

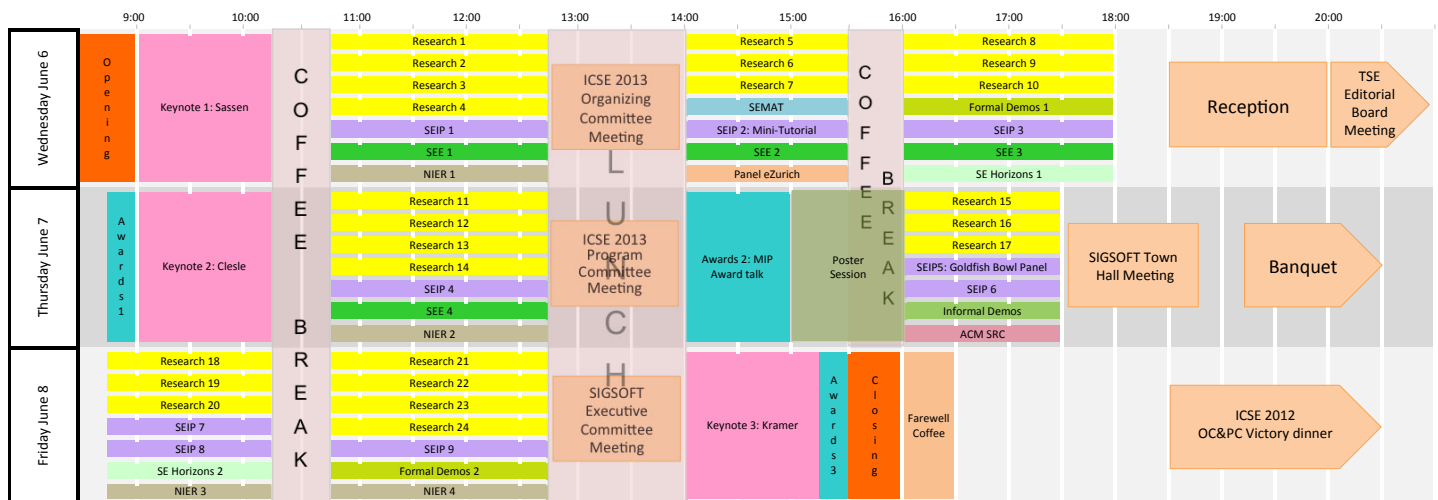


ICSE 2012 – Preliminary Program

Version 1.2 of 2012-03-22

ICSE 2012 at-a-Glance

Main Conference (Wednesday June 6 – Friday June 8)



Please note that this is a *preliminary* program. We will add information as it becomes available and also reserve the right to change the structure and order of sessions if that should become necessary.

Pre- and Post-Conference Events (Sat June 2 – Tue June 5 and Sat June 9)

	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	
Saturday June 2	MSR - Working Conference on Mining Software Repositories										
	ICSSP - International Conference on Software and System Process										
	W1 - AST: Workshop on Automation of Software Test										
	W2 - MiSE: Workshop on Modelling in Software Engineering										
	W3 - CHASE: Workshop on Co-operative and Human Aspects of Software Engineering										
	W5 - FormSERA: Workshop on Formal Methods in Software Engineering: Rigorous and Agile Approaches										
	W6 - SESENA: Workshop on Software Engineering for Sensor Network Applications										
Sunday June 3	MSR - Working Conference on Mining Software Repositories										
	ICSSP - International Conference on Software and System Process										
	W1 - AST: Workshop on Automation of Software Test										
	W2 - MiSE: Workshop on Modelling in Software Engineering										
	W7 - Greens: Workshop on Green and Sustainable Software										
	W8 - HotSWUP: Workshop on Hot Topics in Software Upgrades										
	W9 - SE-SmartGrid: Workshop on Software Engineering Challenges for the Smart Grid										
	W10 - TOPI: Workshop on Developing Tools as PLUg-ins										
	W11 - WETSoM: Workshop on Emerging Trends in Software Metrics										
								Symposium for Carlo Ghezzi			
Monday June 4	SEAMS - International Symposium on Software Engineering for Adaptive and Self-Managing Systems										
	DS - Doctoral Symposium										
	F1 - Effective Experimental Design and Statistical Analysis of Software Engineering Data										
	F2 - Self-Organizing Teams										
	H1 - Technical Debt										
	H2 - Class to Cubicle										
	H3 - Multicore SE										
	H4 - SOA Migration in Practice										
	MBE in Enterprise Scope										
	W12 - SEHC: Workshop on Software Engineering in Health Care										
	W13 - IWSC: Workshop on Software Clones										
	W14 - PESOS: Workshop on Principles of Engineering Service-Oriented Systems										
	W15 - PLEASE: Workshop on Product Line Approaches in Software Engineering										
W16 - RSSE: Workshop on Recommendation Systems for Software Engineering											
W17 - UsARE: Workshop on Usability and Accessibility focused Requirements Engineering											
Tuesday June 5	SEAMS - International Symposium on Software Engineering for Adaptive and Self-Managing Systems										
	NFS - New Faculty Symposium										
	F3 - Wolf Pack Programming Workshop - Real Time Collaboration hands-on Experience										
	F4 - Domain Specific Language Design										
	H5 - Ethnography										
	H6 - Mining SE Data										
	B3 - Text retrieval										
	B4 - Symb Debug										
	B1 - ML for Empir SE										
	B2 - SE & privacy										
	B5 - License compl										
	B6 - Release Engin										
	W12 - SEHC: Workshop on Software Engineering in Health Care										
W18 - MTD: Workshop on Managing Technical Debt											
W19 - RAISE: Workshop on Realizing AI Synergies in Software Engineering											
W20 - SUITE: Workshop on Search-Driven Development: Users, Infrastructure, Tools, and Evaluation											
W21 - USER: Workshop on User evaluation for Software Engineering Researchers											
W22 - S-Cube: European Software Services and Systems Research - Results and Challenges											
Saturday June 9	W4 - CTGSD: Collaborative Teaching of Globally Distributed Software Development: Community Building Workshop										
	W23 - EduRex: Workshop on Software Engineering Education based on Real-World Experiences										
	W24 - GAS: Workshop on Games and Software Engineering: Realizing User Engagement with Game Engineering Techniqu										
	W25 - SEES: Workshop on Software Engineering for Embedded Systems										
	W26 - WEH: Workshop on Exception Handling										
	FSE PC Meeting										
MODELS PB Meeting											
Sun June 10	FSE PC Meeting										
	MODELS PB Meeting										

ICSE Steering Committee Meeting

Main Conference Program

Wednesday June 6 8:30 - 10:15

Conference Opening (Wed Jun 6 8:30 - 9:00)

Keynote 1 (Wed Jun 6 9:00 - 10:15)

Saskia Sassen (Columbia University, USA)

Digital Formations of the Powerful and the Powerless

Wednesday June 6 10:45 - 12:45

Technical Research Papers

Research Session 1: Fault Handling (Wed Jun 6 10:45 - 12:45)

A Systematic Study of Automated Program Repair: Fixing 55 out of 105 Bugs for \$8 Each
Claire Le Goues, Michael Dewey-Vogt, Stephanie Forrest, and Westley Weimer (*University of Virginia, USA; University of New Mexico, USA*)

Where Should the Bugs be Fixed? - More Accurate Information Retrieval-Based Bug Localization Based on Bug Reports

Jian Zhou, Hongyu Zhang, and David Lo (*Tsinghua University, China; Singapore Management University, Singapore*)

Developer Prioritization in Bug Repositories

Jifeng Xuan, He Jiang, Zhilei Ren, and Weiqin Zou (*Dalian University of Technology, China*)

WHOSEFAULT: Automatic Developer-to-Fault Assignment Through Fault-Localization

Francisco Servant and James A. Jones (*UC Irvine, USA*)

Research Session 2: Code Generation and Recovery (Wed Jun 6 10:45 - 12:45)

Recovering Traceability Links Between an API and its Learning Resources

Barthelemy Dagenais and Martin Robillard (*McGill University, Canada*)

Generating Range Fixes for Software Configuration

Yingfei Xiong, Arnaud Hubaux, Steven She, and Krzysztof Czarnecki (*University of Waterloo, Canada; University of Namur, Belgium*)

Graph-Based Pattern-Oriented, Context-Sensitive Source Code Completion

Anh Nguyen, Tung Nguyen, Hoan Nguyen, Ahmed Tamrawi, Hung Nguyen, Jafar Al-Kofahi, and Tien Nguyen (*Iowa State University, USA*)

Automatic Input Rectification

Fan Long, Vijay Ganesh, Michael Carbin, Stelios Sidiroglou, and Martin Rinard (*MIT, USA*)

Research Session 3: Empirical Studies of Development (Wed Jun 6 10:45 - 12:45)

Overcoming the Challenges in Cost Estimation for Distributed Software Projects

Narayan Ramasubbu and Rajesh Balan (*Singapore Management University, Singapore*)

Characterizing Logging Practices in Open-Source Software

Ding Yuan, Soyeon Park, and Yuanyuan Zhou (*University of Illinois at Urbana Champaign, USA; UC San Diego, USA*)

The Impacts of Software Process Improvement on Developers: A Systematic Review

Mathieu Lavallée and Pierre Robillard (*École Polytechnique de Montréal, Canada*)

Combining Functional and Imperative Programming for Multicore Software: An Empirical Study Evaluating Scala and Java

Victor Pankratius, Felix Schmidt, and Gilda Garreton (*Karlsruhe Institute of Technology, Germany; Oracle Labs, USA*)

Research Session 4: Performance Analysis (Wed Jun 6 10:45 - 12:45)

Uncovering Performance Problems in Java Applications with Reference Propagation Profiling

Dacong Yan, Guoqing Xu, and Atanas Rountev (*Ohio State University, USA; UC Irvine, USA*)

Performance Debugging in the Large via Mining Millions of Stack Traces

Shi Han, Yingnong Dang, Song Ge, Dongmei Zhang, and Tao Xie (*Microsoft Research Asia, China; North Carolina State University, USA*)

Automatically Finding Performance Problems with Feedback-Directed Learning Software Testing

Mark Grechanik, Chen Fu, and Qing Xie (*Accenture Laboratories, USA*)

Predicting Performance via Automated Feature-Interaction Detection

Norbert Siegmund, Sergiy Kolesnikov, Christian Kästner, Sven Apel, Don Batory, Marko Rosenmüller, and Gunter Saake (*University of Magdeburg, Germany; University of Passau, Germany; Philipps University of Marburg, Germany; University of Texas, USA*)

Software Engineering in Practice Track

SEIP Session 1: Distributed Systems (Wed Jun 6 10:45 - 12:45)

Invited Talk:

Towards a Federated Cloud Ecosystem

Clovis Chapman (*Dell, Ireland*)

Specification Patterns from Research to Industry: A Case Study in Service-Based Applications

Domenico Bianculli, Carlo Ghezzi, Cesare Pautasso, and Patrick Senti (*University of Lugano, Switzerland; Politecnico di Milano, Italy; Credit Suisse AG, Switzerland*)

Methodology for Migration of Active Process Instances in a Global Large Scaled BPM Environment in Credit Suisse's SOA Landscape

Tarmo Ploom, Stefan Scheit, and Axel Glaser (*Credit Suisse, Switzerland*)

Using Knowledge Elicitation to Improve Web Effort Estimation: Lessons from Six Industrial Case Studies

Emilia Mendes (*Zayed University, United Arab Emirates*)

Software Engineering Education Track

SEE Track Opening Remarks (Wed Jun 6 10:45 - 11:15)

Jochen Ludewig and Hausi Müller

SEE Session 1: The Role of Software Projects in Software Engineering Education (Wed Jun 6 11:15 - 12:45)

Chair: Kurt Schneider

Teaching Software Engineering and Software Project Management: An Integrated and Practical Approach

Gabriele Bavota, Andrea De Lucia, Fausto Fasano, Rocco Oliveto, and Carlo Zottoli (*University of Salerno, Italy; University of Molise, Italy*)

Teaching Collaborative Software Development: A Case Study

Terhi Kilamo, Imed Hammouda, and Mohamed Amine Chatti (*Tampere University of Technology, Finland; RWTH Aachen University, Germany*)

Using Continuous Integration of Code and Content to Teach Software Engineering with Limited Resources

Jörn Guy Süß and William Billingsley (*University of Queensland, Australia*)**New Ideas and Emerging Results Track****NIER Session 1: NIER in Support of Software Engineers (Wed Jun 6 10:45 - 12:45)**Automatically Detecting Developer Activities and Problems in Software Development Work
Tobias Roehm and Walid Maalej (*TU Munich, Germany*)

Software Process Improvement Through the Identification and Removal of Project-Level Knowledge Flow Obstacles

Susan Mitchell and Carolyn B. Seaman (*University of Maryland in Baltimore County, USA*)

Symbiotic General-Purpose and Domain-Specific Languages

Colin Atkinson, Ralph Gerbig, and Bastian Kennel (*University of Mannheim, Germany*)

Evaluating the Specificity of Text Retrieval Queries to Support Software Engineering Tasks

Sonia Haiduc, Gabriele Bavota, Rocco Oliveto, Andrian Marcus, and Andrea De Lucia (*Wayne State University, USA; University of Salerno, Italy; University of Molise, Italy*)

Co-adapting Human Collaborations and Software Architectures

Christoph Dorn and Richard N. Taylor (*UC Irvine, USA*)

Release Engineering Practices and Pitfalls

Hyrum K. Wright and Dewayne E. Perry (*University of Texas at Austin, USA*)

Augmented Intelligence - The New 'AI' - Unleashing Human Capabilities in Knowledge Work

James M. Corrigan (*Stony Brook University, USA*)**Wednesday June 6 14:00 - 15:30****Technical Research Papers****Research Session 5: Defect Prediction (Wed Jun 6 14:00 - 15:30)**

Sound Empirical Evidence in Software Testing

Gordon Fraser and Andrea Arcuri (*Saarland University, Germany; Simula Research Laboratory, Norway*)

Privacy and Utility for Defect Prediction: Experiments with MORPH

Fayola Peters and Tim Menzies (*West Virginia University, USA*)

Bug Prediction Based on Fine-Grained Module Histories

Hideaki Hata, Osamu Mizuno, and Tohru Kikuno (*Osaka University, Japan; Kyoto Institute of Technology, Japan*)

Research Session 6: Refactoring (Wed Jun 6 14:00 - 15:30)

Reconciling Manual and Automatic Refactoring

Xi Ge, Quinton DuBose, and Emerson Murphy-Hill (*North Carolina State University, USA*)

WitchDoctor: IDE Support for Real-Time Auto-Completion of Refactorings

Stephen Foster, William G. Griswold, and Sorin Lerner (*UC San Diego, USA*)

Use, Disuse, and Misuse of Automated Refactorings

Mohsen Vakilian, Nicholas Chen, Stas Negara, Balaji Ambresh Rajkumar, Brian P. Bailey, and Ralph E. Johnson (*University of Illinois at Urbana-Champaign, USA*)

Research Session 7: Human Aspects of Development (Wed Jun 6 14:00 - 15:30)

Test Confessions: A Study of Testing Practices for Plug-In Systems

Michaela Greiler, Arie van Deursen, and Margaret-Anne Storey (*Delft University of Technology, Netherlands; University of Victoria, Canada*)

How Do Industry Developers Comprehend Software?

Tobias Roehm, Rebecca Tiarks, Rainer Koschke, and Walid Maalej (*TU Munich, Germany; University of Bremen, Germany*)

Asking and Answering Questions About Unfamiliar APIs: An Exploratory Study

Ekwa Duala-Ekoko and Martin Robillard (*McGill University, Canada*)

Special Session on Semat

Refounding Software Engineering: The Semat Initiative (Wed Jun 6 14:00 - 15:30)

Chair: Mira Kajko-Mattsson (*KTH Royal Institute of Technology, Sweden*)

Introduction to Semat

Ivar Jacobson (*IJI, Sweden*)

The Semat Kernel and its Elements

Ian Spence (*IJI, UK*)

The Semat language

Michael Striewe (*University of Duisburg-Essen, Germany*)

Evaluation of the Semat Kernel and Language

Brian Elvesæter (*SINTEF, Norway*)

Identifying Semat Differentiators

Paul McMahon (*PEM Systems, USA*)

The Three Year Vision of Semat

Ivar Jacobson (*IJI, Sweden*)

Panel debate

Panelists: Presenters plus Shihong Huang (*Florida Atlantic University, USA*), Arne Berre (*SINTEF, Norway*), Michael Goedicke (*University of Duisburg-Essen, Germany*), Bruce MacIsaac (*IBM, USA*), Ed Seymour (*Fujitsu, UK*)

Software Engineering in Practice Track

SEIP Session 2: Mini-Tutorial (Wed Jun 6 14:00 - 15:30)

Software Analytics in Practice: A Mini Tutorial

Dongmei Zhang and Tao Xie (*Microsoft Research Asia, China; North Carolina State University, USA*)

Software Engineering Education Track

SEE Session 2: Aspects of Teaching Software Engineering (Wed Jun 6 14:00 - 15:30)

Chair: Martin Naedele

Stages in Teaching Software Testing

Anthony Cowling (*University of Sheffield, UK*)

Integrating Tools and Frameworks in Undergraduate Software Engineering Curriculum

Christopher Fuhrman, Roger Champagne, and Alain April (*University of Québec, Canada*)

What Scope is There for Adopting Evidence-Informed Teaching in Software Engineering?

David Budgen, Sarah Drummond, Pearl Brereton, and Nikki Holland (*Durham University, UK; Keele University, UK*)

Panel

Software for a Sustainable City: the eZurich Initiative (Wed Jun 6 14:00 - 15:30)

Moderator: Abraham Bernstein (*University of Zurich, Switzerland*)

Panelists:

Dr. Thomas Flatt, CEO Abraxas, Switzerland

Dr. Andrej Vckovski, CEO Netcetera, Switzerland

David Nüscheler, VP, CTO Customer Experience Management Division, Adobe, Switzerland

More panelists TBA

Wednesday June 6 16:00 - 18:00

Technical Research Papers

Research Session 8: Bug Detection (Wed Jun 6 16:00 - 18:00)

Automated Repair of HTML Generation Errors in PHP Applications Using String Constraint Solving
Hesam Samimi, Max Schäfer, Shay Artzi, Todd Millstein, Frank Tip, and Laurie Hendren (*UC Los Angeles, USA; IBM Research, USA; IBM, USA; McGill University, Canada*)

Leveraging Test Generation and Specification Mining for Automated Bug Detection Without False Positives

Michael Pradel and Thomas Gross (*ETH Zurich, Switzerland*)

Axis: Automatically Fixing Atomicity Violations Through Solving Control Constraints

Peng Liu and Charles Zhang (*Hong Kong University of Science and Technology, China*)

CBCD: Cloned Buggy Code Detector

Jingyue Li and Michael D. Ernst (*DNV Research and Innovation, Norway; University of Washington, USA*)

Research Session 9: Multiversion Software (Wed Jun 6 16:00 - 18:00)**Crosscutting Revision Control System**

Sagi Ifrah and David Lorenz (*Open University, Israel*)

Where Does This Code Come from and Where Does It Go? - Integrated Code History Tracker for Open Source Systems

Katsuro Inoue, Yusuke Sasaki, Pei Xia, and Yuki Manabe (*Osaka University, Japan*)

Improving Early Detection of Software Merge Conflicts

Mário Guimarães and António Silva (*Technical University of Lisbon, Portugal*)

A History-Based Matching Approach to Identification of Framework Evolution

Sichen Meng, Xiaoyin Wang, Lu Zhang, and Hong Mei (*Peking University, China*)

Research Session 10: Similarity and Classification (Wed Jun 6 16:00 - 18:00)**Detecting Similar Software Applications**

Collin McMillan, Mark Grechanik, and Denys Poshyvanyk (*College of William and Mary, USA; Accenture Technology Labs, USA*)

Content Classification of Development Emails

Alberto Bacchelli, Tommaso Dal Sasso, Marco D'Ambros, and Michele Lanza (*University of Lugano, Switzerland*)

Identifying Linux Bug Fixing Patches

Yuan Tian, Julia Lawall, and David Lo (*Singapore Management University, Singapore; Zhejiang University, China; INRIA/LIP6, France*)

Active Refinement of Clone Anomaly Reports

Lucia Lucia, David Lo, Lingxiao Jiang, and Aditya Budi (*Singapore Management University, Singapore*)

Formal Research Demonstrations Track**Formal Demos Session 1 (Wed Jun 6 16:00 - 18:00)****Facilitating Communication Between Engineers with CARES**

Anja Guzzi and Andrew Begel (*Delft University of Technology, Netherlands; Microsoft Research, USA*)

Interactive Refinement of Combinatorial Test Plans

Itai Segall and Rachel Tzoref-Brill (*IBM Research, Israel*)

TraceLab: An Experimental Workbench for Equipping Researchers to Innovate, Synthesize, and Comparatively Evaluate Traceability Solutions

Ed Keenan, Adam Czauderna, Greg Leach, Jane Cleland-Huang, Yonghee Shin, Malcom Gethers, Denys Poshyvanyk, Jonathan Maletic, Jane Huffman Hayes, and Alex Dekhtyar (*DePaul University, USA; College of William and Mary, USA; Kent State University, USA; University of Kentucky, USA; CalPoly, USA*)

Specification Engineering and Modular Verification Using a Web-Integrated Verifying Compiler

Charles Cook, Heather Harton, Hampton Smith, and Murali Sitaraman (*Clemson University, USA*)

Writing Dynamic Service Orchestrations with DSOL

Leandro Sales Pinto, Gianpaolo Cugola, and Carlo Ghezzi (*Politecnico di Milano, Italy*)

MASH: A Tool for End-User Plug-In Composition

Leonardo Mariani and Fabrizio Pastore (*University of Milano Bicocca, Italy*)

Detection and Renaming Tool for Cross-Language Program Entities in Dynamic Web Applications

Hung Viet Nguyen, Hoan Anh Nguyen, Tung Thanh Nguyen, and Tien Nguyen (*Iowa State University, USA*)

MDSheet: A Framework for Model-Driven Spreadsheet Engineering

Jácome Cunha, João Paulo Fernandes, Jorge Mendes, and João Saraiva (*Universidade do Minho, Portugal*)

Software Engineering in Practice Track

SEIP Session 3: Invited industrial experts (Wed Jun 6 16:00 - 18:00)

Software as an Engineering Material: How the Affordances of Programming Have Changed and what to Do about It

Keith Braithwaite (*Zühlke, UK*)

Software Architecture - What Does It Mean in Industry?

Eberhard Wolff (*adesso, Germany*)

How Software Engineering Can Benefit from Traditional Industries - A Practical Experience Report

Tom Sprenger (*AdNovum, Switzerland*)

Software Engineering Education Track

SEE Session 3: Software Engineering Education in Industry (Wed Jun 6 16:00 - 18:00)

Chair: Grace Lewis

FOCUS: An Adaptation of a SWEBOK-Based Curriculum for Industry Requirements

Ganesh Samarthiyam, Girish Suryanarayana, Arbind Kumar Gupta, and Raghu Nambiar (*Siemens Ltd., India*)

Fishbowl Panel:

Do we need to Change Software Engineering Curricula for the Challenges of an Instrumented and Interconnected World?

Moderator: Hausi Müller

Software Engineering Horizons Track

SE Horizons Session 1 (Wed Jun 6 16:00 - 18:00)

In this track, distinguished invited experts will talk about Software Engineering issues in neighbouring fields and specific problem areas, such as Green Computing, Simulation, Scientific Computing, HCI, or robotics.

See the description of this track on page 24 for more details.

Thursday June 7 8:45 - 10:15

Awards Session 1 (Thu Jun 7 8:45 - 9:00)

Keynote 2 (Thu Jun 7 9:00 - 10:15)

Frank-Dieter Clesle (SAP, Germany)

Supporting Sustainability with Software – An Industrial Perspective

Thursday June 7 10:45 - 12:45

Technical Research Papers

Research Session 11: Analysis for Evolution (Thu Jun 7 10:45 - 12:45)

Automated Analysis of CSS Rules to Support Style Maintenance

Ali Mesbah and Shabnam Mirshokraie (*University of British Columbia, Canada*)

Graph-Based Analysis and Prediction for Software Evolution

Pamela Bhattacharya, Marios Iliofotou, Iulian Neamtiu, and Michalis Faloutsos (*UC Riverside, USA*)

Integrated Impact Analysis for Managing Software Changes

Malcom Gethers, Bogdan Dit, Huzefa Kagdi, and Denys Poshyvanyk (*College of William and Mary, USA; Wichita State University, USA*)

Detecting and Visualizing Inter-worksheet Smells in Spreadsheets

Felienne Hermans, Martin Pinzger, and Arie van Deursen (*Delft University of Technology, Netherlands*)

Research Session 12: Debugging (Thu Jun 7 10:45 - 12:45)

An Empirical Study About the Effectiveness of Debugging When Random Test Cases are Used

Mariano Ceccato, Alessandro Marchetto, Leonardo Mariani, Cu D. Nguyen, and Paolo Tonella (*Fondazione Bruno Kessler, Italy; University of Milano, Italy*)

Reducing Confounding Bias in Predicate-Level Statistical Debugging Metrics

Ross Gore and Paul Reynolds, Jr. (*University of Virginia, USA*)

BugRedux: Reproducing Field Failures for In-house Debugging

Wei Jin and Alessandro Orso (*Georgia Tech, USA*)

Object-Centric Debugging

Jorge Ressa, Alexandre Bergel, and Oscar Nierstrasz (*University of Bern, Switzerland; University of Chile, Chile*)

Research Session 13: Human Aspects of Process (Thu Jun 7 10:45 - 12:45)

Disengagement in Pair Programming: Does it Matter?

Laura Plonka, Helen Sharp, and Janet van der Linden (*Open University, UK*)

Ambient Awareness of Build Status in Collocated Software Teams

John Downs, Beryl Plimmer, and John Hosking (*University of Melbourne, Australia; University of Auckland, New Zealand; Australian National University, Australia*)

What Make Long Term Contributors: Willingness and Opportunity in OSS Community
Minghui Zhou and Audris Mockus (*Peking University, China; Key Laboratory of High Confidence Software Technologies, China; Avaya Labs Research, USA*)

Development of Auxiliary Functions: Should You be Agile? An Empirical Assessment of Pair Programming and Test-First Programming
Otavio Lemos, Fabiano Ferrari, Fabio Silveira, and Alessandro Garcia (*UNIFESP, Brazil; UFSCar, Brazil; PUC-Rio, Brazil*)

Research Session 14: Models (Thu Jun 7 10:45 - 12:45)

Maintaining Invariant Traceability Through Bidirectional Transformations
Yijun Yu, Yu Lin, Zhenjiang Hu, Soichiro Hidaka, Kato Hiroyuki, and Lionel Montrieux (*Open University, UK; University of Illinois at Urbana Champaign, USA; National Institute of Informatics, Japan*)

Slicing MATLAB Simulink Models
Robert Reicherdt and Sabine Glesner (*TU Berlin, Germany*)

Partial Evaluation of Model Transformations
Ali Razavi and Kostas Kontogiannis (*University of Waterloo, Canada; National Technical University of Athens, Greece*)

Partial Models: Towards Modeling and Reasoning with Uncertainty
Michalis Famelis, Rick Salay, and Marsha Chechik (*University of Toronto, Canada*)

Software Engineering in Practice Track

SEIP Session 4: Formal Methods (Thu Jun 7 10:45 - 12:45)

Invited Talk:
Ten Years of Automated Code Analysis at Microsoft
Wolfram Schulte (*Microsoft, USA*)

Large-Scale Formal Verification in Practice: A Process Perspective
June Andronick, Ross Jeffery, Gerwin Klein, Rafal Kolanski, Mark Staples, He Zhang, and Liming Zhu (*NICTA, Australia*)

Constructing Parser for Industrial Software Specifications Containing Formal and Natural Language Description
Futoshi Iwama, Taiga Nakamura, and Hironori Takeuchi (*IBM, Japan*)

Formal Correctness, Safety, Dependability, and Performance Analysis of a Satellite
Marie-Aude Esteve, Joost-Pieter Katoen, Viet Yen Nguyen, Bart Postma, and Yuri Yushtein (*European Space Agency, Netherlands; RWTH Aachen University, Germany; University of Twente, Netherlands*)

Software Engineering Education Track

SEE Session 4: Teaching Distributed Software Engineering (Thu Jun 7 10:45 - 12:30)

Chair: Richard LeBlanc

Ten Tips to Succeed in Global Software Engineering Education
Ivica Crnković, Ivana Bosnić, and Mario Žagar (*Mälardalen University, Sweden; University of Zagreb, Croatia*)

Collaboration Patterns in Distributed Software Development Projects

Igor Čavrak, Marin Orlić, and Ivica Crnković (*University of Zagreb, Croatia; Mälardalen University, Sweden*)

Improving PSP Education by Pairing: An Empirical Study

Guoping Rong, He Zhang, Mingjuan Xie, and Dong Shao (*Nanjing University, China; University of New South Wales, Australia*)

Five Days of Empirical Software Engineering: The PASED Experience

Massimiliano Di Penta, Giuliano Antoniol, Daniel M. German, Yann-Gaël Guéhéneuc, and Bram Adams (*University of Sannio, Italy; École Polytechnique de Montréal, Canada; University of Victoria, Canada; Queen's University, Canada*)

Closing Remarks (Thu Jun 7 12:30 - 12:45)

Jochen Ludewig and Hausi Müller

New Ideas and Emerging Results Track

NIER Session 2: NIER for Mining Product and Process Data (Thu Jun 7 10:45 - 12:45)

On How Often Code Is Cloned across Repositories

Niko Schwarz, Mircea Lungu, and Romain Robbes (*University of Bern, Switzerland; University of Chile, Chile*)

Mining Input Sanitization Patterns for Predicting SQL Injection and Cross Site Scripting Vulnerabilities

Lwin Khin Shar and Hee Beng Kuan Tan (*Nanyang Technological University, Singapore*)

Inferring Developer Expertise Through Defect Analysis

Tung Thanh Nguyen, Tien N. Nguyen, Evelyn Duesterwald, Tim Klinger, and Peter Santhanam (*Iowa State University, USA; IBM Research, USA*)

Green Mining: Investigating Power Consumption Across Versions

Abram Hindle (*University of Alberta, Canada*)

Multi-label Software Behavior Learning

Yang Feng and Zhenyu Chen (*Nanjing University, China*)

Trends in Object-Oriented Software Evolution: Investigating Network Properties

Alexander Chatzigeorgiou and George Melas (*University of Macedonia, Greece*)

Exploring Techniques for Rationale Extraction from Existing Documents

Benjamin Rogers, James Gung, Yechen Qiao, and Janet E. Burge (*Miami University, USA*)

Thursday June 7 14:00 - 16:00

Awards Session 2 (Thu Jun 7 14:00)

Poster Session (Thu Jun 7 15:00 - 16:00)

Authors will be present at their posters. The session will overlap with the afternoon break and refreshments will be served.

Thursday June 7 16:00-17:30**Technical Research Papers****Research Session 15: Concurrency and Exceptions (Thu Jun 7 16:00 - 17:30)**

Static Detection of Resource Contention Problems in Server-Side Scripts
Yunhui Zheng and Xiangyu Zhang (*Purdue University, USA*)

Amplifying Tests to Validate Exception Handling Code
Pingyu Zhang and Sebastian Elbaum (*University of Nebraska-Lincoln, USA*)

MagicFuzzer: Scalable Deadlock Detection for Large-Scale Applications
Yan Cai and W. K. Chan (*City University of Hong Kong, China*)

Research Session 16: Software Architecture (Thu Jun 7 16:00 - 17:30)

Software Architectures with Security Patterns: An Empirical Study
Koen Yskout, Riccardo Scandariato, and Wouter Joosen (*Katholieke Universiteit Leuven, Belgium*)

Enhancing Architecture-Implementation Conformance with Change Management and Support for Behavioral Mapping
Yongjie Zheng and Richard N. Taylor (*UC Irvine, USA*)

A Tactic-Centric Approach for Automating Traceability of Quality Concerns
Mehdi Mirakhorli, Yonghee Shin, Jane Cleland-Huang, and Murat Cinar (*DePaul University, USA*)

Research Session 17: Formal Verification (Thu Jun 7 16:00 - 17:30)

Build Code Analysis with Symbolic Evaluation
Ahmed Tamrawi, Hoan Nguyen, Hung Nguyen, and Tien Nguyen (*Iowa State University, USA*)

An Automated Approach to Generating Efficient Constraint Solvers
Dharini Balasubramaniam, Christopher Jefferson, Lars Kotthoff, Ian Miguel, and Peter Nightingale (*University of St. Andrews, UK*)

Simulation Relation for Software Product Lines: Foundations for Scalable Model Checking
Maxime Cordy, Andreas Classen, Gilles Perrouin, Patrick Heymans, Pierre-Yves Schobbens, and Axel Legay (*University of Namur, Belgium; INRIA Rennes, France*)

Software Engineering in Practice Track**SEIP Session 5: Goldfish Bowl Panel (Thu Jun 7 16:00 - 17:30)**

Software Development Analytics
Tim Menzies and Thomas Zimmermann (*West Virginia University, USA; Microsoft Research, USA*)

SEIP Session 6: Re-Engineering (Thu Jun 7 16:00 - 17:30)

Making Sense of Healthcare Benefits
Jonathan Bnayahu, Maayan Goldstein, Mordechai Nisenson, and Yahalomit Simionovici (*IBM, Israel*)

On the Proactive and Interactive Visualization for Feature Evolution Comprehension: An Industrial Investigation
Renato Novais, Camila Nunes, Caio Lima, Elder Cirilo, Francisco Dantas, Alessandro Garcia, and Manoel Mendonça (*Federal University of Bahia, Brazil; PUC-Rio, Brazil*)

Extending Static Analysis by Mining Project-Specific Rules
Boya Sun, Gang Shu, Andy Podgurski, and Brian Robinson (*Case Western Reserve University, USA; ABB Corporate Research, USA*)

Informal Demonstrations

Informal Demos Session (Thu Jun 7 16:00 - 17:30)

Program TBA

ACM Student Research Competition

ACM SRC Poster Presentation Session (Thu Jun 7 16:00 - 17:30)

Program TBA

Friday June 8 8:45 - 10:15**Technical Research Papers****Research Session 18: Invariant Generation (Fri Jun 8 8:45 - 10:15)**

Using Dynamic Analysis to Discover Polynomial and Array Invariants

ThanhVu Nguyen, Deepak Kapur, Westley Weimer, and Stephanie Forrest (*University of New Mexico, USA; University of Virginia, USA*)

Inferring and Checking Metadata Invariants to Support Program Evolution

Myoungkyu Song and Eli Tilevich (*Virginia Tech, USA*)

Generating Obstacle Conditions for Requirements Completeness

Dalal Alrajeh, Jeff Kramer, Alessandra Russo, Sebastian Uchitel, and Axel van Lamsweerde

Research Session 19: Regression Testing (Fri Jun 8 8:45 - 10:15)

make test-zesti: A Symbolic Execution Solution for Improving Regression Testing

Paul Marinescu and Cristian Cadar (*Imperial College London, UK*)

BALLERINA: Automatic Generation and Clustering of Efficient Random Unit Tests for Multithreaded Code

Adrian Nistor, Qingzhou Luo, Michael Pradel, Thomas Gross, and Darko Marinov (*University of Illinois at Urbana-Champaign, USA; ETH Zurich, Switzerland*)

On-demand Test Suite Reduction

Dan Hao, Lu Zhang, Xingxia Wu, Hong Mei, and Gregg Rothermel (*Peking University, China; University of Nebraska, USA*)

Research Session 20: Software Vulnerability (Fri Jun 8 8:45 - 10:15)

Automated Detection of Client-State Manipulation Vulnerabilities

Anders Møller and Mathias Schwarz (*Aarhus University, Denmark*)

Understanding Integer Overflow in C/C++

Will Dietz, Peng Li, John Regehr, and Vikram Adve (*University of Illinois at Urbana-Champaign, USA; University of Utah, USA*)

A Large Scale Exploratory Analysis of Software Vulnerability Life Cycles

Muhammad Shahzad, Muhammad Zubair Shafiq, and Alex X. Liu (*Michigan State University, USA*)

Software Engineering in Practice Track**SEIP Session 7: Debugging (Fri Jun 8 8:45 - 10:15)**

Debugger Canvas: Industrial Experience with the Code Bubbles Paradigm

Robert DeLine, Andrew Bragdon, Kael Rowan, Jens Jacobsen, and Steven P. Reiss (*Microsoft, USA; Brown University, USA*)

Characterizing and Predicting Which Bugs Get Reopened

Thomas Zimmermann, Nachiappan Nagappan, Philip J. Guo, and Brendan Murphy (*Microsoft Research, USA; Stanford University, USA; Microsoft Research, UK*)

ReBucket: A Method for Clustering Duplicate Crash Reports Based on Call Stack Similarity

Yingnong Dang, Rongxin Wu, Hongyu Zhang, Dongmei Zhang, and Peter Nobel (*Microsoft Research Asia, China; Tsinghua University, China; Microsoft, USA*)

SEIP Session 8: Programming and Analysis (Fri Jun 8 8:45 - 10:15)

Understanding the Impact of Pair Programming on Developers Attention: A Case Study on a Large Industrial Experimentation

Alberto Sillitti, Giancarlo Succi, and Jelena Vlasenko (*Free University of Bolzano, Italy*)

How Much Does Unused Code Matter for Maintenance?

Sebastian Eder, Maximilian Junker, Benedikt Hauptmann, Elmar Jürgens, Rudolf Vaas, and Karl-Heinz Prommer (*TU Munich, Germany; Munich Re, Germany*)

Information Needs for Software Development Analytics

Raymond P. L. Buse and Thomas Zimmermann (*University of Virginia, USA; Microsoft Research, USA*)

Software Engineering Horizons Track**SE Horizons Session 2 (Fri Jun 8 8:45 - 10:15)**

In this track, distinguished invited experts will talk about Software Engineering issues in neighbouring fields and specific problem areas, such as Green Computing, Simulation, Scientific Computing, HCI, or robotics. Speakers will be announced soon.

See the description of this track on page 24 for more details.

New Ideas and Emerging Results Track**NIER Session 3: NIER to Leverage Social Aspects (Fri Jun 8 8:45 - 10:15)**

Continuous Social Screencasting to Facilitate Software Tool Discovery

Emerson Murphy-Hill (*North Carolina State University, USA*)

UDesignIt: Towards Social Media for Community-Driven Design

Phil Greenwood, Awais Rashid, and James Walkerdine (*Lancaster University, UK*)

Influencing the Adoption of Software Engineering Methods Using Social Software

Leif Singer and Kurt Schneider (*Leibniz Universität Hannover, Germany*)

Toward Actionable, Broadly Accessible Contests in Software Engineering

Jane Cleland-Huang, Yonghee Shin, Ed Keenan, Adam Czauderna, Greg Leach, Evan Moritz, Malcom Gethers, Denys Poshyvanyk, Jane Huffman Hayes, and Wenbin Li (*DePaul University, USA; College of William and Mary, USA; University of Kentucky, USA*)

CodeTimeline: Storytelling with Versioning Data

Adrian Kuhn and Mirko Stocker (*University of British Columbia, Canada; University of Applied Sciences Rapperswil, Switzerland*)

Friday June 8 10:45 - 12:45**Technical Research Papers****Research Session 21: API Learning (Fri Jun 8 10:45 - 12:45)**

Synthesizing API Usage Examples

Raymond P. L. Buse and Westley Weimer (*University of Virginia, USA*)

Semi-automatically Extracting FAQs to Improve Accessibility of Software Development Knowledge

Stefan Henß, Martin Monperrus, and Mira Mezini (*TU Darmstadt, Germany; University of Lille, France*)

Temporal Analysis of API Usage Concepts

Gias Uddin, Barthelemy Dagenais, and Martin Robillard (*McGill University, Canada*)

Inferring Method Specifications from Natural Language API Descriptions

Rahul Pandita, Xusheng Xiao, Hao Zhong, Tao Xie, Stephen Oney, and Amit Paradkar (*North Carolina State University, USA; CMU, USA; IBM, USA*)**Research Session 22: Code Recommenders (Fri Jun 8 10:45 - 12:45)**

Automatic Parameter Recommendation for Practical API Usage

Cheng Zhang, Juyuan Yang, Yi Zhang, Jing Fan, Xin Zhang, Jianjun Zhao, and Peizhao Ou (*Shanghai Jiao Tong University, China*)

On the Naturalness of Software

Abram Hindle, Earl Barr, Mark Gabel, Zhendong Su, and Premkumar Devanbu (*UC Davis, USA; University of Texas at Dallas, USA*)

Recommending Source Code for Use in Rapid Software Prototypes

Collin McMillan, Negar Hariri, Denys Poshyvanyk, Jane Cleland-Huang, and Bamshad Mobasher (*College of William and Mary, USA; DePaul University, USA*)

Active Code Completion

Cyrus Omar, YoungSeok Yoon, Thomas LaToza, and Brad Myers (*CMU, USA*)**Research Session 23: Test Automation (Fri Jun 8 10:45 - 12:45)**

Automated Oracle Creation Support, or: How I Learned to Stop Worrying About Fault Propagation and Love Mutation Testing

Matt Staats, Gregory Gay, and Mats Heimdahl (*Korea Advanced Institute of Science and Technology, South Korea; University of Minnesota, USA*)

Automating Test Automation

Suresh Thummalapenta, Saurabh Sinha, Nimit Singhania, and Satish Chandra (*IBM Research, India; IBM Research, USA*)

Stride: Search-Based Deterministic Replay in Polynomial Time via Bounded Linkage

Jinguo Zhou, Xiao Xiao, and Charles Zhang (*Hong Kong University of Science and Technology, China*)

iTree: Efficiently Discovering High-Coverage Configurations Using Interaction Trees

Charles Song, Adam Porter, and Jeffrey S. Foster (*University of Maryland, USA*)**Research Session 24: Validation of Specification (Fri Jun 8 10:45 - 12:45)**

Inferring Class Level Specifications for Distributed Systems

Sandeep Kumar, Siau-Cheng Khoo, Abhik Roychoudhury, and David Lo (*National University of Singapore, Singapore; Singapore Management University, Singapore*)

Statically Checking API Protocol Conformance with Mined Multi-object Specifications
Michael Pradel, Ciera Jaspán, Jonathan Aldrich, and Thomas Gross (*ETH Zurich, Switzerland; CMU, USA*)

Behavioral Validation of JFSL Specifications Through Model Synthesis
Carlo Ghezzi and Andrea Mocchi (*Politecnico di Milano, Italy*)

Verifying Client-Side Input Validation Functions Using String Analysis
Muath Alkhalaf, Tevfik Bultan, and Jose Gallegos (*UC Santa Barbara, USA*)

Software Engineering in Practice Track

SEIP Session 9: Testing (Fri Jun 8 10:45 - 12:45)

Invited Talk:

Large Scale Test Automation in the Cloud
John Penix (*Google, USA*)

Efficient Reuse of Domain-Specific Test Knowledge: An Industrial Case in the Smart Card Domain
Nicolas Devos, Christophe Ponsard, Jean-Christophe Deprez, Renaud Bauvin, Bénédicte Moriau, and Guy Anckaerts (*CETIC, Belgium; STMicroelectronics, Belgium*)

The Quamoco Product Quality Modelling and Assessment Approach
Stefan Wagner, Klaus Lochmann, Lars Heinemann, Michael Kläs, Adam Trendowicz, Reinhold Plösch, Andreas Seidl, Andreas Goeb, and Jonathan Streit (*University of Stuttgart, Germany; TU Munich, Germany; Fraunhofer IESE, Germany; JKU Linz, Austria; Capgemini, Germany; SAP, Germany; itestra, Germany*)

Industrial Application of Concolic Testing Approach: A Case Study on libexif by Using CREST and KLEE
Yunho Kim, Moonzoo Kim, Youngjoo Kim, and Yoonkyu Jang (*KAIST, South Korea; Samsung Electronics, South Korea*)

Formal Research Demonstrations Track

Formal Demos Session 2 (Fri Jun 8 10:45 - 12:45)

WorkItemExplorer: Visualizing Software Development Tasks Using an Interactive Exploration Environment
Christoph Treude, Patrick Gorman, Lars Grammel, and Margaret-Anne Storey (*University of Victoria, Canada*)

Runtime Monitoring of Component Changes with Spy@Runtime
Carlo Ghezzi, Andrea Mocchi, and Mario Sangiorgio (*Politecnico di Milano, Italy; MIT, USA*)

GraPacc: A Graph-Based Pattern-Oriented, Context-Sensitive Code Completion Tool
Anh Nguyen, Hoan Anh Nguyen, Tung Thanh Nguyen, and Tien Nguyen (*Iowa State University, USA*)

Code Bubbles: A Practical Working-Set Programming Environment
Steven P. Reiss, Jared Bott, and Joseph LaViola (*Brown University, USA; University of Central Florida, USA*)

EVOSS: A Tool for Managing the Evolution of Free and Open Source Software Systems
Davide Di Ruscio, Patrizio Pelliccione, and Alfonso Pierantonio (*University of L'Aquila, Italy*)

Supporting Extract Class Refactoring in Eclipse: The ARIES Project

Gabriele Bavota, Andrea De Lucia, Andrian Marcus, Rocco Oliveto, and Fabio Palomba (*University of Salerno, Italy; Wayne State University, USA; University of Molise, Italy*)

EXSYST: Search-Based GUI Testing

Florian Gross, Gordon Fraser, and Andreas Zeller (*Saarland University, Germany*)

JavaMOP: Efficient Parametric Runtime Monitoring Framework

Dongyun Jin, Patrick Meredith, Choonghwan Lee, and Grigore Rosu (*University of Illinois at Urbana-Champaign, USA*)

New Ideas and Emerging Results Track

NIER Session 4: NIER for Verification and Evolution (Fri Jun 8 10:45 - 12:45)

Analyzing Multi-agent Systems with Probabilistic Model Checking Approach

Songzheng Song, Jianye Hao, Yang Liu, Jun Sun, Ho-Fung Leung, and Jin Song Dong (*National University of Singapore, Singapore; Chinese University of Hong Kong, China; University of Technology and Design, Singapore*)

Brace: An Assertion Framework for Debugging Cyber-Physical Systems

Kevin Boos, Chien-Liang Fok, Christine Julien, and Miryung Kim (*University of Texas at Austin, USA*)

Augmenting Test Suites Effectiveness by Increasing Output Diversity

Nadia Alshahwan and Mark Harman (*University College London, UK*)

Improving IDE Recommendations by Considering Global Implications of Existing Recommendations

Kıvanç Muşlu, Yuriy Brun, Reid Holmes, Michael D. Ernst, and David Notkin (*University of Washington, USA; University of Waterloo, Canada*)

Towards Flexible Evolution of Dynamically Adaptive Systems

Gilles Perrouin, Brice Morin, Franck Chauvel, Franck Fleurey, Jacques Klein, Yves Le Traon, Olivier Barais, and Jean-Marc Jezequel (*University of Namur, Belgium; SINTEF IKT, Norway; University of Luxembourg, Luxembourg; University of Rennes I, France*)

Towards Business Processes Orchestrating the Physical Enterprise with Wireless Sensor Networks

Fabio Casati, Florian Daniel, Guenadi Dantchev, Joakim Eriksson, Niclas Finne, Stamatis Karnouskos, Patricio Moreno Montero, Luca Mottola, Felix Oppermann, Gian Pietro Picco, Antonio Quartulli, Kay Romer, Patrik Spiess, Stefano Tranquillini, and Thiemo Voigt (*University of Trento, Italy; SAP AG, Germany; Swedish Institute of Computer Science, Sweden; Acciona Infraestructuras S.A., Spain; University of Lübeck, Germany*)

Engineering and Verifying Requirements for Programmable Self-Assembling Nanomachines

Robyn Lutz, Jack Lutz, James Lathrop, Titus Klinge, Eric Henderson, Divita Mathur, and Dalia Abo Sheasha (*Iowa State University, USA; California Institute of Technology, USA*)

Friday June 8 14:00 - 15:15

Keynote 3 (Fri Jun 8 14:00 - 15:15)

Jeff Kramer (Imperial College London, UK)

Whither Software Architecture?

Friday June 8 15:15 - 16:00

Awards Session 3 (Fri Jun 8 15:15 - 15:30)

Conference Closing (Fri Jun 8 15:30 - 16:00)

Thanks · Invitation to ICSE 2013 · ICSE Preview · Farewell

After the closing ceremony, a farewell coffee will be served.

Social Events

Reception (Wed Jun 6 18:30)

On Wednesday June 6, 2012 ICSE 2012 participants will be invited to a reception in a famous old guild hall in the heart of the city, the Zunfthaus zur Meisen.

Banquet (Thu Jun 7 19:15)

The ICSE 2012 conference banquet will take place on Thursday June 7 in the Kongresshaus.

Other Social Events

All two-day workshops as well as the co-located events MSR, SEAMS, and ICSSP will include a dinner in the evening of the first day of the respective events. Workshop 22 (S-Cube) will also include a dinner.

Keynotes

Keynote 1 Wednesday June 6 9:00 - 10:15



Saskia Sassen (Columbia University, USA)
Digital Formations of the Powerful and the Powerless

Abstract

This talk compares two kinds of socio-technical formations: electronic financial networks and local social activist movements that are globally networked. Both cut across the duality global/national and each has altered the economic and political landscapes for respectively financial elites and social activists. Using these two cases helps illuminate the very diverse ways in which the growth of electronic networks partially transforms existing politico-economic orderings. They are extreme cases, one marked by hypermobility and the other by physical immobility. But they show us that each is only partly so: financial electronic networks are subject to particular types of embeddedness and local activist organizations can benefit from novel electronic potentials for global operation. I show how financial electronic networks and electronic activism reveal two parallel developments associated with particular technical properties of the new ICTs, but also reveal a third, radically divergent outcome, one I interpret as signaling the weight of the specific social logics of users in each case.

About the Speaker

Saskia Sassen is the Robert S. Lynd Professor of Sociology and Co-Chair, The Committee on Global Thought, Columbia University, USA.

Her recent books are *Territory, Authority, Rights: From Medieval to Global Assemblages* (Princeton University Press 2008), *A Sociology of Globalization* (W.W.Norton 2007), and the 4th fully updated edition of *Cities in a World Economy* (Sage 2011). The *Global City* came out in a new fully updated edition in 2001. She is currently working on *When Territory Exits Existing Frameworks* (Under contract with Harvard University Press). Her books are translated into twenty-one languages. For UNESCO she organized a five-year project on sustainable human settlement with a network of researchers and activists in over 30 countries. She contributes regularly to www.OpenDemocracy.net and www.HuffingtonPost.com.

She has received several honors and awards, most recently a doctor honoris causa from each Delft University (Netherlands), DePaul University (USA), and Université de Poitiers (France). She serves on several editorial boards and is an advisor to several international bodies. She is a Member of the Council on Foreign Relations, a member of the National Academy of Sciences Panel on Cities, and chaired the Information Technology and International Cooperation Committee of the Social Science Research Council (USA).

Keynote 2 Thursday June 7 9:00 - 10:15**Frank-Dieter Clesle** (SAP, Germany)**Supporting Sustainability with Software – An Industrial Perspective****Abstract**

Supporting sustainability with software is often summed up in the expression 'Green IT' and directly relates to the reduction of CO2 emissions and energy used by IT. The amount of CO2 used in the IT industry covers 2% of the overall CO2 emissions. "Green by IT" describes the influence of appropriate software to the remaining 98% of the industry. We estimate that the effect of our sustainability related software on our customers' CO2 footprint could be 10.000 times higher than our own.

The so called triple bottom line defines sustainability as covering economic, ecological, and social aspects and the dependencies between. Based on this definition of sustainability, software could not only focus on green house gas reduction. Other topics like: consumers' protection, sustainable supply, reduction of emission (air, water, waste), recycling, human recourse management and intelligent energy usage must be as well focus areas supported by software. At last software industry should not only focus on delivering tools for life cycle assessment (LCA), we should use it and provide a LCA for our software self.

The industrial question is how to increase short and long term profitability by holistically managing economic, social and environmental risks and opportunities supported by software.

About the Speaker

Frank-Dieter Clesle is Vice President On-Demand Content as a Service Infrastructure, a part of SAP's sustainability solutions located at SAP Sustainability Lab in Markdorf, Germany. Before joining SAP, he was Executive Vice President Corporate Portfolio Management at TechniData, the leading provider of Environment Health and Safety solutions, until TechniData was acquired by SAP in 2010.

He is a co-author of the book *Umweltkonforme Produktgestaltung* (environmentally compliant product design) published 2008 by Publicis (in German) and contributed to the book *EcoDesign: Von der Theorie in die Praxis* (EcoDesign: from theory to practice) published 2008 by Springer (in German).

Frank-Dieter Clesle is a member of various sustainability-related working groups in European industrial associations.

Keynote 3 Friday, June 8 14:00 - 15:15

Jeff Kramer (Imperial College London, UK)
Whither Software Architecture?

Abstract

Since its early beginnings in the 1980s, much has been achieved in the research field of software architecture. Among other aspects, this research has produced foundational work on the specification, analysis and component configuration of software architectures, including the development of associated software tools. However, adoption of the research by industry has been largely methodological rather than based on precise specifications in architecture description languages (ADLs) or rigorously underpinned by formal models of behaviour and non-functional attributes.

Why is this? Why were the actual formalisms and tools not more widely adopted? Can we draw any lessons from this? In this talk, I hope to explore this further, drawing on my personal experience as a researcher in distributed software architectures.

I particularly hope to tickle the fancy of the younger members of our community, indicating the excitement of research, the benefits of belonging to a vibrant research community such as ours, and the benefits of being an active contributor. For the more mature researchers, there will be some nostalgic memories combined with some inevitable stepping on toes. For both young and old, there will be some thoughts for research opportunities as the need for self-managing adaptive software systems becomes more urgent.

About the Speaker

Jeff Kramer is the Senior Dean at Imperial College London. He was Head of the Department of Computing from 1999 to 2004 and Dean of the Faculty of Engineering from 2006 to 2009.

His research work is primarily concerned with software engineering, focusing on software architecture, behaviour analysis, the use of models in requirements elaboration and architectural approaches to adaptive software systems. He was a principal investigator of research projects that developed the CONIC and DARWIN architectural environments for distributed programming and of associated research into software architectures and their analysis.

Jeff was Program Co-chair of ICSE '99, Chair of the ICSE Steering Committee from 2000 to 2002, and General Co-chair of ICSE 2010 in Cape Town. He was Editor in Chief of IEEE TSE from 2006 to 2009, received the Most Influential Paper Award at ICSE 2003, and was awarded the 2005 ACM SIGSOFT Outstanding Research Award and the 2011 ACM SIGSOFT Distinguished Service Award. He is co-author of books on Concurrency and on Distributed Systems and Computer Networks, and the author of over 200 journal and conference publications. Jeff is a Fellow of the Royal Academy of Engineering, a Chartered Engineer, Fellow of the IET, Fellow of the ACM, Fellow of the BCS and Fellow of the City and Guilds of London Institute.

Software Engineering Horizons

In this track, distinguished invited experts will talk about Software Engineering issues in neighbouring fields and specific problem areas, such as Green Computing, Simulation, Scientific Computing, HCI, or robotics.

Energy Packet Networks: A new paradigm that saves energy and also maximizes the use of renewables (working title)

Erol Gelenbe (*Imperial College, UK*)

Title TBA

Martin Odersky (EPFL, Switzerland)

Title TBA

Brad Myers (Carnegie Mellon University, USA)

More speakers to be announced soon.

Pre- and Post-Conference Events

Doctoral Symposium

Monday June 4, 2012 9:00 - 10:00

Introduction

Keynote

Prem Devanbu (*University of California Davis, USA*)

Monday June 4, 2012 10:00 - 10:30

Posters 1-12

Going Global with Agile Service Networks

Damian Andrew Tamburri (*VU University Amsterdam, Netherlands*)

Using Structural and Semantic Information to Support Software Refactoring

Gabriele Bavota (*University of Salerno, Italy*)

An Approach to Variability Management in Service-Oriented Product Lines

Sedigh Khoshnevis (*Shahid Beheshti University G.C., Iran*)

Using Machine Learning to Enhance Automated Requirements Model Transformation

Erol-Valeriu Chioasca (*University of Manchester, UK*)

Security Testing of Web Applications: A Research Plan

Andrea Avancini (*Fondazione Bruno Kessler, Italy*)

Application of Self-adaptive Techniques to Federated Authorization Models

Christopher Bailey (*University of Kent, UK*)

Improving Information Retrieval-Based Concept Location Using Contextual Relationships

Tezcan Dilshener (*Open University, UK*)

Effective Specification of Decision Rights and Accountabilities for Better Performing Software Engineering Projects

Monde Kalumbilo (*University College London, UK*)

Search Based Design of Software Product Lines Architectures

Thelma Elita Colanzi (*Federal University of Paraná, Brazil*)

Software Fault Localization Based on Program Slicing Spectrum

Wanzhi Wen (*Southeast University, China*)

Architectural Task Allocation in Distributed Environment: A Traceability Perspective

Salma Imtiaz (*International Islamic University, Pakistan*)

Using Invariant Relations in the Termination Analysis of While Loops

Wided Ghardallou (*University of Tunis El Manar, Tunisia*)

Monday June 4, 2012 11:00 - 12:45**Presentations 1-4**

Software Regression as Change of Input Partitioning

Marcel Böhme (*National University of Singapore, Singapore*)

A Generic Methodology to Derive Domain-Specific Performance Feedback for Developers

Dennis Westermann (*SAP Research, Germany*)

Towards the Verification of Multi-diagram UML Models

Alfredo Motta (*Politecnico di Milano, Italy*)

Documenting and Sharing Knowledge About Code

Anja Guzzi (*Delft University of Technology, Netherlands*)

Monday June 4, 2012 12:45 - 14:00

Lunch, breakout into subgroups over lunch

Monday June 4, 2012 14:00 - 14:50**Presentations 5, 6**

Timely and Efficient Facilitation of Coordination of Software Developers' Activities

Kelly Blincoe (*Drexel University, USA*)

Stack Layout Randomization: Towards Diversity for Securing Binary Programs

Benjamin Rodes (*University of Virginia, USA*)

Monday June 4, 2012 14:50 - 15:30**Posters 13–25**

Synthesis Event-Based Controller: A Software Engineering Challenge

Nicolas D'Ippolito (*Imperial College London, UK*)

Empirically Researching Development of International Software

Malte Ressin (*University of West London, UK*)

Model Translations Among Big-Step Modeling Languages

Fathiyeh Faghih (*University of Waterloo, Canada*)

HARPPIE: Hyper Algorithmic Recipe for Productive Parallelism Intensive Endeavors

Pedro Monteiro (*Universidade Nova de Lisboa, Portugal*)

On the Analysis of Evolution of Software Artefacts and Programs

Fehmi Jaafar (*University of Montreal, Canada*)

Societal Computing

Swapneel Sheth (*Columbia University, USA*)

Finding Suitable Programs: Semantic Search with Incomplete and Lightweight Specifications

Kathryn Stolee (*University of Nebraska-Lincoln, USA*)

Certification-Based Development of Critical Systems

Panayiotis Steele (*University of Virginia, USA*)

Testing and Debugging UML Models Based on fUML

Tanja Mayerhofer (*Vienna University of Technology, Austria*)

Bridging the Divide Between Software Developers and Operators Using Logs

Weiyi Shang (*Queen's University, Canada*)

The Co-evolution of Socio-technical Structures in Sustainable Software Development: Lessons from the Open Source Software Communities

Marcelo Serrano_Zanetti (*ETH Zurich, Switzerland*)

Log-Based Testing

Alexander Elyasov (*Utrecht University, Netherlands*)

Moving Mobile Applications Between Mobile Devices Seamlessly

Volker Schuchardt (*University of Duisburg-Essen, Germany*)

Monday June 4, 2012 16:00 - 17:30

Discussion and lessons learned

New Faculty Symposium

Tuesday June 5, 2012

Co-Chairs: Martin Robillard and Wilhelm Schäfer

Becoming a new assistant professor or professional researcher is exciting but also challenging. The goal of the New Faculty Symposium is to help new faculty members and researchers get started by providing them with an opportunity to network with peers and hear advice from highly accomplished members of the community. This year the New Faculty Symposium will put the emphasis on networking and interaction throughout the symposium. Attendees will have many opportunities to discuss relevant issues with peers and senior members of the community in a relaxed atmosphere.

The New Faculty Symposium is designed to be a service to those who are within two years of (either before or after) their initial tenure track academic or research lab appointment, although the symposium may be of significant interest and value to others.

Session 1: Opening

Welcome message from the chairs

Introduction session and case studies

Participants will get a chance to know each other by discussing controversial situations and ethical dilemmas faced by new faculty members and researchers.

Session 2 (Invited Talks)

Developing a Research Agenda

Matt Dwyer (*University of Nebraska, USA*)

Establishing Strategic Funding

Joanne Atlee (*University of Waterloo, Canada*)

Special Lunch Session

European Grant Programs

Stefan Jähnichen (*TU Berlin, Germany*)

Session 3 (Invited Talks)

Promoting Your Ideas

Bertrand Meyer (*ETH Zurich, Switzerland*)

Teaching and Mentoring Students

Laurie Williams (*North Carolina State University*)

Session 4

Presentation of case studies and panel with invited speakers.

Matinée with Carlo Ghezzi: From Programming Languages to Software Engineering

Sunday June 3, 2012, afternoon

Organizers: Domenico Bianculli, Mehdi Jazayeri, Mauro Pezzè (*University of Lugano, Switzerland*)

This half-day event will celebrate Carlo Ghezzi's achievements and accomplishments in programming languages and software engineering. It will feature a series of talks by friends, colleagues, and former students, as well as the presentation of a book that walks through Carlo's research work over the different stages in his career. The event will be followed by a reception for all registered attendees; a follow-up dinner is also planned.

<https://sites.google.com/site/matineecarloghezzi/>

Model-Based Engineering at an Enterprise Scope

Monday June 4, 2012, afternoon

A major goal of the Software Engineering approach of a large IT organization is to preserve the enterprise knowledge as formal models unlike the widely-used informal prose description. The models must be a first class citizen in the enterprise. The Eclipse Modeling Framework (EMF) and the components based on EMF define a perfect base for realizing enterprise capable solutions. The workshop gives an introduction to the new language Xcore and demonstrates the benefits of using Eclipse Modeling technologies with the example of the Software Development Lifecycle (SDLC) platform developed at UBS with live demos and modeling sessions.

[Xcore: Ecore Meets Xtext](#)

Ed Merks (itemis, Germany)

[Eclipse Data Modeling at an Enterprise Scale](#)

Eike Stepper (Independent Consultant), Robert Blust (UBS, Switzerland)

[Measure and manage complexity](#)

Christian Meyer (UBS, Switzerland)

Tutorials

F1	Mon, June 4	Effective Experimental Design and Statistical Analysis of Software Engineering Data	Full-day
F2	Mon, June 4	Self-Organizing Teams	Full-day
F3	Tue, June 5	Wolf Pack Programming Workshop - Real Time Collaboration hands-on Experience	Full-day
F4	Tue, June 5	Domain Specific Language Design	Full-day
H1	Mon, June 4	Strategic Management of Technical Debt	9:00-12:30
H2	Mon, June 4	Positive Transitions from the Classroom to the Cubicle	14:00-17:30
H3	Mon, June 4	Multicore Software Engineering and Auto-Tuning	9:00-12:30
H4	Mon, June 4	SOA Migration in Practice	14:00-17:30
H5	Tue, June 5	Using Ethnographic methods in Software Engineering Research	9:00-12:30
H6	Tue, June 5	Mining Software Engineering Data	14:00-17:30
H7	Tue, June 5	Software Ecosystems - Implications for Strategy, Business Model and Architecture	9:00-12:30

Technical Briefings

B1	Tue, June 5	Understanding Machine Learning for Empirical Software Engineering	9:00-10:30
B2	Tue, June 5	Software Engineering in the Age of Data Privacy	11:00-12:30
B3	Tue, June 5	On the Use of Text Retrieval Techniques in Software Engineering	14:00-15:30
B4	Tue, June 5	Symbolic Techniques for Software Debugging	16:00-17:30
B5	Tue, June 5	Licensing Compliance	14:00-15:30
B6	Tue, June 5	Software Release Engineering	16:00-17:30

Workshops

W1	AST	7th IEEE/ACM International Workshop on Automation of Software Test	Sat, June 2 - Sun, June 3
W2	MiSE	4th International Workshop on Modelling in Software Engineering	Sat, June 2 - Sun, June 3
W3	CHASE	Co-operative and Human Aspects of Software Engineering	Sat, June 2
W4	CTGDSD	Collaborative Teaching of Globally Distributed Software Development: Community Building Workshop 2	New date: Sat, June 9
W5	FormSERA	Workshop on Formal Methods in Software Engineering: Rigorous and Agile Approaches	Sat, June 2
W6	SESENA	Third International Workshop on Software Engineering for Sensor Network Applications	Sat, June 2
W7	GREENS	First International Workshop on Green and Sustainable Software	Sun, June 3
W8	HotSWUp	Workshop on Hot Topics in Software Upgrades	Sun, June 3
W9	SE-SmartGrid	First International Workshop on Software Engineering Challenges for the Smart Grid	Sun, June 3
W10	TOPI	2nd Workshop on Developing Tools as Plug-ins	Sun, June 3
W11	WETSoM	3rd Workshop on Emerging Trends in Software Metrics	Sun, June 3
W12	SEHC	4th International Workshop on Software Engineering in Health Care	Mon, June 4 - Tue, June 5
W13	IWSC	Sixth International Workshop on Software Clones	Mon, June 4
W14	PESOS	4th International Workshop on Principles of Engineering Service-Oriented Systems	Mon, June 4
W15	PLEASE	3rd International Workshop on Product Line Approaches in Software Engineering	Mon, June 4
W16	RSSE	3rd International Workshop on Recommendation Systems for Software Engineering	Mon, June 4
W17	UsARE	International Workshop on Usability and Accessibility focused Requirements Engineering	Mon, June 4
W18	MTD	Third International Workshop on Managing Technical Debt	Tue, June 5
W19	RAISE	Realizing AI Synergies in Software Engineering	Tue, June 5
W20	SUITE	Fourth International Workshop on Search-Driven Development: Users, Infrastructure, Tools, and Evaluation	Tue, June 5
W21	USER	User evaluation for Software Engineering Researchers	Tue, June 5
W22	S-Cube	European Software Services and Systems Research - Results and Challenges	Tue, June 5
W23	EduRex	First International Workshop on Software Engineering Education based on Real-World Experiences	Sat, June 9
W24	GAS	2nd International Workshop on Games and Software Engineering: Realizing User Engagement with Game Engineering Techniques	Sat, June 9
W25	SEES	2nd International Workshop on Software Engineering for Embedded Systems	Sat, June 9
W26	WEH	5th International Workshop on Exception Handling	Sat, June 9

Co-Located Events

MSR 2012 – 9th Working Conference on Mining Software Repositories June 2-3, 2012

The Mining Software Repositories (MSR) field analyzes the rich data available in software repositories to uncover interesting and actionable information about software systems and projects. The goal of this two-day working conference is to advance the science and practice of MSR.

<http://2012.msrconf.org/>

SEAMS 2012 – 7th International Symposium on Software Engineering for Adaptive and Self-Managing Systems, June 4-5, 2012

An increasingly important requirement for a software-intensive system is the ability to self-manage by adapting itself at run time to handle changing context, resources, and user needs. SEAMS brings together researchers and practitioners to engage in stimulating dialogue regarding the fundamental principles, state of the art, and critical challenges of self-adaptive and self-managing systems.

<http://www.seams2012.cs.uvic.ca/>

ICSSP 2012 – International Conference on Software and System Process June 2-3, 2012

Processes are ubiquitous in the modern Software and Systems Engineering world and regarded as one major means for achieving and ensuring the quality of final products. Processes from other domains face similar challenges such as adaptability, coordination and standard conformance, yet share similarities. By sharing process development research and practices from other domains, ICSSP 2012 aims at investigating novel solutions to today's process challenges.

<http://www.icssp-conferences.org/icssp2012/>

Book Launch & Dinner in Honor of Judith Bishop, June 2, 2012

Celebrating the launch of the book *Patterns, Programming and Everything*, a dinner will be organized at ICSE 2012 on Saturday June 2, 2012. Carlo Ghezzi will give a talk and the book, a Festschrift to honor Judy, will be launched. To join the celebration, please register at <http://event.pingp.com/BookforJudith>.

For more information, please contact Karin Breitman <karin@inf.puc-rio.br>.

WRT12 – Fifth Workshop on Refactoring Tools, June 1, 2012

While there is a great deal of interest in developing tool support for refactoring, researchers and tool vendors rarely work together. This forum will enable the transfer of ideas and expertise both ways: researchers can show the state-of-the-art analyses they are using in developing tool support for refactoring, and tool vendors can offer valuable insights on the challenges of scaling such analyses to realistic applications. By bringing together researchers and tool vendors we can shorten the time to embody ideas into production systems.

<http://refactoring.info/WRT12>

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