FINAL PROGRAM

ACM SIGSOFT 2004

Twelfth International Symposium on the Foundations of Software Engineering (FSE-12)

http://www.isr.uci.edu/FSE-12/

October 31 - November 5, 2004
Hyatt Newporter Hotel, Newport Beach, California, USA

SIGSOFT 2004 brings together researchers and practitioners from academia and industry to exchange new results related to both traditional and emerging fields of software engineering. This year the conference features FSE-12, a student research forum with posters, an Educators Grant Program including one day of tutorials, and four workshops.

Welcome to SIGSOFT 2004!

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Workshops

Sunday - Monday
October 31 - November 1
9:00 am - 5:30 pm
Plaza I

WOSS '04
Workshop on Self-managed Systems

http://www.cs.cmu.edu/~garlan/woss04/

Organizers:

David Garlan, Carnegie Mellon University, USA
Jeff Kramer, Imperial College London, UK
Alexander L. Wolf, University of Colorado at Boulder, USA

An increasingly important requirement for software-based systems is the ability to adapt themselves at run time to handle such things as resource variability, changing user needs, and system faults. The topic of self-managed systems has been studied in a large number of specific areas, including robotics planning software, control systems, programming language design, software architecture, trustworthy computing, and neural networks.

The goal of this workshop is to bring together researchers and practitioners to discuss the fundamental principles, state of the art, and critical challenges of self-managed systems. Specifically, we intend to focus on the software engineering aspects, including the software languages, techniques and mechanisms that can be used to support dynamic, self-adaptive behavior.

Sunday - Monday
October 31 - November 1
9:00 am - 5:30 pm
Plaza II

SAVCBS '04
Specification and Verification of Component-Based Systems

http://www.cs.iastate.edu/~leavens/SAVCBS/2004/

Organizers:

Mike Barnett, Microsoft Research, USA
Steve Edwards, Virginia Tech, USA
Dimitra Giannakopoulou, RIACS/NASA Ames Research Center, USA
Gary T. Leavens, Iowa State University, USA
Natasha Sharygina, SEI/CMU, USA

SAVCBS is concerned with the application of formal techniques to the specification and verification of component-based systems. Component-based systems are a growing concern for the software engineering community. Specification and reasoning techniques are urgently needed to permit composition of systems from components. Component-based specification and verification is also vital for scaling advanced verification techniques such as extended static analysis and model checking to the size of real systems. The workshop will consider formalization of both functional and non-functional behavior, such as performance or reliability.

Friday
November 5
9:00 am - 5:30 pm
Beach Room

Workshop on Interdisciplinary Software Engineering Research - WISER

http://wiser.co.umist.ac.uk/

Organizers: Nikolay Mehandjiev, UMIST, UK
Keith Bennett, University of Durham, UK
Pearl Brereton, Keele University, UK
David Budgen, Keele University, UK
Paul Layzell, UMIST, UK

WISER aims to formulate a research agenda for addressing the future of software engineering as an interdisciplinary activity. Driven by the spirit of scientific enquiry, the software engineering community should transcend the boundaries of the discipline and take a broader and possibly more radical view about future software engineering techniques, processes and tools. A number of disciplines share common problems with software engineering, and some may have developed answers which are useful for us. Apart from the direct benefit of solving a particular problem, the process of transfer will help us to create a vision of future software engineering by identifying assumptions which might be challenged in an inter-disciplinary context. To achieve this, workshop participants will describe experiences where techniques or approaches from other disciplines were successfully used within software engineering research or practice, and suggest areas where further research may help such an interdisciplinary transfer. Discussions will be supported by an organising Framework classifying existing and potential inter-disciplinary transfers such as cognitive design of representations; financial and economic models; service-based organisational principles; mass-customisation and product lines; and holistic human-centred view of software engineering. Developed through a number of preceding activities, we expect this framework to continue evolving and constitute one of the main outputs of this workshop together with the Proceedings.

Friday
November 5
8:30 am - 6:00 pm
Plaza III

QUantitative TEchniques for SoftWare Agile Processes - QUTE SWAP

http://ra.crema.unimi.it/qute-swap/

Organizers: Michele Marchesi, University of Cagliari, Italy
Giancarlo Succi, University of Bozen-Bolzano, Italy
Ernesto Damiani, University of Milan, Italy
Davide Carboni, CRS4, Italy
Alberto Sillitti, University of Bozen-Bolzano, Italy

Collecting and analyzing software process data can help to control and predict the performance of software development activities, helping software developers to achieve both business and technical objectives. Experience has shown that quantifying the software process operation can improve insight, e.g. allowing assessing the impact of process change on the software products.

On the other hand, the widespread adoption of agile processes and the increasing structural diversity of software development organizations around the world as well as new concerns e.g. about privacy, are driving the need for non-intrusive, cost-effective methods capable to deliver long term success in collecting process data without further increasing the burden of process management. Process data mining techniques are also being investigated aimed at extracting valuable knowledge, capable to improve software products' quality.

This workshop is aimed at highlighting the cutting edge of process data collection and analysis research, fostering information exchange between researchers working on data analysis for agile software process improvement and practitioners interested in exploiting software data collection and analysis techniques as a basis for making process decisions and predicting process performance.

Tutorials

Monday, November 1 Plaza III

T1. Software Engineering Education: Teaching Software Engineering 8:30 am - 12:30 pm

This tutorial will address two important aspects of software engineering education: software engineering curriculum and innovative approaches to teaching software engineering.

Software Engineering Curriculum, Tutors: Tom Reichlmayr and André van der Hoek
This tutorial will use a hands-on approach to presenting methodologies for integrating software engineering into undergraduate computer science curricula. Each tutor will present an overview of the curriculum that has been developed at his institution. Presenters will discuss challenges they faced and their experiences in implementing the curricula. A question/answer period will follow the presentations.

Innovative Approaches to Teaching Software Engineering, Tutor: André van der Hoek
Many aspects of software engineering education are difficult, as we are stuck with the traditional lecture format, necessarily small class projects, and a typical focus on deliverables in those projects. In this tutorial, we will introduce three different techniques that we are investigating to break some of this traditional mold of SE education. We introduce Problems and Programmers, a physical, multi-person card game for group-oriented study of the SW process; SimSE, a graphical simulation environment for individually practicing different aspects of the SW process; and EASEL, a new kind of design editor that is much friendlier for exploration, learning-by-example, and creative expression.

T2. Software Engineering Education: New Concepts in Software Engineering Education 1:30 - 5:30 pm

This tutorial will present in-depth, hands-on discussions of two important concepts in software engineering that are being integrated into software-engineering curricula: agile software development and software testing.

Incorporating Agile Software Development in the Computing Curriculum, Tutor: Tom Reichlmayr
An important learning outcome of a computing curriculum is to prepare students to be productive, contributing members on a software development team. Agile software development activities create opportunities for students to practice collaborative skills critical to successful project teamwork, communication, working with clients to elicit requirements and adhering to a disciplined process that delivers working software on-time. This tutorial will introduce participants to agile methodologies and demonstrate how agile activities can be incorporated into the curriculum to introduce and reinforce good software engineering practices.

Incorporating Software Testing in the Software Engineering Curriculum, Tutor: Cem Kaner
Software testing receives little coverage in computer science curricula. Why? Perhaps because testing instruction so often focuses on basic design (routine application of briefly-defined simple techniques) and vast, boring test documentation. These don't carry the level of intellectual challenge appropriate for university-level instruction. It's more useful to think of software testing as a technical investigation done to expose quality-related information about the product under test. We teach students to be investigators who use tools in the service of their wits. This tutorial presents a few options for organizing testing courses and encourages discussion of spreading testing instruction throughout a smattering of programming and process courses (a strategy I think will fail, but others think will succeed). It also points attendees to assorted free instructional resources.

Bio: Cem Kaner, Center for Software Testing Education & Research, Florida Inst. of Technology
Cem Kaner is a Professor of Software Engineering at the Florida Institute of Technology, and the senior author of "Testing Computer Software" and "Lessons Learned in Software Testing". His lab at Florida Tech is focused on the education of software testers and provides course materials (for free, under a Creative Commons license) at http://www.testingeducation.org/k04/. Along with his academic work, Cem has worked as a programmer, tester, technical writer, human factors analyst, test manager, documentation group manager, software development manager, software development director, independent consultant, and as an attorney with a practice focused on the law of software quality. Cem holds doctorates in law and experimental psychology, with an undergraduate emphasis on mathematics and philosophy.

Tutorial Schedule

8:30-8:45	Opening, Mary Jean Harrold	
8:45-10:00	Software Engineering Curriculum	
10:00-10:30	Break	Plaza Arbor
10:30-12:00	Innovative Approaches to Teaching Software Engineering	
12:00-12:30	Question/Answer Period	
12:30-1:30	Lunch	Bay Pool
1:30-3:00	Incorporating Agile Methods into the Software Engineering Curriculum	
3:00-3:30	Break	Plaza Arbor
3:30-5:00	Incorporating Software Testing into the Software Engineering Curriculum	
5:00-5:30	Question/Answer Period	

Bio: Thomas Reichlmayr, Software Engineering Department, Rochester Institute of Technology
Tom Reichlmayr is an Assistant Professor in the Software Engineering Department at the Rochester Institute of Technology where he designs and teaches courses in introductory software engineering, enterprise application design, requirements engineering and software process. His research interests include integrating agile methodologies and collaborative learning models into the software engineering curriculum. Prior to his appointment at RIT, he worked in the process automation industry as a software engineer for over twenty years.

Bio: André van der Hoek, School of Information and Computer Sciences, University of California, Irvine
André van der Hoek is an Assistant Professor in the Department of Informatics of the Donald Bren School of Information and Computer Sciences, and a faculty member of the Institute for Software Research, both at the University of California, Irvine. He holds a joint B.S. and M.S. degree in Business-Oriented Computer Science from the Erasmus University Rotterdam, the Netherlands and a Ph.D. degree in Computer Science from the University of Colorado at Boulder. He has developed Problems and Programmers, an educational software engineering card game, and SimSE, an educational simulation environment for software processes. He is also the principal designer of the new B.S. in Informatics at the University of California, Irvine.

These tutorials are organized as part of the **Educators Grant Program (EGP)**; they are targeted, but not limited to, EGP participants. The Educator's Grant Program is designed to help increase the participation of women and minorities in software engineering. The EGP program funds faculty from institutions with a large minority or female student enrollment to attend FSE-12 and these two special half-day tutorials. The EGP is part of the Student and Diversity Program, is co-chaired by Mary Jean Harrold, Georgia Tech and Mary Lou Soffa, University of Virginia. Funding for this program was provided by the National Science Foundation.

Student Research Forum

Tuesday, November 2

Terrace Room
6:30 - 8:30 pm

Chris Jensen, UCI

A **Student Research Forum** with **Posters** will be held during an evening **Reception** after the FSE general session on Tuesday, November 2. This Forum provides an opportunity for graduate and undergraduate students attending FSE-12 to present and discuss their research in an informal and interactive session, and to present late-breaking and preliminary results or work-in-progress posters. The Student Research Forum is part of the Student and Diversity Program, and is chaired by Lori Pollock, University of Delaware.

Vladimir Jakobac, USC

Student Research Forum Participants

Rabih Bashroush, Queens University, Belfast; Advisors: Ivor Spence, Kilpartrick Brown
Deriving Product Architectures from an ADLARS Described Reference Architecture using Leopard

Jennifer Bevan, University of California, Santa Cruz and Lijie Zou, University of Waterloo; Advisors: Jim Whitehead, Mike Godfrey
Kenyon: A Common Software Stratigraphy Platform

Aysu Betin-Can, University of California, Santa Barbara; Advisor: Tevfik Bultan
Design for Verification for Concurrent and Distributed Systems

Bob Boyer, University of California, San Diego; Advisor: Bill Griswold
Fulcrum - An Open Implementation Approach to Internet-Scale Context-Aware Publish/Subscribe

Yuetang Deng, Polytechnic University; Advisor: Phyllis Frankl
Testing Web Database Applications

Syahrul Fahmy, University of Manchester Institute of Science and Technology; Advisor: Nikolay Mehandjiev
Software Architecture for Service-based Software: Achieving Ultra Rapid Evolution

Jeff Furlong, Chapman University; Advisor: Atanas Radenski
Overcoming the Subclassing Anomaly via Class Overriding with Object Teams

Omar Garcia, University of Wollongong; Advisor: Peter Eklund
Mining Design Metrics for Quality: Object Oriented Application Frameworks

John Georgas, University of California, Irvine; Advisor: Richard Taylor
Knowledge-based Architectural Adaptation Management

Andrew Hoffman, Denison University; Advisor: Joan Krone
Current Support for RESOLVE: Reusable Software Language with Verification to Support Software Engineering

Idris H. Hsi, Georgia Tech; Advisors: Spencer Rugaber, Colin Potts
Measuring the Conceptual Integrity of Software Using Ontological Excavation

Vladimir Jakobac, University of Southern California; Advisor: Nenad Medvidovic
Pluggable Framework for Program Understanding

Chris Jensen, University of California, Irvine; Advisors: Walt Scacchi, André van der Hoek
Discovery and Modeling of Development Processes in Open Source Communities

Suet Chun Lee, George Mason University; Advisor: David Rine
A User Interface Modeling Approach for Web-based Software Product Lines

Paul Li, Carnegie Mellon University; Advisors: Mary Shaw, Jim Herbsleb
A Common Defect Projection Method for Widely-deployed Production Software Systems

Pradeep Mysore, Indiana University and Purdue University, Indianapolis; Advisor: Rajeev Raje
GridFrame: A Framework for Building Quality Aware Component-based Grid Systems

Tien Nguyen, University of Wisconsin, Milwaukee; Advisor: Ethan Munson
Infrastructures for Development of Object-Oriented Configuration Management Systems

Alexandre Oufimtsev, University College Dublin; Advisor: Liam Murphy
Performance Prediction of EJB-based Systems with Layered Queuing Networks

Mark Preston, University of Manchester Institute of Science and Technology; Advisor: Nikolay Mehandjiev
Intelligent Design for Software Engineering

Vibha Sazawal, University of Washington; Advisor: David Notkin
Design Snippets: Source-Derived Partial Design Representations for Ease of Change

Daniela Schilling, University of Paderborn; Advisor: Wilhelm Schäfer
Verifying Real-Time UML-Designs of Networked Mechatronic Systems

Eddy Sfeir, Chapman University; Advisor: Boyana Norris
A Graphical Environment for Scientific Component Development

Hema Srikanth, North Carolina State University; Advisor: Laurie Williams
Requirements-based Test Case Prioritization

Kevin Viggers, University of Calgary; Advisor: Robert Walker
Declarative Event Patterns

Tao Xie, University of Washington; Advisor: David Notkin
Automated Software Testing with Inferred Program Properties

Guoqing Xu, East China Normal University; Advisor: Zongyuan Yang
JCMP: Linking Architecture with Component Building

Yi Zhang, Georgia Tech; Advisor: Mary Jean Harrold
Detecting Denial of Service Attacks through Static and Dynamic Analysis

FSE-12 Keynotes

Tuesday, November 2, 2004

Alexander L. Wolf, Univ of Lugano, Switzerland and Univ of Colorado at Boulder, USA

"Is Security Engineering Really Just Good Software Engineering?"

Abstract: These days, if you say that you are doing research in the area of computer security you instantly receive attention. Sadly, the same cannot be said of software engineering. But are the two areas really so different? Both seem to be concerned with issues that range from the finely technical to the broadly social and that force us to make difficult tradeoffs among cost, performance, quality, and usability. Both seem to require that we conduct our research in an interdisciplinary context. In the end we realize that fully solving the security problem for ever larger and more complex systems is as intractable as fully solving the traditional software engineering problem. In this talk I will attempt to relate the challenges of security engineering and software engineering, and will argue that security engineering is more of a software engineering problem than many people would like to admit.

Bio: Alexander L. Wolf is a Professor in the Faculty of Informatics at the University of Lugano, Switzerland, and in the Department of Computer Science at the University of Colorado at Boulder, USA. Prior to this he was a Member of the Technical Staff at AT&T Bell Laboratories in Murray Hill, New Jersey. Dr. Wolf is the director of the Computer and Communications Security Center and a faculty affiliate of the Science and Technology Policy Research Center at the University of Colorado. His research interests are in the discovery of principles and development of technologies to support the engineering of large, complex software systems. He has published papers in a variety of areas, including software architecture, software process, and configuration management, and most recently in the areas of security, survivability, dynamic reconfiguration, and content-based networking. Dr. Wolf is currently Chair of ACM SIGSOFT. He serves on the executive committee of the Impact Project and the editorial board of ACM TOSEM. He received his Ph.D. degree in Computer Science from the Univ of Massachusetts at Amherst.

Wednesday, November 3, 2004

Joe Marks, Mitsubishi Electric Research Laboratories (MERL), Cambridge, Massachusetts, USA

"The Usability Problem for Home Appliances: Engineers Caused It, Engineers Can Fix It!"

Abstract: Ordinary people already have great difficulty using the advanced features of digitally enabled household appliances, and the problem grows worse with time as more customization and programming features are added. This usability problem cannot be solved using the tiny displays and limited control buttons typically found on such devices. In this talk I will describe a new type of collaborative interface in which the appliance actively helps the user, especially with complex features that are only used occasionally. This interface provides a consistent and pervasive mechanism for answering the who-what-where-when-why-how questions that often cause users to consult a manual, call a help line, or simply give up. A crucial aspect of the interface architecture is the use of home networking to share a physically large and computationally powerful display among multiple appliances.

Why is this a relevant talk for a software-engineering conference? A contributing factor to the usability crisis is the dominance of engineers in product design at many companies. The development of more-usable devices requires a broader conception of engineering that includes interaction design, artificial intelligence, and human factors — at a minimum. I will describe how these disciplines can complement traditional electrical and software engineering in the context of attempting to solve a commercially significant real-world problem.

Bio: Joe Marks grew up in Dublin, Ireland, before emigrating to the U.S. to attend college. He holds three degrees from Harvard University. His areas of interest include computer graphics, human-computer interaction, and artificial intelligence. He has worked previously at Bolt Beranek and Newman and at Digital's Cambridge Research Laboratory. He is currently the Director of MERL Research. He is the recent past chair of ACM SIGART, the papers chair for SIGGRAPH 2004, and the papers co-chair for Eurographics 2005.

Thursday, November 4, 2004

Nancy Leveson, MIT, SIGSOFT Outstanding Research Award 2004 winner

"Making Embedded Software Reuse Practical and Safe"

Abstract: Reuse of application software in embedded systems has been limited and, in some cases, has led to accidents. In this talk, I will describe the problems and an approach to making reuse practical and safe in this domain.

Bio: Nancy Leveson is a Professor in the MIT Aeronautics and Astronautics Dept. and also a Professor in the MIT Engineering Systems Division. She is a member of the National Academy of Engineering (NAE). Prof. Leveson conducts research on the topics of system safety, software safety, software and system engineering and human-computer interaction. She has served as Editor-in-Chief of IEEE Transactions on Software Engineering. In 1999, she received the ACM Allen Newell Award and in 1995 the AIAA Information Systems Award for "developing the field of software safety and for promoting responsible software and system engineering practices where life and property are at stake." She is author of a book, "Safeware: System Safety and Computers", published by Addison-Wesley.

FSE-12 Program

Tuesday, November 2

8:00 **Registration and Continental Breakfast** — **Plaza Arbor (each day)**

8:45 - 9:00 **Welcome** — **Plaza Ballroom (all sessions)**
Richard N. Taylor, General Chair, University of California, Irvine
Matthew Dwyer, Program Chair, University of Nebraska-Lincoln

9:00 - 10:30 **Keynote: Is Security Engineering Really Just Good Software Engineering?**
Alexander L. Wolf, University of Lugano and University of Colorado at Boulder

10:30 - 11:00 **Break** — **Plaza Arbor (all breaks)**

11:00 - 12:30 **Session 1: Program Analysis**
Chair: Mary Jean Harrold, Georgia Tech

Resolving Uncertainties During Trace Analysis
Alexander Egyed, Teknowledge Corporation

Automating Comprehensive Safety Analysis of Concurrent Programs Using VeriSoft and TXL
Juergen Dingel and Hingzhi Liang, Queen’s University

Efficient Incremental Algorithms for Dynamic Detection of Likely Invariants
Jeff Perkins and Michael Ernst, Massachusetts Institute of Technology

12:30 - 2:00 **Lunch** — **Plaza Arbor (all lunches)**

2:00 - 3:30 **Session 2: Modeling and Requirements**
Chair: Jo Atlee, University of Waterloo

System Architecture: the Context for Scenario-based Model Synthesis
Sebastian Uchitel, Robert Chatley, Jeff Kramer and Jeff Magee, Imperial College London

Merging Partial Behavioural Models
Sebastian Uchitel, Imperial College London and Marsha Chechik, University of Toronto

Reasoning about Partial Goal Satisfaction for Requirements and Design Engineering
Emmanuel Letier and Axel van Lamsweerde, Université Catholique de Louvain

3:30 - 4:00 **Break**

4:00 - 5:30 **Session 3: Error Explanation**
Chair: Willem C. Visser, NASA Ames Research Center

PSE: Explaining Program Failures via Postmortem Static Analysis
Roman Manevich, Tel Aviv University; Manu Sridharan, University of California, Berkeley; Stephen Adams, Manuvir Das and Zhe Yang, Center for Software Excellence, Microsoft Corporation

Explaining Abstract Counterexamples
Sagar Chaki, Alex Groce, Carnegie Mellon University; and Ofer Strichman, Technion, Haifa

Correlation Exploitation in Error Ranking
Ted Kremenek, Ken Ashcraft, Junfeng Yang and Dawson Engler, Stanford University

5:30 - 6:30 **SIGSOFT General Meeting** — **Plaza Ballroom**

6:30 - 8:30 **Student Research Forum with Posters and Reception** — **Terrace Room**

Wednesday, November 3

8:00 **Registration and Continental Breakfast**

9:00 - 10:30 **Keynote: The Usability Problem for Home Appliances: Engineers Caused It, Engineers Can Fix It!**
Joe Marks, Director, Mitsubishi Electric Research Laboratories, Cambridge

10:30 - 11:00 **Break**

11:00 - 12:30 **Session 4: Safety and Security**
Chair: David Rosenblum, University College London

Testing Static Analysis Tools Using Exploitable Buffer Overflows From Open Source Code
Misha Zitser, D. E. Shaw Group; Tim Leek and Richard Lippman, MIT Lincoln Laboratory

Engineering Human Trust in Mobile System Collaborations
Licia Capra, University College London

An Efficient and Backwards-Compatible Transformation to Ensure Memory Safety of C Programs
Wei Xu, Daniel DuVarney and R. Sekar, Stony Brook University

FSE-12 Program

12:30 - 2:00 **Lunch**

2:00 - 4:00 **Session 5: Aspects**
Chair: Gregor Kiczales, University of British Columbia

Variability Management with Feature-Oriented Programming and Aspects
Mira Mezini and Klaus Ostermann, Darmstadt University of Technology

Verifying Aspect Advice Modularly
Shriram Krisnamurthi, Brown University; Kathi Fisler, WPI; and Michael Greenberg, Brown University

A Classification System and Analysis for Aspect-Oriented Programs
Martin Rinard, Alexandru Salcianu and Suhabe Bugrara, Massachusetts Institute of Technology

Implementing Protocols via Declarative Event Patterns
Robert Walker and Kevin Viggers, University of Calgary

General session adjourn for the day.

4:30 - 6:00 **Student Mixer** **Plaza Arbor**

Thursday, November 4

8:00 **Registration and Continental Breakfast**

9:00 - 10:30 **Keynote: Making Embedded Software Reuse Practical and Safe**
Nancy Leveson, Massachusetts Institute of Technology, SIGSOFT Outstanding Research Award winner

10:30 - 11:00 **Break**

11:00 - 12:30 **Session 6: Verification**
Chair: Axel van Lamsweerde, Université Catholique de Louvain

Modular Design and Verification of Component-Based Mechatronic Systems with Online-Reconfiguration
Holger Giese, Sven Burmester, Wilhelm Schäfer and Oliver Oberschelp, University of Paderborn

A Type System for Object Models
Jonathan Edwards, Daniel Jackson and Emina Torlak, Massachusetts Institute of Technology

Heuristic-Guided Counterexample Search in FLAVERS
Jianbin Tan, George Avrunin, Lori Clarke, Shlomo Zilberstein, University of Massachusetts; and Stefan Leue, University of Konstanz

12:30 - 2:00 **Lunch**

2:00 - 3:30 **Session 7: Development Support**
Chair: Shriram Krishnamurthi, Brown University

Relevancy Based Semantic Interoperation of Reuse Repositories
Ying Pan, Peking University; Lei Wang, Tsinghua University; Lu Zhang, Bing Xie and Fuqing Yang, Peking University

How a Good Software Practice Thwarts Collaboration -- The Multiple Roles of APIs in Software Development
Cleidson de Souza, Universidade Federal do Pará and University of California, Irvine; David Redmiles, University of California, Irvine; Li-Te Cheng, David Millen and John Patterson, IBM T. J. Watson Research Center

Refining Code-Design Mapping with Flow Analysis
Xiaofang Zhang, Michal Young and John Lasseter, University of Oregon

3:30 - 4:00 **Break**

4:00 - 5:30 **Session 8: Testing and Reliability**
Chair: Mauro Pezzé, Universita' di Milano-Bicocca

Scaling Regression Testing to Large Software Systems
Alessandro Orso, Nanjuan Shi and Mary Jean Harrold, Georgia Institute of Technology

Using a SQL Coverage Measurement for Testing Database Applications
Maria Jose Suarez-Cabal and Javier Tuya, Universidad de Oviedo

Empirical Evaluation of Defect Projection Models for Widely-deployed Production Software Systems
Paul Li, Mary Shaw, Jim Herbsleb, Carnegie Mellon University; Bonnie Ray and P. Santhanam, IBM T.J. Watson Research Center

5:30 **FSE-12 Close and ESEC/FSE 2005 Preview**

For ESEC/FSE 2005 information, visit http://esecfse05.di.fct.unl.pt/

Conference at a Glance

	Sun 10/31		Mon 11/1			Tue 11/2		Wed 11/3		Thu 11/4	Fri 11/5			Sat 11/6	Sun 11/7
8:00						Registration, Continental Breakfast									ICSE 2005 Org.
					Tutorial 1	FSE-12* Keynote						QUTE-SWAP	ICSE 2005 PC	ICSE 2005 PC	
9:00	WOSS	SAVCBS	WOSS	SAVCBS				FSE-12 Keynote		FSE-12 Keynote	WISER				
10:00															
	Break		Break			Break		Break		Break	Break		Break	Break	
11:00						Session 1		Session 4		Session 6		Break			
12:00															
	Lunch		Lunch		Lunch	Lunch	SIGSOFT Executive Com.	Lunch		Lunch	Lunch		Lunch	Lunch	
1:00												Lunch			
					Tutorial 2										
2:00						Session 2		Session 5		Session 7					
3:00					Break										
	Break		Break			Break				Break	Break		Break	Break	
4:00						Session 3			ICSE 2006 Org.	Session 8		Break			
								Student Mixer							
5:00															
						SIGSOFT General Meeting									
6:00								SIGSOFT 2004 Organizers + FSE-12 PC		ICSE Steering Committee					
						Student Research Forum Reception with Posters									
7:00															
8:00															
9:00															
...															
...															

Locations

Sun 10/31	**Lunch**: The Garden
Mon 11/1	**Lunch**: Bay Pool I
Tue 11/2	**SIGSOFT Executive Committee**: Beach Room
Wed 11/3	**ICSE 2006 Organizers**: Harbor Room
Wed 11/3	**SIGSOFT 2004 Organizers + FSE-12 PC**: The Garden
Thu 11/4	**ESEC Steering Committee**: Lagoon Room, 4:00 - 6:00 pm
Thu 11/4	**ICSE Steering Committee**: Garden Room I
Fri-Sat 11/5-6	**Lunch**: Bay Pool I
Fri-Sat 11/5-6	**ICSE PC**: Plaza I & II
Sun 11/7	**ICSE 2005 Organizers**: Lido Room I

Notes

* 8:45 a.m. start for **FSE-12** on Tuesday 11/2.

Continental breakfast at 8:00 am each day, except Sun 11/7.

No registration on Saturday 11/6.

Workshop and collocated event times are approximate. Please check individual schedules.

Additional locations are indicated in the Final Program.