko, Xubo Fei, Jing Hua, and Farshad Fotouhi*

A Reflective Framework to Improve the Adaptability of BPEL-based Web Service Composition

*Yanlong Zhai, Hongyi Su, and Shouyi Zhan*

## Research Session 14 - Workflow

**Session Chair:** Fuyuki Ishikawa (National Institute of Informatics, Japan)

Formalising Message Exchange Patterns using BPEL light

*Tammo van Lessen, Jörg Nitzsche, and Frank Leymann*

Composing Web Services through Automatic Reformulation of Service Specifications

*Jyotishman Pathak, Samik Basu, and Vasant Honavar*

A Middleware Architecture for Enhancing Web Services Infrastructure for Distributed Coordination of Workflows

*Janaka Balasooriya, Sushil Prasad, and Shamkant Navathe*



### Research Session 15 - Workflow

**Session Chair:** Nanjangud C. Narendra (IBM India Research Lab, India)

A Risk Reduction Framework for Dynamic Workflows

*Prabhdeep Singh, Fatih Gelgi, Hasan Davulcu, Stephen S. Yau, and Supratik Mukhopadhyay*

A Folksonomy-Based Model of Web Services for Discovery and Automatic Composition

*Eric Bouillet, Mark Feblowitz, Hanhua Feng, Zhen Liu, Anand Ranganathan, and Anton Riabov*

An incremental graph-based approach to Automatic Service Composition

*Mazen Malek Shiaa, Jan Ove Fladmark, and Benoit Thiell*

### Research Session 16 - Fault Tolerant / Workflow

**Session Chair:** Javier Fabra (University of Zaragoza, Spain)

Byzantine Fault Tolerant Coordination for Web Services Business Activities

*Wenbing Zhao and Honglei Zhang*

Towards a SLA-based Approach to Handle Service Disruptions

*Lionel Touseau, Didier Donsez, and Walter Rudametkin*

Making BPEL Flexible: Adapting in the Context of Coordination Constraints Using WS-BPEL

*Yunzhou Wu and Prashant Doshi*

### Research Session 17 - Business

**Session Chair:** Althea Liang (Singapore Management University, Singapore)

Optimal Resource Action Planning Analytics for Services Business Using Hiring, Contracting & Cross-Training of Various Skills

*Dharmashankar Subramanian, and Lianjun An*

A 3-level e-Business Registry Meta Model

*Christian Huemer, Philipp Liegl, Rainer Schuster, and Marco Zapletal*

### Research Session 18 - Indexing

**Session Chair:** Wenbing Zhao (Cleveland State University, USA)

Scaling Location-based Services with Location Index

*Bhuvan Bamba, Sangeetha Seshadri, and Ling Liu*

Service Functionality Indexing and Matching for Service-Based Systems

*Stephen Yau and Junwei Liu*

---

## Application and Industry Track

### Application and Industry Session 1 - Access Control

**Session Chair:** Wu Chou (Avaya Labs Research, Avaya, USA)

A Structured Service-Centric Approach for the Integration of Command and Control Components

*Dwight R. Wilcox and Marion G. Ceruti*

A Customer-Centric Privacy Protection Framework for Mobile Service-Oriented Architectures

*Winnie Cheng, Jun Li, Keith Moore, and Alan H. Karp*

Rule-based XML Mediation for Data Validation and Privacy Anonymization

*Masayoshi Teraguchi, Issei Yoshida, and Naohiko Uramoto*

## Application and Industry Session 2 - Access Control

**Session Chair:** Samik Basu (Iowa State University, USA)

A Policy Distribution Service for Proactive Fraud Management over Financial Data Streams

*Michael Edge, Pedro Sampaio, Oliver Philpot, and Mohammed Choudhary*

A Two Stage Heuristic Algorithm for Solving the Server Consolidation Problem with Item-Item and Bin-Item Incompatibility Constraints

*Rohit Gupta, Sumit Kumar Bose, Srikanth Sundarrajan, Manogna Chebiyam, and Anirban Chakrabarti*

Policy-Based Automation to Improve Solution Engineering in IT Services

*Ronnie Sarkar, Murthy Devarakonda, and Axel Tanner*

## Application and Industry Session 3 - Business

**Session Chair:** Christian Huemer (University of Vienna, Austria)

A Fault Tolerance Approach for Enterprise Applications

*Vina Ermagan, Ingolf Krueger, and Massimiliano Menarini*

External Business Environment Analysis with RSS/Web

*Shigeaki Matsumoto, Takatoshi Kitano, and Shigeru Hosono*

Business Transformation Workbench: A Practitioner's Tool for Business Transformation

*Juhnyoung Lee, Rama Akkiraju, Chun Hua Tian, Shun Jiang, Sivaprashanth Danturthy, Ponn Sundhararajan, Carl Nordman, Rakesh Mohan, Hitansh Singala, and Wei Ding*

## Application and Industry Session 4 - Business

**Session Chair:** Paul Hofmann (SAP Research, USA)

Built-to-Order Service Engineering for Enterprise IT Discovery

*Nikolai Joukov, Murthy V Devarakonda, Kostas Magoutis, and Norbert Vogl*

A Framework for Service Interoperability using Enterprise Architecture Models

*Johan Ullberg, Robert Lagerström, and Pontus Johnson*

A Context Model for B2B Collaborations

*Puay Siew Tan, A.E.S. Goh, and S.S.G. Lee*

## Application and Industry Session 5 – Case Study

**Session Chair:** Althea Liang (Singapore Management University, Singapore)

Three Factors to Sustainable Service System Excellence: A Case Study of Service Systems

*Ying Chen, Ana Lelescu, and Jim Spohrer*

Constructing Service Oriented Dynamic Virtual Enterprises in Chinese Apparel Industry

*Gang Li and Ying Liang*

Study of Execution Centric Payment Issues in E-contracts

*K. Vidyasankar, P. Radha Krishna, and Kamalakara Karlapalem*

## Application and Industry Session 6 – Case Study

**Session Chair:** Jeane Chen (Kintera, USA)

Modelling Service Systems for Collaborative Innovation in the Enterprise Software Industry - The St. Gallen Media Reference Model Applied

*Till Janner, Christoph Schroth, and Beat Schmid*

Differentiating Commoditized Services in a Services Marketplace

*Harshavardhan Jegadeesan and Sundar Balasubramaniam*

A Graphical Approach to Providing Infrastructure Recommendations for IT

*Ashwin Lall, Anca Sailer, and Mark Brodie*

## Application and Industry Session 7 – Case Study

**Session Chair:** Wu Chou (Avaya Labs Research, Avaya, USA)

Mining Top Issues from Contact Center Logs for Self Help Portals

*Dinesh Garg, Nanda Kambhatla, Maja Vukovic, and Gopal Pingali*

A Software as a Service with Multi-tenancy Support for an Electronic Contract Application

*Thomas Kwok, Thao Nguyen, and Linh Lam*

wsrbench: An On-Line Tool for Robustness Benchmarking

*Nuno Laranjeiro, Salvador Canelas, and Marco Vieira*

## Application and Industry Session 8 – Case Study

**Session Chair:** Mikio Aoyama (Nanzan University, Japan)

A Framework for Model-Based Continuous Improvement of Global IT Service Delivery Operations

*Abhijit Bose, Aliza Heching, and Sambit Sahu*

WIPdroid – A Two-way Web Services and Real-time Communication Enabled Mobile Computing Platform for Distributed Services Computing

*Wu Chou and Li Li*

Virtual Learning Services over 3D Internet: Patterns and Case Studies

*Hong Cai, Bo Sun, Patty Farh, and Meng Ye*

## Application and Industry Session 9 - SOA

**Session Chair:** Jian Yang (Macquarie University, Australia)

Surrogate: A Simulation Apparatus for Continuous Integration Testing in Service Oriented Architecture

*He Hui Liu, Zhong Jie Li, Jun Zhu, and He Yuan Huang*

Towards Agile Service-oriented Business Systems: A Directive-oriented Pattern Analysis Approach

*Soo Ling Lim, Fuyuki Ishikawa, Eric Platon, and Karl Cox*

Development Tool for Service-oriented Applications in Smart Homes

*Jianqi Yu, Philippe Lalanda, and Stéphanie Chollet*

## Application and Industry Session 10 - Web Services

**Session Chair:** Andreas Wombacher (University of Twente, The Netherlands)

A Scenario-View Based Approach to Analyze External Behavior of Web Services for Supporting Mediated Service Interactions

*Zhangbing Zhou, Sami Bhiri, Lei Shu, Laurentiu Vasiliu, Manfred Hauswirth, and Kaizhu Huang*

Data Model Design of Strategic Analysis Services for Specific Customer Oriented Industries

*Xinxin Bai, Minghua Zhu, Longjun Cai, Wenjun Yin, Jin Dong, and Hairong Lv*

Simplifying Service Deployment with Virtual Appliances

*Changhua Sun, Le He, Qingbo Wang, and Ruth Willenborg*

## Application and Industry Session 11 - Web Services

**Session Chair:** Paul Hofmann (SAP Research, USA)

Implementing Multi-Vendor Home Network System with Vendor-Neutral Services and Dynamic Service Binding

*Masahide Nakamura, Yusuke Fukuoka, Hiroshi Igaki, and Ken-ichi Matsumoto*

A Conflict Neighbouring Negotiation Algorithm for Resource Services in Dynamic Collaborations

*Surya Nepal and John Zic*

Declarative Web Service Entities with Virtual Endpoints

*Martin Grund, Jens Krueger, and Dr. Alexander Zeier*

### **Application and Industry Session 12 - Web Services**

**Session Chair:** Junichi Suzuki (University of Massachusetts Boston, USA)

National Population Information System Based on Web Service

*Hengjian Tong and Zhenfeng Shao*

Modeling Service Quality for Dynamic QoS Publishing

*Qixing Du, Chi-Hung Chi, Shuo Chen, and Jianming Deng*

Partitioning the WS Execution Environment for Hosting Mobile Web Services

*Muhammad Asif, Shikharesh Majumdar, and Raluca Dragnea*

### **Application and Industry Session 13 - Web Services**

**Session Chair:** Paul Hofmann (SAP Research, USA)

Using an Interface Proxy to Host Versioned Web Services

*David Frank, Linh Lam, Liana Fong, Ru Fang, and Manoj Khangaonkar*

Ensuring Service Level Agreements for Service Workflows

*Dyachuk Dmytro and Ralph Deters*

On Improving Change Management Process for Enterprise IT Services

*Xiang Luo, Koushik Kar, Sambit Sahu, Prashant Pradhan, and Anees Shaikh*

### **Application and Industry Session 14 - Workflow**

**Session Chair:** Yixin Diao (IBM T.J. Watson Research Center, USA)

Managing Security and Privacy Integration across Enterprise Business Process and Infrastructure

*John A. Anderson and Vijay Rachamadugu*

Generation of BPEL Customization Processes for SaaS Applications from Variability Descriptors

*Ralph Mietzner and Frank Leymann*

Deriving Explicit Data Links in WS-BPEL Processes

*Oliver Kopp, Rania Khalaf, and Frank Leymann*

### **Application and Industry Session 15 - Workflow**

**Session Chair:** Fuyuki Ishikawa (National Institute of Informatics, Japan)

Component-Based Composition Of Wide-Area Workflows

*Karthick Sankarachary*

Solving the Service Composition Puzzle

*Yuan-Chi Chang, Pietro Mazzoleni, George A. Mihaila, and David Cohn*

Optimum Decentralized Choreography for Web Services Composition

*Saayan Mitra, Ratnesh Kumar, and Samik Basu*

### **Application and Industry Session 16 - SOA**

**Session Chair:** Abhijit Bose (IBM T.J. Watson Research Center, USA)

Service-Oriented Mobile Applications for Ad-Hoc networks

*Yuri Natchetoi, Huaigu Wu, and Yi Zheng*

A Service-Oriented Approach to Storage Backup

*Hao Cheng, Yao H. Ho, Kien A. Hua, Danzhou Liu, Fei Xie, and Ynn-Pyng Tsaaur*

Toward Web Service Dependency Discovery for SOA Management

*Sujoy Basu, Fabio Casati, and Florian Daniel*

### **Application and Industry Session 17 – Case Study**

**Session Chair:** Wu Chou (Avaya Labs Research, Avaya, USA)

A Method for Service Center Architecture Based on Industry Standards

*Avivit Bercovici, Amit Fisher, Fabiana Fournier, Guy Rackham, Natalia Razinkov, and Inna Skarbovsky*

Text to Intelligence: Building and Deploying a Text Mining Solution in the Services Industry for Customer Satisfaction Analysis

*Shantanu Godbole and Shourya Roy*

Tool Support for Safety Analysis of Service Composition and Deployment Models

*Howard Foster*

### **Application and Industry Session 18 – Case Study**

**Session Chair:** Paul Hofmann (SAP Research, USA)

iFAO: Spatial Decision Support Services for Facility Network Transformation

*Wenjun Yin, Xinxin Bai, Minghua Zhu, Ming Xie, and Jin Dong*

A Method and Case Study of Designing Presentation Module in An SOA-based Solution Using Configurable Architectural Building Blocks (ABBs)

*Liang-Jie Zhang, Jia Zhang, and Abdul Allam*

---

## **Work-in-Progress**

---

### **Work-in-Progress Session 1 - Workflow / SOA**

**Session Chair:** Paul Hofmann (SAP Research, USA)

SDMA: A Service-Based Architecture of Data Mining Application

*Liutong Xu, Yi Wang, Guanhui Geng, Xiangang Zhao, and Nan Du*

An Interdisciplinary Methodology for Building Service-oriented Systems on the Web

*Steffen Lamparter and York Sure*

SOAMS: A Novel SOA-based System and Network Management Model and Scheme

*ZhiHui Lu, Yong Li, Jie Wu, ShiYong Zhang, and YiPing Zhong*

Extended BPEL System for e-Engineering Framework by Considering the Characteristics of Mechanical Engineering Service

*Jai-Kyung Lee, Seung Hak Kuk, Hyeon Soo Kim, and Seong-Whan Park*

WSLA+: Web Service Level Agreement Language for Collaborations

*Surya Nepal, John Zic, and Shiping Chen*

A Methodology for Model-Driven Web Application Composition

*Dimitrios A. Kateros, Georgia M. Kapitsaki, Nikolaos D. Tselikas, and Iakovos S. Venieris*

### **Work-in-Progress Session 2 - Workflow / SOA**

**Session Chair:** Vijaykumar Rachamadugu (MITRE, USA)

A Formal Model for Channel Passing in Web Service Composition

*Cai Chao, Yang Hongli, Zhao Xiangpeng, and Qiu Zongyan*

Towards a General Framework for Web Service Composition

*Srividya Kona, Ajay Bansal, M. Brian Blake, and Gopal Gupta*

Composable Data Processing in Environmental Science - A Process View

*Andreas Wombacher*

Enhancing Semantic Web Services Composition with User Interaction

*Peter Bartalos and Mária Bielíková*

A Fault Propagation Approach for Highly Distributed Service Compositions

*Meiko Jensen*

SpiG4WSC: A Calculus for Secure Services Composition

*Xu Dong Hong, Qi Yong, and Hou Di*

### Work-in-Progress Session 3 - Web Services

**Session Chair:** Jun Shen (University of Wollongong, Australia)

A Formal Model of Service Delivery

*Lakshmish Ramaswamy and Guruduth Banavar*

Robust Web Service Discovery in Large Networks

*Stephan Pöhlsen and Christian Werner*

Formal Verification of Web Service Interaction Contracts

*German Shegalov and Gerhard Weikum*

A Fuzzy-set based Semantic Similarity Matching Algorithm for Web Service

*Li Bai and Min Liu*

A Model-Driven Approach to Service Orchestration

*Philip Mayer, Andreas Schroeder, and Nora Koch*

A Framework for QoS Driven Selection of Services

*Caroline Herssens, Stéphane Faulkner, François Fouss, and Ivan Jureta*

### Work-in-Progress Session 4 - Web Services

**Session Chair:** Guruduth S. Banavar (IBM India Research Lab, India)

Query Evaluation and Performance Optimization in Distributed Community Data Sharing System Based on Web Services

*Wenlong Huang, Taoying Liu, and Yi Zhao*

On Service Orchestration in Mobile Computing Environments

*Ustun Yildiz, Remi Badonnel, and Claude Godart*

Towards a User-perceived Service Availability Metric

*Lingshuang Shao, Lu Zhang, Junfeng Zhao, Bing Xie, and Hong Mei*

Towards a Service Management System in Virtualized Infrastructures

*Roman Belter*

Exploring the Impact of Queue Management on Quality of Service for SMBs

*Kinnis Gosha, Jakita O. Thomas, and Juan E. Gilbert*

Exploiting XML Schema for Interpreting XML Documents as RDF

*Pham Thi Thu Thuy, Young-Koo Lee, Sungyoung Lee, and Byeong-Soo Jeong*

### Work-in-Progress Session 5 - Performance

**Session Chair:** Vijaykumar Rachamadugu (MITRE, USA)

Identify Authorization Control Requirement in Business Collaboration

*Daiqin He and Jian Yang*

A General Service-Oriented Grid Computing Framework for Global Optimization Problem Solving

*M. Wahib, Asim Munawar, Masaharu Munetomo, and Akama Kiyoshi*

A Negotiation Service for Trading Intangible Goods on Real-time Markets

*Freimut Bodendorf and Florian Lang*

GSMA based Automated Negotiation Model for Grid Scheduling

*P. Balakrishnan, S. Thamarai Selvi, and G. Rajesh Britto*

Virtual Execution Environments for ensuring SLA-compliant Job Migration in Grids

*Dominic Battre, Matthias Hovestadt, Odej Kao, Axel Keller, and Kerstin Vo*

Mining Process Variants: Goals and Issues

*Chen Li, Manfred Reichert, and Andreas Wombacher*

### Work-in-Progress Session 6 – Semantic Web / Access Control

**Session Chair:** Salima Benbernou (University Claude Bernard Lyon 1, France)

A Practical Geographic Ontology for Spatial Web Services

*Shuai Yuan, Jun Shen, and Jun Yan*

A Situations & Goals Semantic Model for Designing and Implementing Semantic Web Services-based Processes



*Alessio Gugliotta, Stefan Dietze, and John Domingue*  
Using Semantics for Resource Allocation in Computing Service Providers  
*Jorge Ejarque, Marc de Palol, Inigo Goiri, Ferran Julia, Jordi Guitart, Jordi Torres, and Rosa M. Badia*  
Grounding and Execution of OWL-S Based SemanticWeb Services  
*John T.E. Timm, and Gerald C. Gannod*  
Verification of Privacy Timed Properties in Web Service Protocols  
*K. Mokhtari, S. Benbernou, M. Said, E. Coquery, M. S. Hacid, and F. Leymann*  
A New Optimal Policy for Spare Part Service System under Nonstationary Stochastic Demand  
*Jie Yang, Hongwei Ding, Wei Wang, and Jin Dong*

### **Work-in-Progress Session 7 - Business**

**Session Chair:** Abhijit Bose (IBM T.J. Watson Research Center, USA)

The Impossibility of Boosting Resilience of Fully-connected Services for Solving Set-consensus Tasks  
*Juhua Pu, Zhang Xiong, and Xingwu Liu*  
Enterprise Mashups: Design Principles towards the Long Tail of User Needs  
*Volker Hoyer, Katarina Stanoesvka-Slabeva, Till Janner, and Christoph Schroth*  
A Model for Digital Business Ecosystem and Topological Analysis  
*Juan Wang and Philippe De Wilde*  
From Feature Models to Business Processes  
*Joaquin Peña, Ildefonso Montero, and Antonio Ruiz-Cortes*  
SLA Negotiation System Design Based on Business Rules  
*Halina Kaminski and Mark Perry*  
Hierarchical Business Process Clustering  
*Jae-Yoon Jung, Joonsoo Bae, and Ling Liu*

### **Work-in-Progress Session 8 - Case Study**

**Session Chair:** Patrick C. K. Hung (University of Ontario Institute of Technology, Canada)

PoEM - Potsdam Encoding for Models  
*Hagen Overdick and Martin Czuchra*  
Enhanced Maintenance Services with Automatic Structuring of IT Problem Ticket Data  
*Xing Wei, Anca Sailer, and Ruchi Mahindru*  
Mobile Clinical Systems on an Interoperable Medical Framework  
*Eunjeong Park, Hyo Suk Nam, and Heonshik Shin*  
Tourism, Peer Production, and Location-Based Service Design  
*Eric Kansa and Erik Wilde*  
SOAR: SOcially Aware Routing for Request Matching in Enterprise Environments  
*Asheq Khan and Hani Jamjoom*

# Proceedings of 2008 IEEE Congress on Services Part I (SERVICES-1 2008)

## Emerging Services Technology

---

**Session Chair:** Liang-Jie Zhang (IBM T.J. Watson Research Center, USA)

Towards Provisioning the Cloud: On the Usage of Multi-Granularity Flows and Services to Realize a Unified Provisioning Infrastructure for SaaS Applications

*Ralph Mietzner and Frank Leymann*

Grouping Distributed Stream Query Services by Operator Similarity and Network Locality

*Sangeetha Seshadri, Vibhore Kumar, Brian Cooper, Gong Zhang, Ling Liu, Karsten Schwan, and Bhuvan Bamba*

Using Laplacian Spectra to Analyze Project Based Services

*Yi Yang, Zhi-Cong Fang, Yan Yang, and Hong Cai*

## SOA Industry Summit

---

### SOA Industry Summit Session 1

**Session Chair:** Tony Shan (Bank of America, USA)

Compliance Measurement Framework (CMF)

*Virendra K. Varshney, Nanjangud C. Narendra, Anuradha Bhamidipaty, and Shailabh Nagar*

Business Value Assessment of Packaged Applications

*Chunhua Tian, Shun Jiang, Rongzeng Cao, Wei Ding, and Juhnnyoung Lee*

Architectural Solutions for Mobile RFID Services for the Internet of Things

*Martin Peter Michael and Mohsen Darianian*

### SOA Industry Summit Session 2

**Session Chair:** Tony Shan (Bank of America, USA)

Multimedia Chat for Helpdesks: a Practical SOA Architecture

*Zon-Yin Shae, Tony Bergstrom, Claudio Pinhanez, and Mark Podlaseck*

Data Service Modeling in the AquaLogic Data Services Platform

*Michael Carey, Panagiotis Reveliotis, Sachin Thatte, and Till Westmann*

Next Generation Business Process Management: A Paradigm Shift

*Tanuj Arora and Amol Nirpase*

### SOA Industry Summit Session 3

**Session Chair:** Tony Shan (Bank of America, USA)

Towards an XPDL compliant process ontology

*Armin Haller, Walid Gaaloul, and Mateusz Marmolowski*

Formal Verification of a Transactional Interaction Contract

*German Shegalov and Gerhard Weikum*

Correspondence Analysis for Exploring the Fulfillment of Coach Systems for Small and Medium Enterprises in Taiwan

*Hua-Kai Chiou, Je-Roe Chen, and Yen-Wen Wang*



### SOA Industry Summit Session 4

**Session Chair:** Tony Shan (Bank of America, USA)

A Study Case on Domain-Driven Development, using MDA, SOA and Web Services

*Fabio Marzullo, Jano de Souza, and José Blaschek*

Anti-patterns: Integrating Distributed and Heterogeneous Data Sources in SOAs

*Hakan Hacigumus*

Enterprise Mashup Composite Service in SOA – User Profile Use Case Realization

*Fran Yang*

### SOA Industry Summit Session 5

**Session Chair:** Tony Shan (Bank of America, USA)

Service Oriented Infrastructure Framework

*Yan Zhao*

Dynamic Service Substitution in Service-Oriented Architectures

*Manel Fredj, Nikolaos Georgantas, Valerie Issarny, and Apostolos Zarras*

Bringing Creation of Context-Aware Mobile Services to the Masses

*Jan Keiser and Tham Kriengchaiyapruk*

### SOA Industry Summit Session 6

**Session Chair:** Surya Nepal (CSIRO, Australia)

Experience sharing on SOA based Heterogeneous Systems Integration

*Geetha Presena Kumari, Balaji Kandan, and Asish Kumar Mishra*

Enabling SOA Governance for Production Deployed Services

*Sujatha Kuppuraju and Aravind Kumar*

---

## Services Computing Contest

---

**Session Chair:** Yuhong Yan (Concordia University, Canada)

A Domain-specific Query Language for Service Mash-up

*Weilong Ding, Jing Cheng, Kaiyuan Qi, Yan Li, Zhuofeng Zhao, and Jun Fang*

A Rich Internet Application Based on BPEL Services Composition for Port Logistics

*Peng Zhu, Dongyuan Zhan, Chuanhong Zhu, Dongmin Li, Tingxin Song, and Biqing Huang*

An Intelligent Ontology and Bayesian Network based Semantic Mashup for Tourism

*Wei Wang, Guosun Zeng, Dongqi Zhang, Yu Huang, Yufeng Qiu, and Xiaojun Wang*

Automated data augmentation services using text mining, data cleansing and web crawling techniques

*Matthias Jacob, Alexander Kuschner, Max Plauth, and Christoph Thiele*

iNIU- Services Portal for NIU Students

*Peng Raghu Kumar Reddy Ariga, Karthik Akula, Shreya Reddy Gujjala, Momtazul Karim,*

*Shishira Ramesh, and Jia Zhang*

Open Service Process Platform 2.0

*Dirk Habich, Sebastian Richly, Andreas Ruempel, Wolfgang Buecke, and Steffen Preissler*

Mash Up Home Library Management System

*Suresh Jeyaverasingam, and Yuhong Yan*

Service Composition for GIS

*Sai Ma, Minruo Li, and Weichang Du*

Distributed Simulation and Web Map Mash-Up for Forest Fire Spread

*Yosri Harzallah, Vincent Michel, Qi Liu, and Gabriel Wainer*

A Rental Advising System based on Service Oriented Architecture

*Jie Liang, Sabiha Sathulla, Yanyin Zhang, Ding Chen, Jianguo Lu, and Shaohua Wang*

An Intelligent Traveling Service Based on SOA

*S. Navabpour, L. Soltan Ghoraie, A. A. Malayeri, J. Chen, and J. Lu*

---

## SOA Standards

---

**Session Chair:** Liang-Jie Zhang (IBM T.J. Watson Research Center, USA)

Identifying Opportunities for Web Services Security Performance Optimizations

*Robert van Engelen and Wei Zhang*

Using Mapping Relations to Semi Automatically Compose Web Services

*Marwan Sabbouh, Jeff Higginson, Caleb Wan, and Scott Bennett*

Execution Model for Heterogeneous Web Services

*Tomas Vitvar, Maciej Zaremba, and Adrian Mocan*

Standardizing Web Services: Overcoming 'Design by Committee'

*Sandeep Purao, John Bagby, and Karthikeyan Umapathy*

Early Aspects for Non-functional Properties in Service Oriented Business Processes

*Hiroshi Wada, Junichi Suzuki, and Katsuya Oba*

Towards an Enterprise Business Process Architecture Standard

*George Koliadis, Aditya Ghose and Srinivas Padmanabhuni*

An Investigation on Interdisciplinary Structure of Service Science – An extended abstract

*William Song and Deren Chen*

---

## Ph.D. Symposium

---

**Session Chair:** Christian Huemer (University of Vienna, Austria)

A Model for Securing E-Banking Authentication Process

*Antonio San Martino and Xavier Perramon*

Policy-based Web Service Selection in Context Sensitive Environment

*Tao Zhou, Xiaolin Zheng, William Wei Song, Xiaofeng Du, and Deren Chen*

Towards an Efficient Quality Based Web Service Discovery Framework

*Mossab Al Hunaity*

A Formal Analysis of Behavioral Equivalence for Web Services

*Li Kuang*

A Service Oriented Approach to Traffic Dependent Navigation Systems

*Wei Petra Brosch*

Probabilistic Approach to Service Commitment in Service-Oriented Systems

*Hadi Bannazadeh and Alberto Leon-Garcia*

---

## Education Methodology Summit

---

### Education Methodology Summit Session 1

**Session Chair:** Zhixiong Chen (Mercy College, USA)

Invited Talk on Education Methodology

*Carl Chang and Liang-Jie Zhang*

Using Problems to Learn Service-oriented Computing

*Sandeep Purao, Vijay Vaishnavi, John Bagby, Faye Borthick, Brian Cameron, Lisa Lenze, Steve Sawyer, Hoi Suen, and Richard Welke*

### Education Methodology Summit Session 2

**Session Chair:** Beverly Hope (Victoria University of Wellington, New Zealand)

A Reference Curriculum for Service Engineering

*Frank C. Tung*

Integration of Services Computing Curricula in Information Technology

*Gordon W. Romney, Thomas M. Gatton, Albert P. Cruz, and Patrick A. Kennedy*

Developing an SSME Initiative for Instruction & Research at Morgan State University

*Jakita O. Thomas, S. Keith Hargrove, and Montressa Washington*

### Education Methodology Summit Session 3

**Session Chair:** Piers Campbell (UAE University, UAE)

When Service Computing Meets Software Engineering

*Yuhong Yan*

Preparing Future IT Managers for the Services Economy

*Piers Campbell, Beverley Hope, and Ahmad Jaffar*

Discipline Comparison of SSME with IS and its Education Implications

*Juanqiong Gou, Xuwei Li, Xuemei Li, and Peng Zhao*

---

## Electronic Service Marketing Workshop (ESM 2008)

---

**Session Chair:** Rong N. Chang (IBM T.J. Watson Research Center, USA)

Why Context, Content and Contract are Key for Dynamic Service Selection

*Zakir Laliwala, Ameer Desai, Sanjay Chaudhary, and Abdul Allam*

Consumer Phase Shift Simulation Based on Social Psychology and Complex Networks

*Takashi Yoshida, Nobuyuki Tomizawa, Tomohisa Gotoh, Hiroto Iguchi, Kei Sugioka, and Ken'ichi Ikeda*

A conceptual model for optimum pricing in a competitive multi-service communication market

*Morteza Mohamadkhan and Vahid Chizari*

Semantic Discovery of Expressive Service Descriptions

*Sudhir Agarwal*

---

## Methodologies for Non-functional Properties Workshop (MNPSC 2008)

---

**Session Chair:** Junichi Suzuki (University of Massachusetts Boston, USA)

Methodology and Tools for End-to-End SOA Security Configurations

*Fumiko Satoh, Michiaki Tatsubori, Yuichi Nakamura, Nirmal K. Mukhi, and Kouichi Ono*

Modeling Business Process Availability

*Nikola Milanovic, Bratislav Milic, and Miroslaw Malek*

SLAWs: Towards a conceptual architecture for SLA enforcement

*Jose Antonio Parejo, Pablo Fernandez, Antonio Ruiz-Cortes, and Jose Maria Garcia*

Customisable Model Transformations based on Non-functional Requirements

*Ashley Sterritt and Vinny Cahill*

Control Cases during the Software Development Life-Cycle

*Joe Zou and Christopher J. Pavlovski*

A Taxonomy for Identifying and Specifying Non-functional Requirements in Service-oriented Development

*Matthias Galster and Eva Bucherer*

Wireless Certificate Management Protocol Supporting Mobile Phones

*Yong Lee, Jaeil Lee, and GooYeon Lee*  
Middleware Support for Pluggable Non-functional Properties in Wireless Sensor Networks  
*Pruet Boonma and Junichi Suzuki*  
Multiobjective Optimization of SLA-aware Service Composition  
*Hiroshi Wada, Paskorn Champrasert, Junichi Suzuki, and Katsuya Oba*  
Specifying Flexible Charging Rules for Composable Services  
*Brendan Jennings, Lei Xu, and Eamonn de Leostar*  
QoS-Aware Semantic Service Selection: An Optimization Problem  
*Jose Maria Garcia, David Ruiz, Antonio Ruiz Cortés, and Jose Antonio Parejo*

## Service- and Process-Oriented Software Engineering Workshop (SOPOSE 2008)

---

**Session Chair:** Aditya Ghose (University of Wollongong, Australia)

On The Discovery of Business Processes Orchestration Patterns  
*Nuno Rodrigues and Luis Barbosa*  
A Business-Goal-Service-Capability Graph for the Alignment of Requirements and Services  
*Matthias Galster and Eva Bucherer*  
Generating Correct Protocols from Contracts: A Commitment-based Approach  
*Nanjangud Narendra*  
CAPSICUM - A Conceptual Model for Service Oriented Architecture Designs  
*T. Roach, G. Low, and J. D'Ambra*  
The Role of Service Granularity in A Successful SOA Realization – A Case Study  
*Naveen Kulkarni and Vishal Dwivedi*  
Light Weight SOA Governance – A Case Study  
*Deepti Parachuri, Nagarani Badveeti, and Sudeep Mallick*  
Interorganisational architectural framework leveraging Web services and AJAX  
*Jai Ganesh and Mayank Mathur*  
Actor Eco-Systems: Modeling and Configuring Virtual Enterprises  
*Aditya Ghose and George Koliadis*

## Scientific Workflows Workshop (SWF 2008)

---

**Session Chair:** Shiyong Lu (Wayne State University, USA)

WS-BioZard: A Wizard for Composing Bioinformatics Web Services  
*Zhiming Wang, John A. Miller, Jessica C. Kissinger, Rui Wang, Douglas Brewer, and Cristina Aurrecoechea*  
Using Characteristics of Computational Science Schemas for Workflow Metadata Management  
*Scott Jensen and Beth Plale*  
BioFlow: A Web-based Declarative Workflow Language for Life Sciences  
*Hasan Jamil and Bilal El-Hajj-Diab*  
Iterative Workflows for Numerical Simulations in Subsurface Sciences  
*Jared Chase, Karen Schuchardt, George Chin, Jr., Jeff Daily, and Timothy Scheibe*  
Trident: Scientific Workflow Workbench for Oceanography  
*R.S. Barga, J. Jackson, N. Araujo, D. Guo, N. Gautam, K. Grochow, and E. Lazowska*  
Scientific Workflow Systems for 21st Century, New Bottle or New Wine?  
*Yong Zhao, Ioan Raicu, and Ian Foster*  
End-to-End Scientific Data Management using Workflows  
*Yogesh Simmhan*  
Lifecycle of Scientific Workflows and Their Provenance: A Usage Perspective  
*Ilkay Altintas*

## Web X.0 Workshop (WebX 2008)

---

**Session Chair:** Jia Zhang (Northern Illinois University, USA)

SOA Generic Views - In the Eye of the Beholder

*Stefan Eicker, Reinhard Jung, Widura Schwittek, and Thorsten Spies*

XML Schema Representation and Reasoning: A Description Logic Method

*Xiaobing Wu, David Ratcliffe, and Mark A. Cameron*

Pipe Network 3D Visualization Service Architecture

*Liutong Xu, Guanhui Geng, Min Shi, and Suping Lin*

Towards a Model Driven Service Engineering Process

*Ateret Anaby-Tavor, David Amid, Aviad Sela, Amit Fisher, Kuo Zhang and Ou Tie Ju*

## Web Service Composition and Adaptation Workshop (WSCA 2008)

---

**Session Chair:** Samik Basu (Iowa State University, USA)

A Method for Automated Web Service Selection

*Hong Qing Yu and Stephan Reiff-Marganiec*

Composition of interactive Web services based on controller synthesis

*Philippe Balbiani, Fahima Cheikh, and Guillaume Feuillade*

Automatic Composition of Services with Security Policies

*Yannick Chevaliery, Mohamed Anis Mekki, and Micha'el Rusinowitch*

On Utilizing Qualitative Preferences in Web Service Composition: A CP-net based approach

*Ganesh Ram Santhanam, Samik Basu, and Vasant Honavar*

Dynamic Service Discovery using Active Lookup and Registration

*Haldor Samset and Rolv Bræk*

Techniques to Produce Optimal Web Service Compositions

*Eduardo Blanco, Yudith Cardinale, Maria-Esther Vidal, and Jesus Graterol*

## Testing on Web Services Workshop (WS-Testing 2008)

---

**Session Chair:** Howard Foster (Imperial College London, UK)

QGWEngine: A QoS-aware Grid Workflow Engine

*Yong Wang, Li Wang, and Guiping Dai*

Evaluation of QoS-Based Web Service Matchmaking Algorithms

*Kyriakos Kritikos and Dimitris Plexousakis*

An Approach for Verification in Service-Oriented Computing

*Soo Ho Chang, Fang Fang Chua, and Soo Dong Kim*

---

# **IEEE Computer Society Technical Committee on Services Computing**

**Dr. Ephraim Feig**, Motorola, USA  
**Prof. Patrick C.K. Hung**, University of Ontario Institute of Technology, Canada  
**Prof. Hemant Jain**, University of Wisconsin - Milwaukee, USA  
**Prof. Frank Leymann**, University of Stuttgart, Germany  
**Prof. Calton Pu**, Georgia Tech, USA  
**Prof. Jeffrey Tsai**, University of Illinois at Chicago, USA  
**Prof. Zhiwei Xu**, Institute of Computing Technology, ICT  
Chinese Academy of Sciences, China,  
**Dr. Liang-Jie (LJ) Zhang (Chair)**, IBM T. J. Watson Research Center, USA

## **Sponsored Conferences:**

IEEE International Conference on Web Services (ICWS)  
<http://conferences.computer.org/icws>

IEEE International Conference on Services Computing (SCC)  
<http://conferences.computer.org/scc>

IEEE European Conference on Web Services (ECOWS)  
<http://conferences.computer.org/ecows>

IEEE Asia-Pacific Conference on Services Computing (APSCC)  
<http://conferences.computer.org/apsc>

IEEE Congress on Services (SERVICES)  
<http://conferences.computer.org/services>

IEEE Transactions on Services Computing (TSC)  
<http://www.computer.org/tsc>



# The Mid-Pacific Conference Center

