

# 5<sup>th</sup> ACM/IEEE International Symposium on Empirical Software Engineering 2006

## Final Program

**Welcome Reception: Sept. 19<sup>th</sup>, Wednesday, 8:00 PM, Hotel Everest**

**Gala Dinner: Sept. 21<sup>st</sup>, Thursday, 8:30 PM, Hotel Everest**

All rooms (Rio de Janeiro, Ipanema and Leblon Hall) will have a computer and overhead projector (datashow) for presentation. The computers will not be plugged in the Internet. Please, have your presentation available in a memory stick or CD. Be in touch with your session chair prior your presentation. Files must be recorded and tested before the session time to avoid delays.

Time	Sessions
<b>Thursday Sept. 21</b>	
8.30-9.00	<b>Plenary opening</b> <i>Rio de Janeiro Hall</i> Guilherme Horta Travassos ( <i>COPPE/UFRJ, Brazil</i> ) Claes Wohlin ( <i>Blekinge Institute of Technology, Sweden</i> ) Emilia Mendes ( <i>The University of Auckland, New Zealand</i> )
9.00-10.00	<b>Plenary keynote</b> <i>Rio de Janeiro Hall</i> Chair: Guilherme Travassos ( <i>COPPE/UFRJ, Brazil</i> ) Is there a future for Empirical Software Engineering? Prof. Victor Basili ( <i>University of Maryland and Fraunhofer Center – Maryland</i> )
10.00-10.30	<b>Coffee break</b>
10.30-12.00	<b>Session 2A: Faults and Failures</b> <i>Leblon Hall</i> Chair: Hakan Erdogmus ( <i>NRC Institute for Information Technology, Canada</i> )
	Comparing the Fault-Proneness of New and Modified Code An Industrial Case Study Piotr Tomaszewski <sup>1</sup> and Lars-Ola Damm <sup>1,2</sup> ( <sup>1</sup> Blekinge Institute of Technology, Sweden; <sup>2</sup> Ericsson AB, Sweden)
	Predicting Fault-prone Components in a Java Legacy System Erik Arisholm <sup>1</sup> and Lionel Briand <sup>1,2</sup> ( <sup>1</sup> Simula Research Laboratory, Norway; <sup>2</sup> Carleton University, Canada)
	Predicting Component Failures at Design Time Adrian Schröter, Thomas Zimmermann and Andreas Zeller (Saarland University, Germany)
	<b>Session 2B: Research Methodology</b> <i>Rio de Janeiro Hall</i> Chair: Andreas Jedlitschka ( <i>Fraunhofer Institute of Experimental Software Engineering, Germany</i> )
	Analysis of the Influence of Communication between Researchers on Experiment Replication Sira Vegas <sup>1</sup> , Natalia Juristo <sup>1</sup> , Ana Moreno <sup>1</sup> , Martín Solari <sup>2</sup> and Patricio Letelier <sup>3</sup>

	(1Universidad Politécnica de Madrid, Spain; 2Universidad ORT, Uruguay; 3Universidad Politécnica de Valencia, Spain)
	<b>An Evaluation of Proposed Guidelines for Reporting Software Engineering Experiments</b> Barbara Kitchenham <sup>1</sup> , Hiyam Al-Khilidar <sup>1,2</sup> , Muhammed Ali Babar <sup>1,2</sup> , Mike Berry <sup>1,2</sup> , Karl Cox <sup>1</sup> , Jacky Keung <sup>1,2</sup> , Felicia Kurniawati <sup>1</sup> , Mark Staples <sup>1</sup> , He Zhang <sup>1,2</sup> and Liming Zhu <sup>1,2</sup> (1National ICT Australia Ltd, Australia; 2University of New South Wales, Australia)
	<b>Using Observational Pilot Studies to Test and Improve Lab Packages</b> Manoel Mendonça <sup>1</sup> , Daniela Cruzes <sup>1</sup> , Josemeire Dias <sup>1</sup> and Maria Cristina Ferreira de Oliveira <sup>2</sup> (1Salvador University (UNIFACS), Brazil; 2Instituto de Ciências Matemáticas e de Computação, Brazil)
	<b>Session 2C: Cost and Effort Estimation</b> <i>Ipanema Hall</i> Chair: Martin Höst ( <i>Lund University, Sweden</i> )
	<b>A Framework for the Analysis of Software Cost Estimation Accuracy</b> Stein Grimstad <sup>1,2</sup> and Magne Jørgensen <sup>1</sup> ( <sup>1</sup> Simula Research Laboratory, Norway; <sup>2</sup> University of Oslo, Norway)
	<b>A Comparative Study of Attribute Weighting Heuristics for Effort Estimation by Analogy</b> Jingzhou Li and Guenther Ruhe (University of Calgary, Canada)
	<b>Cross-company and Single-company Effort Models using the ISBSG Database: a Further Replicated Study</b> Chris Lokan <sup>1</sup> and Emilia Mendes <sup>2</sup> ( <sup>1</sup> University of New South Wales, Australia; <sup>2</sup> University of Auckland, New Zealand)
12.00-13.30	<b>Lunch</b>
	<b>Short paper sessions: 3A, 3B and 3C</b>
13.30-15.00	<b>Session 3A: Empirical studies of software processes and products</b> <i>Ipanema Hall</i> Chair: Hakan Erdogmus ( <i>NRC, Canada</i> )
	<b>SIMKIT - A Software Process Simulation Model Construction Kit in Support of Empirical Research</b> Dietmar Pfahl (University of Calgary, Canada)
	<b>Experimental Study on the Impact of Team Climate on Software Quality</b> Marta Gómez (Universidad San Pablo-CEU, Spain)
	<b>Improving the Experimentation for Evaluating the Effect of Composite States on the Understandability of UML Statechart Diagrams</b> José Cruz-Lemus <sup>1</sup> , Marcela Genero <sup>1</sup> , Mario Piattini <sup>1</sup> and Sandro Morasca <sup>2</sup> ( <sup>1</sup> University of Castilla-La Mancha, Spain; <sup>2</sup> Università dell'Insubria, Italy)
	<b>Software Reuse: A Brief Overview of the Brazilian Industry's Case</b> Kellyton Brito <sup>1</sup> , Alexandre Alvaro <sup>1</sup> , Daniel Lucredio <sup>2</sup> , Eduardo Almeida <sup>1</sup> , Silvio Meira <sup>1</sup> ( <sup>1</sup> Federal University of Pernambuco, Brazil; <sup>2</sup> USP -Universidade São Paulo, Brazil)
	<b>A Proposed Method for Building a Database of Project Measurements and Applying it Using Collaborative Filtering</b> Yoshiki Mitani <sup>1</sup> , Nahomi Kikuchi <sup>2</sup> , Tomoko Matsumura <sup>3</sup> , Naoki Ohsugi <sup>3</sup> , Akito Monden <sup>3</sup> and Yoshiki Higo <sup>4</sup> ( <sup>1</sup> NAIST, Japan; <sup>2</sup> IPA/SEC, Japan; <sup>3</sup> NAIST(EASE), Japan; <sup>4</sup> Osaka University, Japan)
	<b>If Your Bug Database Could Talk...</b> Adrian Schröter, Thomas Zimmermann, Rahul Premraj and Andreas Zeller (Saarland University, Germany)

	<p><b>Session 3B: Experiences with research methods and systematic reviews</b>  <b>Rio de Janeiro Hall</b>  Chair: Andreas Jedlitschka (<i>Fraunhofer Institute of Experimental Software Engineering, Germany</i>)</p>
	<p>An Empirical Study On Integrating Analytical Quality Assurance Into Pair Programming  Dietmar Winkler, Ramona Varvaroi, Gernot Goluch and Stefan Biffl  (Technical University of Vienna, Austria)</p>
	<p>Vote-Counting for Combining Quantitative Evidence from Empirical Studies  Parastoo Mohagheghi and Reidar Conradi  (Norwegian University of Science and Technology, Norway)</p>
	<p>Investigating a Constructive Scorecard Model for Creating Meaningful Quantitative Data from Qualitative Inputs  Daniel Port<sup>1</sup>, Rick Kazman<sup>1</sup>, Haruka Nakao<sup>2</sup>, Nobuyuki Hoshino<sup>2</sup> and Yuko Miyamoto<sup>3</sup>  (<sup>1</sup>University of Hawaii at Manoa, United States of America; <sup>2</sup>Japan Manned Space Systems Corporation, Japan; <sup>3</sup>Japan Aerospace Exploration Agency, Japan)</p>
	<p>Experiences in Integrating Qualitative and Quantitative Methods  Maria Lázaro, Esperanza Marcos  (Rey Juan Carlos University, Spain)</p>
	<p>Building Decision Support in an Imperfect World  Raimund Feldmann, Forrest Shull and Michele Shaw  (Fraunhofer Center Maryland, USA)</p>
	<p><b>Session 3C: Evaluation and comparison of techniques and models</b>  <b>Leblon Hall</b>  Chair: Emilia Mendes (<i>University of Auckland, New Zealand</i>)</p>
	<p>PSPm: A Hybrid Personal Software Process  Renato Silva, José Luís Braga, Carlos Henrique Ozório Silva and Liziane Santos Soares  (Federal University of Viçosa, Brazil)</p>
	<p>Empirical Evaluation of SVM-based Software Reliability Model  Yasutaka Kamei, Akito Monden and Matsumoto Ken-ichi  (Nara Institute of Science and Technology, Japan)</p>
	<p>Comparing Code Reading and Testing Criteria: A Replication of Experimental Studies  José Maldonado<sup>1</sup>, Sandra Fabbri<sup>2</sup>, Manoel Mendonça<sup>3</sup>, Emerson Doria<sup>4</sup>, Luciana Martimiano<sup>5</sup> and Jeffrey Carver<sup>6</sup>  (<sup>1</sup>ICMC-USP/ São Carlos, Brazil; <sup>2</sup>UFSCar, Brazil; <sup>3</sup>UNIFACS, Brazil; <sup>4</sup>UNOEST, Brazil; <sup>5</sup>ICMC-USP, Brazil; <sup>6</sup>Mississippi State University)</p>
	<p>COTEST - Code Testing Experiment Supporting Tool  Sandra Fabbri<sup>1</sup>, Katia Felizardo<sup>2</sup>, André Domingues<sup>3</sup>, Marcello Visconti<sup>4</sup>, José Maldonado<sup>5</sup>  (<sup>1</sup>UFSCar, Brazil; <sup>2</sup>Universidade Estadual de Londrina, Brazil; <sup>3</sup>ICMC-USP, Brazil; <sup>4</sup>Universidade Técnica Frederico Santa Maria, Brazil; <sup>5</sup>ICMC-USP/ São Carlos; Brazil)</p>
	<p>Gestalt Principles Applied to Software-Engineering Diagrams: An Initial Study  Krystle Lemon, Edward Allen, Jeffrey Carver and Gary Bradshaw  (Mississippi State University, USA)</p>
	<p>The Impact of Trace Correctness Assumptions  Matthias Heindl and Stefan Biffl  (Vienna University of Technology, Austria)</p>
15.00-15.30	<b>Coffee break</b>
15.30-17.00	<p><b>Session 4A: Comparing Defect Detection Techniques</b>  <b>Rio de Janeiro Hall</b>  Chair: Sira Vegas (<i>Universidad Politecnica de Madrid, Spain</i>)</p>
	<p>An Empirical Comparison between Pair Development and Software Inspection in</p>

	Thailand Monvorath Phongpaibul and Barry Boehm (University of Southern California, USA)
	PBR vs. Checklist: A Replication in the N-Fold Inspection Context Lulu He and Jeffrey Carver (Mississippi State University, USA)
	An Empirical Analysis and Comparison of Random Testing Techniques Johannes Mayer and Christoph Schneckenburger (Ulm University, Germany)
	<b>Session 4B: Software Design</b> <b>Leblon Hall</b> Chair: Stefan Biffl ( <i>Technical University of Vienna, Austria</i> )
	Defects in Automotive Use Cases <sup>1</sup> Fredrik Törner, <sup>2</sup> Martin Ivarsson, <sup>2</sup> Fredrik Pettersson and <sup>2</sup> Peter Öhman ( <sup>1</sup> Volvo Car Corporation, Sweden; <sup>2</sup> Chalmers University of Technology, Sweden)
	A Case Study on the Application of UML in Legacy Development Bente Anda and Kai Hansen (Simula Research Laboratory, Norway; ABB Corporate Research Center, Norway)
	Documenting Design Decision Rationale to Improve Agility and Collaboration in Decision Making: An Experimental Evaluation <sup>1</sup> Davide Falessi, <sup>1</sup> Giovanni Cantone and <sup>2</sup> Martin Becker ( <sup>1</sup> Univ. of Roma "Tor Vergata", Italy; <sup>2</sup> Fraunhofer IESE, Germany)
	<b>Session 4C: Software Projects</b> <b>Ipanema Hall</b> Chair: Maria Teresa Baldassarre ( <i>University of Bari, Italy</i> )
	Successful Software Project and Products Richard Berntsson Svensson and Aybüke Aurum (University of New South Wales, Australia)
	Predicting Good Requirements for In-house Development Projects June Verner, Karl Cox and Steven J. Bleistein (National ICT Australia Ltd, Australia)
	Agile Customer Engagement: a Longitudinal Qualitative Case Study Geir Kjetil Hanssen and Tor Erlend Fægri (SINTEF ICT, Norway)
20.00	<b>ISESE Dinner</b> <b>Everest Hotel</b>

## FRIDAY

Time	Sessions
<b>Friday Sept. 22</b>	
8.30-10.00	<b>Session 5A: Defect Detection</b> <b>Rio de Janeiro Hall</b> Chair: Giovanni Cantone ( <i>University of Roma "Tor Vergata", Italy</i> )
	Maximising the Information Gained From Empirical Studies in Software Engineering: An Experimental Analysis of Code Inspection and Static Analysis for Concurrent Java Components Margaret Wojcicki and Paul Strooper (University of Queensland, Australia)

	<p>Testing and Inspecting Reusable Product Line Components: First Empirical Results  Christian Denger and Ronny Kolb  (Fraunhofer Institute for Experimental Software Engineering (IESE), Germany)</p>
	<p>A Literature Survey of the Quality Economics of Defect-Detection Techniques  Stefan Wagner  (Technische Universität München, Germany)</p>
	<p><b>Session 5B: Software Operation and Evolution</b>  <b>Leblon Hall</b>  Chair: Marvin Zelkowitz (<i>University of Maryland and Fraunhofer Center – Maryland, USA</i>)</p>
	<p>The Evolution of FreeBSD and Linux  Clemente Izurieta and James Bieman  (Colorado State University, USA)</p>
	<p>A Family of Empirical Studies to Compare Informal and Optimization-based Planning of Software Releases  Gengshen Du, Jim McElroy and Guenther Ruhe  (University of Calgary, Canada)</p>
	<p>Empirical Estimates of Software Availability of Deployed Systems  Audris Mockus  (Avaya Research, USA)</p>
	<p><b>Session 5C: Software Development and Developers</b>  <b>Ipamena Hall</b>  Chair: Jyrki Kontio (<i>Helsinki University of Technology, Finland</i>)</p>
	<p>A Follow up Study of the Effect of Disruptions on the Performance of Software Engineering Teams  John S. Karn and Anthony. J. Cowling  (University of Sheffield, UK)</p>
	<p>An Empirical Study on Developers' Views on Software Reuse in Statoil ASA  Odd Petter Slyngstad<sup>1</sup>, Anita Gupta<sup>1</sup>, Reidar Conradi<sup>1</sup>, Parastoo Mohagheghi<sup>1</sup>, Harald Rønneberg<sup>2</sup> and Einar Landre<sup>2</sup>  (<sup>1</sup>Norwegian University of Science and Technology (NTNU), Norway; <sup>2</sup>Statoil KTJ/IT, Norway)</p>
	<p>Distributed versus Face-to-Face Meetings for Architecture Evaluation: A Controlled Experiment  Muhammad Ali Babar<sup>1,2</sup>, Barbara Kitchenham<sup>1</sup> and Ross Jeffery<sup>1,2</sup>  (<sup>1</sup>National ICT Australia Ltd, Australia; <sup>2</sup>University of New South Wales, Australia)</p>
10.00-10.30	<b>Coffee break</b>
10.30-12.00	<p><b>Session 6A: Software Testing</b>  <b>Ipamena Hall</b>  Chair: Maurizio Morisio (<i>Politecnico di Torino, Italy</i>)</p>
	<p>Improving Software Testing by Observing Causes, Effects, and Associations from Practice  Ossi Taipale and Kari Smolander  (Lappeenranta University of Technology, Finland)</p>
	<p>An Industrial Case Study of Structural Testing Applied to Safety-critical Embedded Software  Jing Guan, Jeff Offutt and Paul Ammann  (George Mason University, USA)</p>
	<p>An Empirical Evaluation of a Testing and Debugging Methodology for Excel  Jeffrey Carver<sup>1</sup>, Marc Fisher II<sup>2</sup> and Gregg Rothermel<sup>2</sup>  (<sup>1</sup>Mississippi State University, USA; <sup>2</sup>University of Nebraska – Lincoln, USA)</p>

	<p><b>Session 6B: Architecture and Refactoring</b>  <b>Leblon Hall</b>  Chair: Manoel Mendonça (<i>Salvador University, Brazil</i>)</p>
	<p>Common Refactorings, a Dependency Graph and some Code Smells: An Empirical Study of Java OSS  Steve Counsell<sup>1</sup>, Youssef Hassoun<sup>2</sup>, George Loizou<sup>3</sup> and Rajaa Najjar<sup>3</sup>  (<sup>1</sup>Brunel University, UK; <sup>2</sup>Imperial College, UK; <sup>3</sup>Birkbeck, University of London, UK)</p>
	<p>Drivers for Software Refactoring Decisions  Mika Mäntylä and Casper Lassenius  (Helsinki University of Technology, Finland)</p>
	<p>Eliciting Better Quality Architecture Evaluation Scenarios: A Controlled Experiment On Top-Down vs. Bottom-Up  Muhammad Ali Babar<sup>1,2</sup> and Stefan Biffi<sup>3</sup>  (<sup>1</sup>National ICT Australia Ltd, Australia; <sup>2</sup>University of New South Wales, Australia; <sup>3</sup>Vienna Technical University, Austria)</p>
	<p><b>Session 6C: Panel on Grand Challenges in Empirical Software Engineering</b>  <b>Rio de Janeiro Hall</b>  Chair: José Maldonado (<i>ICMC-USP/ São Carlos, Brazil</i>)</p>
	<p>Dieter Rombach  (<i>Fraunhofer Institute of Experimental Software Engineering, Germany</i>)  Natalia Juristo  (<i>Universidad Politécnica de Madrid, Spain</i>)  Guilherme Horta Travassos  (<i>COPPE/Federal University of Rio de Janeiro, Brazil</i>)  Barry Boehm  (<i>University of Southern California, USA</i>)</p>
12.00-13.30	<b>Lunch</b>
13.30-14.30	<p><b>Session 7A: Metrics and Measurement</b>  <b>Ipanema Hall</b>  Chair: Markku Oivo (<i>University of Oulu, Finland</i>)</p>
	<p>A Goal Question Metric Based Approach for Efficient Measurement Framework Definition  Patrik Berander and Per Jönsson  (Blekinge Institute of Technology, Sweden)</p>
	<p>Evaluating the Practical Use of Different Measurement Scales in Requirements Prioritisation  Lena Karlsson, Martin Höst and Björn Regnell  (Lund University, Sweden)</p>
	<p><b>Session 7B: Defect Classification</b>  <b>Rio de Janeiro Hall</b>  Chair: Natalia Juristo (<i>Universidad Politecnica de Madrid, Spain</i>)</p>
	<p>Requirements Error Abstraction and Classification: An Empirical Study  Gursimran S. Walia and Jeffrey Carver  (Mississippi State University, USA)</p>
	<p>Identifying Domain-Specific Defect Classes Using Inspections and Change History  Taiga Nakamura, Lorin Hochstein and Victor R. Basili  (University of Maryland, USA)</p>
	<p><b>Session 7C: Test-driven Development</b>  <b>Leblon Hall</b></p>

	Chair: Laurie Williams ( <i>North Carolina State University, USA</i> )
	Evaluating the Efficacy of Test-Driven Development: Industrial Case Studies Thirumalesh Bhat and Nachiappan Nagappan (Microsoft Research, USA)
	Evaluating Advantages of Test Driven Development: a Controlled Experiment with Professionals Gerardo Canfora <sup>1</sup> , Aniello Cimitile <sup>1</sup> , Felix Garcia <sup>2</sup> , Mario Piattini <sup>2</sup> and Corrado Aaron Visaggio <sup>1</sup> ( <sup>1</sup> <i>University of Sannio, Italy</i> ; <sup>2</sup> <i>University of Castilla-La-Mancha, Spain</i> )
14.30-15.00	<b>Plenary closing</b> <b><i>Rio de Janeiro Hall</i></b> Chair: Guilherme Travassos and José Maldonado Best paper awards Handover to ISESE 2007