

28th International Conference on Software Engineering

20-28 May 2006

<http://www.icse-conferences.org/2006/>



Advance Program and Call for Participation

The 2006 International Conference on Software Engineering, ICSE, in Shanghai, China, will be an exciting and exotic week for all participants, bringing together researchers and practitioners from all over the world to a place ascending in prominence in the global software industry. ICSE attendees will see and hear cutting edge, world class research results, practitioner experiences, education innovations, and distinguished speakers. In addition, ICSE tutorials and satellite workshops offer in-depth explorations into specific topics. Ongoing demonstration and poster sessions will expose attendees to practical tools and early emerging results. Other ICSE events, such as the Doctoral Symposium and New Software Engineering Faculty Symposium offer particular attendees a tailored learning experience to further their careers.

The ICSE conference is a premier event each year in the software engineering community, and this year will be no exception. The next several pages detail the entire ICSE program, and it is our hope that it will entice you to attend. For more information about ICSE 2006 and for ongoing updates, please visit the ICSE 2006 web site at <http://www.icse-conferences.org/2006>.

Shanghai is a city that blends the dazzlingly ultramodern and the charmingly traditional, and visiting there is an experience you will not soon forget. Nearby attractions and further excursions into China and the Far East will entice you to stay beyond ICSE and visit places you have never been to before.

We want to remind you that a visa is needed for travel—for everyone from outside China—and you can find more information about how to obtain a visa on the ICSE 2006 web site.



We look forward to seeing you in May!

Leon J. Osterweil,
General Chair



Keynote Talks

The ICSE Keynote Talks bring world reknown people to challenge ICSE attendees with insights and observations about the software engineering discipline and industry. Keynotes are always a highlight of the conference, and sure to get people talking!

Wednesday, May 24

Development of Software Engineering: Co-Operative Efforts from Academia, Government and Industry

Fuqing Yang, Professor, Dept. of Computer Science and Technology, Peking U., China



Thursday, May 25

A View of 20th and 21st Century Software Engineering

Barry Boehm, TRW Professor of Software Engineering, Computer Science Dept., USC
Director, USC Center for Software Engineering, USA



Friday, May 26

Optimization of Software Development

Reinhold Achatz, Vice President Corporate Technology, Siemens, Germany



Sponsors



Supporters



Research Track

The Research Track is the central ICSE event, showcasing high-quality research papers through two parallel session tracks. Accepted research papers are listed below according to the day and session in which they will appear.

Wednesday, May 24 through Friday, May 26

Program Co-Chairs: Dieter Rombach, TU Kaiserslautern, Germany
Mary Lou Soffa, University of Virginia, USA

Architecture & Design I	Wednesday, 11:00am - 12:30pm
<i>Architectural Support for Trust Models in Decentralized Applications</i> , Girish Suryanarayana, Mamadou Diallo, Justin Erenkrantz, Richard Taylor, Institute for Software Research, University of California, Irvine, USA <i>Efficient Exploration of Service-Oriented Architectures using Aspects</i> , Ingolf Krueger, Reena Mathew, University of California, San Diego, USA; Michael Meisinger, Technical University Munich, Germany <i>Symbolic Invariant Verification for Systems with Dynamic Structural Adaptation</i> , Holger Giese, Daniela Schilling, Florian Klein, Basil Becker, University of Paderborn, Germany; Dirk Beyer, Ecole Polytechnique Fédérale de Lausanne, Switzerland	
Test & Analysis I	Wednesday, 11:00am - 12:30pm
<i>Improving Test Suites for Efficient Fault Localization</i> , Benoit Baudry, Franck Fleurey, IRISA, France; Yves Le Traon, France Telecom R&D, France <i>Automated, Contract-based User Testing of Commercial-Off-The-Shelf Components</i> , Lionel Briand, Yuan Labiche, Mike Sowka, Carleton University, Canada <i>An Intensional Approach to the Specification of Test Cases for Database Systems</i> , David Willmor, Suzanne Embury, Univ. of Manchester, UK	
Software Components & Reuse	Wednesday, 2:00pm - 3:30pm
<i>Feature Oriented Refactoring of Legacy Applications</i> , Jia Liu, Don Batory, University of Texas at Austin, USA; Christian Lengauer, University of Passau, Germany <i>Aspectual Mixin Layers: Aspects and Features in Concert</i> , Sven Apel, Thomas Leich, Gunter Saake, University of Magdeburg, Germany <i>Evaluating Pattern Catalogs - The Computer Games Experience</i> , Maria Cutumisu, Curtis Onuczko, Duane Szafron, Jonathan Schaeffer, Matthew McNaughton, Thomas Roy, Jeff Siegel, Mike Carbonaro, University of Alberta, Canada	
Test & Analysis II	Wednesday, 2:00pm - 3:30pm
<i>HDD: Hierarchical Delta Debugging</i> , Ghassan Mishserghi, Zhendong Su, University of California, Davis, USA <i>Managing Space for Finite-State Verification</i> , Jianbin Tan, George Avrunin, Lori Clarke, Univ. of Massachusetts, Amherst, USA <i>Backwards-Compatible Array Bounds Checking for C with Very Low Overhead</i> , Dinakar Dhurjati, Vikram Adve, University of Illinois at Urbana-Champaign, USA	
Reverse Engineering & Refactoring	Wednesday, 4:00pm - 5:30pm
<i>JunGL: a Scripting Language for Refactoring</i> , Mathieu Verbaere, Ran Ettinger, Oege De Moor, Oxford University Computing Laboratory, UK <i>Inferring Templates from Spreadsheets</i> , Robin Abraham, Martin Erwig, Oregon State University, USA <i>Semantics-Based Reverse Engineering of Object-Oriented Data Models</i> , G. Ramalingam, Raghavan Komondoor, John Field, IBM Research, USA; Saurabh Sinha, IBM Research, India	
Invited Talk	Wednesday, 4:00pm - 5:30pm
<i>Empirical Studies and Measurement</i> , Victor R. Basili, U. of Maryland, USA; Sebastian Elbaum, U. of Nebraska – Lincoln, USA	
Architecture & Design II	Thursday, 11:00am - 12:30pm
<i>Modeling Behavioral Design Patterns of Concurrent Objects</i> , Robert Pettit, The Aerospace Corporation, USA; Hassan Gomaa, George Mason University, USA <i>Modeling Aspect Mechanisms: A Top-Down Approach</i> , David Lorenz, University of Virginia, USA; Sergei Kojarski, Northeastern U., USA <i>A Bayesian Approach to Architectural Model Matching</i> , David Mandelin, University of California, Berkeley, USA; Daniel Yellin, Doug Kimelman, IBM Corporation, USA	
Test & Analysis III	Thursday, 11:00am - 12:30pm
<i>Modular Checking for Buffer Overflows in the Large</i> , Brian Hackett, Manuvir Das, Daniel Wang, Zhe Yang, Microsoft Corporation, USA <i>Discovering Faults in Idiom-Based Exception Handling</i> , Magiel Bruntink, CWI, Arie van Deursen, CWI & TUD, Tom Tourwe, CWI & VUB, The Netherlands <i>Static Detection of Leaks in Polymorphic Containers</i> , David Heine, Tensilica, Inc., USA; Monica Lam, Stanford University, USA	
Panel	Thursday, 2:00pm - 3:30pm
<i>Formal Methods - Too Little or Too Much?</i>	

Test & Analysis IV	Thursday, 2:00pm - 3:30pm
<p><i>Osprey: A Practical Type System for Validating Dimensional Unit Correctness of C Programs</i>, Lingxiao Jiang, Zhendong Su, University of California, Davis, USA</p> <p><i>Locating Faults through Automated Predicate Switching</i>, Xiangyu Zhang, Rajiv Gupta, Neelam Gupta, Univ. of Arizona, USA</p> <p><i>Terracotta: Mining Temporal API Rules From Imperfect Traces</i>, Jinlin Yang, David Evans, University of Virginia, USA; Deepali Bhardwaj, Thirumalesh Bhat, Manuvir Das, Microsoft Corporation, USA</p>	
Theory & Formal Methods	Thursday, 4:00pm - 5:30pm
<p><i>Incremental Consistency Checking for Pervasive Context</i>, Chang Xu, S.C. Cheung, Hong Kong University of Science and Technology, China</p> <p><i>Interacting Process Classes</i>, Anki Goel, Sun Meng, Abhik Roychoudhury, P.S. Thiagarajan, National University of Singapore, Singapore</p> <p><i>Symbolic Model Checking of Declarative Relational Models</i>, Felix Chang, Daniel Jackson, Massachusetts Institute of Technology, USA</p>	
Empirical Methods & Measurement	Thursday, 4:00pm - 5:30pm
<p><i>Estimating LOC for Information Systems from their Conceptual Data Models</i>, Hee Beng Kuan Tan, Yuan Zhao, Nanyang Technological University, Singapore; Hongyu Zhang, RMIT University, Australia</p> <p><i>Development of a Hybrid Cost Estimation Model in an Iterative Manner</i>, Adam Trendowicz, Jens Heidrich, Jürgen Münch, Fraunhofer Institute for Experimental Software Engineering, Germany; Yasushi Ishigai, Kenji Yokoyama, Software Engineering Center, Japan; Nahommi Kikuchi, Oki Electrical Industry, Co., Ltd., Japan</p> <p><i>On the Successes of Empirical Studies in Software Engineering Research</i>, Carmen Zannier, Grigori Melnik, Frank Maurer, University of Calgary, Canada</p>	
Software Process & Workflow	Friday, 11:00am - 12:30pm
<p><i>Publishing and Composition of Atomicity-equivalent Services for B2B Collaboration</i>, Chunyang Ye, Shing-Chi Cheung, The Hong Kong University of Science and Technology, China</p> <p><i>Who Should Fix This Bug?</i>, John Anvik, Lyndon Hiew, Gail C. Murphy, University of British Columbia, Canada</p> <p><i>Model-Based Development of Dynamically Adaptive Software</i>, Ji Zhang, Betty Cheng, Michigan State University, USA</p>	
Development With UML	Friday, 11:00am - 12:30pm
<p><i>Instant Consistency Checking for the UML</i>, Alexander Egyed, Teknowledge, Corp., USA</p> <p><i>Traffic-aware Stress Testing of Distributed Systems Based on UML Models</i>, Vahid Garousi, Lionel C. Briand, Yvan Labiche, Carleton University, Canada</p> <p><i>How Confusing are Defects in UML Models? An Experimental Investigation</i>, Christian Lange, Michel Chaudron, Eindhoven University of Technology, The Netherlands</p>	
Invited Talk	Friday, 2:00pm - 3:30pm
<p><i>Software Engineering for the Automotive Industry</i>, Manfred Broy, Technische Universität München, Germany</p>	
Invited Talk	Friday, 2:00pm - 3:30pm
<p><i>Software Engineering for Assisted Living</i>, Arthur I. Karshmer, University of South Florida, USA; Juergen Nehmer, University Kaiserslautern, Germany</p>	

Experience Track

The Experience Track presents practical results from real-world experiences, meant to provide practitioners and researchers insights and ideas into novel and effective techniques.

Wednesday, May 24 through Friday, May 26

Chair: Forrest Shull, Fraunhofer Ctr. for Exp. S.E., UMD, USA

Risk Analysis
<p><i>Experiences and Results from Initiating Field Defect Prediction and Product Test Prioritization Efforts at ABB Inc.</i>, Paul Li, James Herbsleb, Mary Shaw, Institute for Software Research International, Carnegie Mellon University, USA; Brian Robinson, ABB Inc., USA</p> <p><i>A Risk-Driven Method for eXtreme Programming Release Planning</i>, Ming-Shu Li, Meng Huang, Feng-Di Shu, Juan Li, Lab for Internet Software Technologies, Institute of Software, Chinese Academy of Sciences, China</p> <p><i>Assessing COTS Integration Risk Using Cost Estimation Inputs</i>, Ye Yang, Barry Boehm, University of Southern California, USA; Betsy Clark, Software Metrics, Inc., USA</p>
Using Metrics
<p><i>Lessons Learnt from the Analysis of Large-Scale Corporate Databases</i>, Barbara Kitchenham, Cat Kutay, Ross Jeffery, National ICT Australia, Australia; Colin Connaughton, IBM Global Services A/NZ, Australia</p> <p><i>Metrics for Model Driven Requirements Development</i>, Brian Berenbach, Gail Borotto, Siemens Corporate Research, Inc., USA</p> <p><i>Mining Metrics to Predict Component Failures</i>, Nachiappan Nagappan, Thomas Ball, Microsoft Research, USA; Andreas Zeller, Saarland University, Germany</p>

Experiences with Open-Source and Legacy Systems

Experiences with Place Lab: an Open Source Toolkit for Location-Aware Computing, Timothy Sohn, William Griswold, University of California, San Diego, USA; James Scott, Intel Research Cambridge, UK; Anthony LaMarca, Yatin Chawathe, Ian Smith, Intel Research Seattle, USA
A Case Study of a Corporate Open Source Development Model, Vijay Gurbani, Anita Garvert, Lucent Technologies, Inc./Bell Laboratories, USA; James Herbsleb, Carnegie Mellon University, USA
Redesigning Legacy Applications for the Web with UWAT+: A Case Study, Damiano Distanto, University of Sannio, Italy; Scott Tilley, Florida Institute of Technology, USA; Gerardo Canfora, University of Sannio, Italy; Shihong Huang, Florida Atlantic University, USA

Software Development Practices

Maintaining Mental Models: A Study of Developer Work Habits, Thomas LaToza, Institute for Software Research International, Carnegie Mellon University, USA; Gina Venolia, Robert DeLine, Microsoft Research, USA
Applying the Value/Petri Process to ERP Software Development in China, LiGuo Huang, Barry Boehm, University of Southern California, USA; Hao Hu, Jidong Ge, Jian Lu, Institute of Computer Software, Nanjing University, China; Cheng Qian, Neusoft Co. Ltd., China
Applying Regression Test Selection for COTS-based Applications, Jiang Zheng, North Carolina State University, USA; Brian Robinson, ABB Inc., US Corporate Research, USA; Laurie Williams, North Carolina State University, USA; Karen Smiley, ABB Inc., US Corp. Res., USA

Far East Experience Track

The Far East Experience Track is a unique feature of ICSE 2006, dedicated to presenting the state-of-the-practice of software engineering in Asia.

Wednesday, May 24 through Friday, May 26

Chair: Kouichi Kishida, Software Research Associates, Japan

Development Techniques

Reengineering Standalone C++ Legacy Systems into the J2EE Partition Distributed Environment, Xinyu Wang, Jianling Sun, Xiaohu Yang, Chao Huang, Zhijun He, Zhejiang University, China; Srinivasa R. Maddineni, State Street Corporation, USA
UML-Based Service Robot Software Development: A Case Study, Minseong Kim, Suntae Kim, Sooyong Park, Sogang University, Korea; Mun-Taek Choi, Munsang Kim, KIST, Korea; Hassan Gomaa, George Mason University, USA
Analysis of the Interaction between Practices for Introducing XP Effectively, Osamu Kobayashi, SRA, Japan; Mitsuyoshi Kawabata, Agileware, Japan; Makoto Sakai, SRA-KTL, Japan; Eddy Parkinson, Osaka University, Japan

Evaluation

Experiments on Quality Evaluation of Embedded Software in Japan Robot Software Design Contest, Hironori Washizaki, NII, Japan; Yasuhide Kobayashi, Eiwa System, Japan; Hiroyuki Watanabe, OGIS-RI, Japan
Procurement of Enterprise Resource Planning Systems: Experiences with Some Hong Kong Companies, Pak-Lok Poon, Hong Kong Polytechnic University, Hong Kong; Yuen Tak Yu, City University of Hong Kong, Hong Kong
Detecting Low Usability Web Pages Using Quantitative Data of Users' Behavior, Noboru Nakamichi, Ken-ichi Matsumoto, NAIST, Japan; Makoto Sakai, SRA-KTL, Japan; Kazuyuki Shima, Hiroshima City University, Japan

Software Process

Experiences of Applying SPC techniques to Software Development Processes, Mutsumi Komuro, Hitachi Software Engineering, Japan
BSR: A Statistic-based Approach for Establishing and Refining Software Process Performance Baseline, Qing Wang, Nan Jiang, Lang Gou, Xia Liu, Mingshu Li, Yongji Wang, Institute of Software, Chinese Academy of Sciences, China
Practical Approach to Development of SPI Activities in a Large Organization, Hideto Ogasawara, Takashi Ishikawa, Tetsuro Moriya, Toshiba Corporation, Japan

Posters / Informal Presentations

Efficiency Analysis of Model-based Review in Actual Software Design, Hitoshi Furusawa, Eun Hye Choi, Hiroshi Watanabe, AIST, Japan
Overseas Development for a Major U.S. eCommerce Website, Jiang Wu, Sheldon Wang, Christine Chau, eHealth, USA; Lei Zeng, Jinsong Lin, eHealth-China, China
A Series of Development Methodologies for a Variety of Systems in Korea, Jihyun Lee, Jin-Sam Kim, Jin-Hee Cho, ETRI, Korea
A Research Framework for Empirical Software Engineering Environment Reflected from Software Industry Structure, Yoshiki Mitani, Nahomi Kikuchi, IPA/SEC, Japan; Tomoko Matsumura, Satoshi Iwamura, Mike Barker, Ken-ichi Matsumoto, EASE, Japan; Yoshiki Higo, Katsuro Inoue, Osaka University, Japan
Estimation of Project Success Using Bayesian Classifier, Seiya Abe, Osamu Mizuno, Tohru Kikuno, Osaka University, Japan; Nahomi Kikuchi, Masayuki Hirayama, IPA/SEC, Japan
Trust in Software Outsourcing Relationships: An Analysis of Vietnamese Practitioners' Views, Phong Thanh Nguyen, University of New South Wales, Australia; Muhammad Ali Babar, June M. Verner, National ICT Australia, Australia
Improving Requirements Engineering Process for Complex System Development through RIM, Autcha Mutchalintungkul, Juthamas Oonhawatt, Kittiphong Pholpipatanaphong, Daricha Sutivong, Nakorn Prompoon, Chulalongkorn University, Thailand
University and Industry in Synergy: A Research Journey Towards Product Lines, Stan Jarzabek, National University of Singapore, Singapore; Ulf Pettersson, ST Electronics, Singapore
An Experimental Comparison of Four Test Suite Reduction Techniques, Hao Zhong, Lu Zhang, Hong Mei, Peking University, China

Education Track

The Software Engineering Education and Training Track will provide a forum for sharing recent advances, trends and concerns with software engineering education, including use of the Software Engineering Body of Knowledge (SWEBOOK) and the Software Engineering Volume (SE2004) of the Computing Curriculum in course/curriculum design.

Wednesday, May 24 through Friday, May 26

Chair: Laurie Williams, North Carolina State University, USA

Advanced Topics in Software Engineering Education

Social Software Engineering Projects: a Cross Study, Shankar Venkatagiri, Indian Institute of Management Bangalore, India
Using Return on Investment to Compare Agile and Plan-Driven Practices in Undergraduate Group Projects, Paul Rundle, Rick Dewar, Heriot-Watt University, UK
You Want Brooks in Your Classroom?, Daniel Port, University of Hawaii, USA; David Klappholz, Stevens Institute of Technology, USA

Software Engineering Education Fundamentals

Software Engineering for Undergraduates, Nenad Stankovic, Dedra P/L, Australia
Dimensions of Software Engineering Course Design, Mario Bernhart, Wolfgang Zuser, Jennifer Hetzl, Thomas Grechenig, Vienna University of Technology/Institute of Computer Aided Automation/Research Group for Industrial Software (INSO), Austria
Inculcating Invariants in Introductory Courses, David Evans, University of Virginia, USA; Michael Peck, Johns Hopkins University, USA

Distributed Development

Distributed Development: An Educational Perspective on the Global Studio Project, Ita Richardson, Irish Software Engineering Research Centre, University of Limerick, Ireland; Allen E. Milewski, Monmouth University, USA; Patrick Keil, Technische Universität München, Germany; Neel Mullick, Siemens Corporate Research, USA
Instructional Design and Assessment Strategies for Teaching Global Software Development, Daniela Damian, Allyson Hadwin, University of Victoria, Canada; Ban Al-Ani, University of Technology, Sydney, Australia

Posters / Short Papers

A Software Process for Time-constrained Course Projects, Wilson Paula, Federal University of Minas Gerais, Brazil
Teaching Framework for Software Development Methods, Orit Hazzan, Yael Dubinsky, Technion - Israel Institute of Technology, Israel
Experience in Teaching a Software Reengineering Course, Mohammad El-Ramly, University of Leicester, UK
A Comparison of Communication Technologies to Support Novice Team Programming, Davor Cubranic, Margaret-Anne Storey, Jody Ryall, University of Victoria, Canada
Assessing Undergraduate Experience of Continuous Integration and Test-Driven Development, Jon Bowyer, Janet Hughes, U. of Dundee, UK

Software Engineering: Achievements and Challenges Track

This new track in ICSE 2006 focuses on major achievements and core challenges in Software Engineering. A combination of invited talks and topical papers will inform and challenge the audience.

Wednesday, May 24 through Friday, May 26

Chair: Jeff Kramer, Imperial College, London, UK

Session One

Invited Talk: TBA

A Software Architecture-Based Framework for Highly Distributed and Data Intensive Scientific Applications, Chris Mattmann, Daniel Crichton, Jet Propulsion Laboratory, USA; Nenad Medvidovic, University of Southern California, USA; Steve Hughes, JPL, USA

Session Two

Invited Talk: TBA

A Research Agenda for Distributed Software Development, Bikram Sengupta, IBM Research, India; Satish Chandra, IBM Research, USA; Vibha Sinha, IBM Research, India

Session Three

Invited Talk: TBA

Managing Exceptions in the Medical Workflow Systems, Minmin Han, Siemens Corporate Research Inc., USA; Thomas Thiery, Technische Universität München, Germany; Xiping Song, Siemens Corporate Research Inc., USA

Session Four

Invited Talk: TBA

Multi-Platform User Interface Construction – a Challenge for Software Engineering in-the-Small, Judith Bishop, U. of Pretoria, South Africa

Research Demonstrations

Research demonstrations enable conference participants to view research systems in action, and to discuss the systems with the people who created them. These demonstrations are intended to show early implementations of novel software engineering concepts and are suitable for mature presentations that can be communicated effectively to a large audience using projection technology.

Formal demos on Thursday, May 25
Informal demos through Friday, May 26

Co-Chairs: Matthew Dwyer, University of Nebraska—Lincoln, USA
Kokichi Futatsugi, JAIST, Japan

Verification and Testing

LTSA-WS: A Tool for Model-Based Verification of Web Service Compositions and Choreography, Howard Foster, Sebastian Uchitel, Jeff Magee, Jeff Kramer, Imperial College London, UK
HighSpec: a Tool for Building and Checking OZTA Models, Ping Hao, Xian Zhang, National University of Singapore, Singapore; Sheng Chao Qin, University of Durham, UK; Jin Song Dong, National University of Singapore, Singapore
GridUnit: Software Testing on the Grid, Alexandre Duarte, Walfredo Cirne, Francisco Brasileiro, Patricia Machado, Universidade Federal de Campina Grande, Brazil

Development and Transformation

ASADAL: A Tool System for Co-Development of Software and Test Environment Based on Product Line Engineering, Kyungseok Kim, Hyejung Kim, Miyoung Ahn, Minseok Suh, Yeop Chang, Kyo Kang, Pohang University of Science and Technology, Korea
Developing and Executing Java AWT Applications on Limited Devices with TCPTE, Gerardo Canfora, Giuseppe Di Santo, Eugenio Zimeo, RCOST - University of Sannio, Italy
Interactive Transformation of Java Programs in Eclipse, Marat Boshernitsan, Susan Graham, University of California, Berkeley, USA

Data Base and Business Process

Preventing SQL Injection Attacks Using AMNESIA, William Halfond, Alessandro Orso, Georgia Institute of Technology, USA
A Framework for Automatic Generation of Evolvable E-Commerce Workplaces Using Business Processes, Ying Zou, Qi Zhang, Queen's University, Canada
LISFS: a Logical Information System as a File System, Yoann Padioleau, École des Mines de Nantes, France; Benjamin Sigonneau, Olivier Ridoux, Sébastien Ferré, IFSIC/IRISA, France; Mireille Ducassé, INSA/IRISA, France; Olivier Bedel, Peggy Cellier, IFSIC/IRISA, France

Informal Demonstrations

LiRules: an Automated Software Library Usage Rule Extraction Tool, Chang Liu, En Ye, Ohio University, USA; Debra Richardson, University of California, Irvine, USA
Relational Programming with CrocoPat, Dirk Beyer, EPFL, Switzerland
FormulaBuilder: A Tool for Graph-Based Modelling and Generation of Formulae, Sven Jörges, University of Dortmund, Germany
MuJava: A Mutation System for Java, Yu-Seung Ma, Electronics and Telecommunication Research Institute, Korea; Jeff Offutt, George Mason University, USA; Yong-Rae Kwon, Korea Advanced Institute of Science and Technology, Korea
3D Visualization for Concept Location in Source Code, Xinrong Xie, Denys Poshyvanyk, Andrian Marcus, Wayne State University, USA
Addressing Crosscutting Deployment and Configuration Concerns of Distributed Real-time and Embedded Systems via Aspect-oriented & Model-driven Software Development, Gan Deng, Douglas Schmidt, Aniruddha Gokhale, Vanderbilt University, USA
Tools for Model-based Security Engineering, Jan Jürjens, TU Munich, Germany
Automatic Extraction of Abstract-Object-State Machines from Unit-Test Executions, Tao Xie, Evan Martin, Hai Yuan, North Carolina State University, USA
A Tool for Analyzing and Detecting Malicious Mobile Code, Akira Mori, Tomonori Izumida, AIST, Japan; Toshimi Sawada, Tadashi Inoue, SRA Key-Tech Laboratories, Japan

Emerging Results

The Emerging Results session provides an informal and highly interactive environment that gives ICSE attendees the opportunity to engage with one another in discussions about ongoing work and critical issues in key areas. Authors will present posters and have immediate, one-on-one interaction with attendees.

Poster session Wednesday May 24
On display through Friday May 26

Co-Chairs: Betty H.C. Cheng, Michigan State University, USA
Beijun Shen, Shanghai Jiaotong University, China

Architecture

Towards a Distributed Software Architecture Evaluation Process - A Preliminary Assessment, Muhammad Ali Babar, National ICT Australia & University of New South Wales, Australia; Barbara Kitchenham, National ICT Australia, Australia
Finding Good Architectural Design Alternatives with Multi-Objective Optimization Strategies, Lars Grunske, U. of Queensland, Australia
An Architectural Style for High-Performance Asymmetrical Parallel Computations, David Woollard, Nenad Medvidovic, USC, USA
Estimating Software Component Reliability by Leveraging Architectural Models, Roshanak Roshandel, Seattle University, USA; Somo Banerjee, Leslie Cheung, Nenad Medvidovic, Leana Golubchik, University of Southern California, USA

Formal Methods and Analysis

Easy Language Extension with Meta-AspectJ, Shan Shan Huang, Yannis Smaragdakis, Georgia Institute of Technology, USA
The Problem of Knowledge Decoupling in Software Development Projects, Yutaka Yamauchi, Jack Whalen, Nozomi Ikeya, Erik Vinkhuyzen, Palo Alto Research Center, Inc., USA
Dynamically Discovering Likely Interface Invariants, Christoph Csallner, Yannis Smaragdakis, Georgia Institute of Technology, USA
Evaluation of Mutation Testing for Object-Oriented Programs, Yu-Seung Ma, Electronics and Telecommunication Research Institute, Korea; Mary Jean Harrold, Georgia Institute of Technology, USA; Yong-Rae Kwon, Korea Advanced Institute of Science and Technology, Korea
Integrating Static Analysis and General-Purpose Theorem Proving for Termination Analysis, Panagiotis Manolios, Daron Vroon, Georgia Institute of Technology, USA

Metrics

Using the Balanced Scorecard Process to Compute the Value of Software Applications, Steven Dolins, Bradley University, USA
Designing an Economic-driven Evaluation Framework for Process-oriented Software Technologies, Bela Mutschler, DaimlerChrysler Corporate Research, Germany; Manfred Reichert, U. of Twente, The Netherlands; Johannes Bumiller, DaimlerChrysler Corporate Research, Germany
Portfolio Management of Software Development Projects Using COCOMO II, Wiboon Jiamthubthugsin, Daricha Sutivong, Chulalongkorn University, Thailand

Program Analysis

Using Information Retrieval System to Retrieve Source Code Samples, Renuka Sindhgatta, Infosys Technologies Ltd., India
An Empirical Study on Decision Making in Off-The-Shelf Component-Based Development, Jingyue Li, Reidar Conradi, Odd Petter N. Slyngstad, Norwegian University of Science and Technology, Norway; Christian Bunse, Fraunhofer IESE, Germany; Marco Torchiano, Maurizio Morisio, Politecnico di Torino, Italy
Effective Identification of Source Code Authors Using Byte-Level Information, Georgia Frantzeskou, Efstathios Stamatatos, Stefanos Gritzalis, Sokratis Katsikas, Aegean University, Greece
A Methodology and Tool for Performance Analysis of Distributed Server Systems, Rukma Prabhu Verlekar, Varsha Apte, Indian Institute Of Technology, Bombay, India

Requirements Engineering

Understanding Software Application Interfaces via String Analysis, Evan Martin, Tao Xie, North Carolina State University, USA
Ensemble of Missing Data Techniques to Improve Software Prediction Accuracy, Bhekisipho Twala, Michelle Cartwright, Martin Shepperd, Brunel University, UK
Understanding Requirements for Computer-aided Healthcare Workflows: Experiences and Challenges, Xiping Song, Beatrice Hwong, Gilberto Matos, Arnold Rudorfer, Christopher Nelson, Minmin Han, Andrei Girenkov, Siemens Corporate Research Inc., USA
Analysis of Multi-Agent Systems based on KAOS Modeling, Hiroyuki Nakagawa, Takuya Karube, The University of Tokyo, Japan; Shinichi Honiden, National Institute of Informatics, Japan
"How do I know what I have to do?" The Role of the Inquiry Culture in Requirements Communication for Distributed Software Development Projects, Vesna Mikulovic, Michael Heiss, Siemens AG, Austria
The Role of Asynchronous Discussions in Increasing the Effectiveness of Remote Synchronous Requirements Negotiations, Daniela Damian, University of Victoria, Canada; Filippo Lanubile, Teresa Mallardo, University of Bari, Italy

Workshops

ICSE Workshops provide forums for groups of participants to exchange opinions, advance ideas, and discuss preliminary results on focused research topics. Workshops are either one, one and a half, or two days long and are held before or after the main conference.

May 21-23, 27-28

Chair: Frances Paulisch, Siemens Corporation, Germany

ID	Acronym	Title	Dates
W1	SESS	Software Engineering for Secure Systems	May 20-21
W2	WISER	2nd Intl. Workshop on Interdisciplinary Software Engineering Research	May 20
W3	SSEE	3rd Intl. Summit on Software Engineering Education	May 20
W4	EA	Early Aspects at ICSE: Aspect-Oriented Requirements Engineering and Architecture Design	May 21
W5	SEAMS	Software Engineering for Adaptive and Self-Managing Systems	May 21-22
W6	ROA	The Role of Abstraction in Software Engineering	May 21
W7	WOSQ	4th Workshop on Software Quality	May 21
W8	MSR	3rd Intl. Workshop on Mining Software Repositories	May 22-23
W9	SELMAS	5th Workshop on Software Engineering for Large-Scale Multi-Agent Systems	May 22-23
W10	TT	Software Technology Transfer in Software Engineering	May 22
W11	GaMMa	Intl. Workshop on Global Integrated Model Management	May 22
W12	AST	Workshop on Automation of Software Test	May 23

ID	Acronym	Title	Dates
W13	IWAAPF	2nd Intl. Workshop on Advances and Applications of Problem Frames	May 23
W14	GSD	Global Software Development for the Practitioner	May 23
W15	SEAS	3rd Intl. Workshop on Software Engineering for Automotive Systems	May 23
W16	WODA	4th International Workshop on Dynamic Analysis	May 23
W17	IWSOSE	International Workshop on Service-Oriented Software Engineering	May 27-28
W18	EDSER	8th Economics Driven Software Engineering Research	May 27
W19	SCESM	5th Intl. Workshop on Scenarios and State Machines: Models, Algorithms, and Tools	May 27

Tutorials

The ICSE tutorial program provides conference participants with the opportunity to gain new insights, knowledge, and skills in a broad range of areas of software engineering. Tutorial participants include software practitioners, managers, teachers, researchers, and students seeking to gain a better understanding of software engineering. Tutorials are either full-day (6 hours) or half-day (3 hours).

May 20-23

Chair: S.C. Cheung, Hong Kong U. of Science and Tech., Hong Kong

ID	Title	Presenters	Date
F1	Software Engineering Themes for the Future: Collaborative Design, Social Creativity, and Meta-Design	Gerhard Fischer	May 20
F2	Case Studies for Software Engineers	Dewayne Perry, Susan Sim, Steve Easterbrook	May 21
F3	Engineering Safety-Related Requirements	Donald Firesmith	May 22
F4	Variability Management in Software Product Line Engineering	Klaus Pohl, Andreas Metzger	May 22
F5	Performing Systematic Literature Reviews in Software Engineering	David Budgen, Pearl Brereton, Barbara Kitchenham	May 23
F6	Cost-Effective Engineering of Web Applications	Stan Jarzabek, Ulf Pettersson	May 23
F7	Software Evolution: Analysis and Visualization	Harald Gall, Michele Lanza	May 27
F8	Agile Methods: Moving towards the Mainstream of the Software Industry	Frank Maurer, Grigori Melnik	May 27
F9	Designing Concurrent, Distributed, and Real-Time Applications with UML	Hassan Gomaa	May 28
H1	Aspect-Oriented Software Development Beyond Programming	Awais Rashid, Alessandro Garcia, Ana Moreira	May 20 AM
H2	From Semantic Web to Expressive Software Specifications	Jin Song Dong	May 20 AM
H3	Software Architectures for Dependable Systems	Rogério de Lemos	May 20 PM
H4	Towards Dynamic Web Services	Luciano Baresi, Sam Guinea	May 20 PM
H5	An Overview of UML 2.0	Bran Selic	May 21 AM
H6	Web Service Orchestration with BPE	Liang Chen, Wolfgang Emmerich, Bruno Wassermann, Howard Foster	May 21 AM
H7	Creative Requirements: Invention and its Role in Requirements Engineering	Neil Maiden, Suzanne Robertson, James Robertson	May 21 PM
H8	Testing Concurrent Java Components	Paul Strooper, Luke Wildman	May 21 PM
H9	Modeling of Component Based Systems	Shao Weizhong, Huang Gang, Zhao Haiyan	May 27 AM
H10	How to Integrate Usability into the Software Development Process	Natalia Juristo, Xavier Ferre	May 28 AM
H11	Software Component Models	Kung-Kiu Lau	May 28 PM

Doctoral Symposium

The Doctoral Symposium provides a supportive yet questioning setting in which students can attend ICSE and present their work, and it supports the ICSE mission as a world-leading venue for software engineering research. Students are able to discuss their goals, methods, and results at an early stage in their research. The Symposium aims to provide useful guidance for completion of the dissertation research and initiation of a research career.

Tuesday, May 23

Chair: Anthony Finkelstein, University College, London, UK

New Software Engineering Faculty Symposium

The New Software Engineering Faculty Symposium (NSEFS 06) is intended to help prepare young software engineering academics for successful careers as professors. The event is open to all, but is specifically intended for people who are within two years (either before or after) the awarding of

their Ph.D. The Symposium will consist of presentations by leading software engineering academics, who will provide insights and advice about the various facets of a career as a Software Engineering faculty member. Lively discussion and interaction is expected and encouraged.

Tuesday May 23

Chair: Lori A. Clarke, University of Massachusetts, USA

Co-Located Events

SPW/ProSim 2006, the combined workshop on software process and software process simulation and modeling, will be held immediately preceding ICSE 2006. Please visit the workshop's web site at <http://www.cnsqa.com/spw2006/>.

May 20-21

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See you in Shanghai!