



16th Asia-Pacific Software Engineering Conference (APSEC 2009)

| Monday, 30 November 2009: APSEC 2009 Workshop Day & SEPoW 2009 | | | |
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| Venue: Eureka Complex, Universiti Sains Malaysia, Penang | | | |
| 8:30-9:00 | Registration | | |
| 9:00-9:30 | Welcome Speech | | |
| Time/Venue | Auditorium | Room I | Room II |
| 9:30-12:30 | SEPoW 2009 (Panel I) | SEPoW 2009 (Panel II) | Industry-Academia-Research Discussion/Networking |
| 12:30-14:30 | Lunch | | |
| 14:30-16:30 | Workshop I: Evidence-Based Software Engineering D. Budgen <i>et al.</i> <i>Durham University, UK</i> | Tutorial I: Software Product Line in Small-to-Medium Size Companies S. Jarzabek <i>National University of Singapore</i> | Workshop II: T-Way Strategies: Hardware and Software Testing K. Z. Zamli and M. I. Younis <i>Universiti Sains Malaysia</i> |
| 16:30-17:00 | Tea Break and Networking | | |
| 17:00-18:00 | Continue Workshops/Tutorial | | |
| 18:00-19:30 | Sightseeing: University in the Garden | | |
| 19:30-22:30 | Welcome Reception | | |
| Tuesday, 1 December 2009: Conference Day I | | | |
| Venue: Grand Ballroom, Bayview Beach Resort, Batu Ferringhi, Penang | | | |
| 8:30-9:00 | Registration | | |
| 9:00-9:30 | Opening Ceremony | | |
| 9:30-10:30 | Keynote Speech I: Research Challenges for Institutionalizing Software Product Lines Prof. Jorge L. Díaz-Herrera <i>Rochester Institute of Technology in Rochester, New York, USA</i> | | |
| 10:30-11:00 | Tea Break | | |
| Time/Venue | Room I | Room II | Room III |
| 11:00-12:30 | Session 1A: Metrics and Measurement I (P001, P283, P230) | Session 1B: Software Design I (P266, P152, P051) | Session 1C: Verification and Validation I (P082, P058, P037) |
| 12:30-14:30 | Lunch | | |
| 14:30-16:30 | Session 2A: Requirements Engineering I (P043, P174, P194, P137) | Session 2B: Software Architecture (P179, P167, P245, P165) | Session 2C: Software Testing I (P183, P169, P024, P158) |
| 16:30-17:00 | Tea Break | | |
| 17:00-18:00 | Session 3A: Metrics and Measurement II (P092, P226) | Session 3B: Software Design II (P028, P215) | Session 3C: Aspect Oriented Programming (P044, P241) |
| Wednesday, 2 December 2009: Conference Day II | | | |
| 9:00 – 10:00 | Keynote Speech II: Symbolic Tracing for Program Reasoning Prof. Joxan Jaffar <i>National University of Singapore</i> | | |
| 10:00-10:30 | Tea Break | | |
| 10:30-12:30 | Session 4A: Requirements Engineering II (P123, P90, P68, P243) | Session 4B: Program Analysis (P109, P084, P049, P224) | Session 4C: Software Testing II (P156, P031, P121, P277) |
| 12:30-14:30 | Lunch | | |
| 14:30-19:00 | Excursion: Round Island | | |
| 19:30-22:30 | Dinner | | |
| Thursday, 3 December 2009: Conference Day III | | | |
| 9:00-10:00 | Keynote Speech III: Paradox between Software Development Productivity and Success Rate: Are we striking the right balance? Pathak Nirbhaya <i>Motorola Technology Sdn. Bhd., Penang, Malaysia</i> | | |
| 10:00-10:30 | Tea Break | | |
| 10:30-12:30 | Session 5A: Requirements Engineering III (P54, P285, P271, P074) | Session 5B: Software Maintenance (P270, P057, P268, P160) | Session 5C: Software Testing III (P096, P234, P228, P254) |
| 12:30-14:00 | Lunch | | |
| 14:00-16:00 | Session 6A: Project Management (P172, P182, P204, P045) | Session 6B: Software Process (P244, P290, P205, P292) | Session 6C: Verification and Validation II (P138, P029, P136, P035) |
| 16:00-16:30 | Closing | | |
| 16:30-17:00 | Tea Break | | |

Note: The programme is subject to change.

LIST OF PAPERS

Session 1A: Metrics and Measurement I

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| P001 | Improving the Accuracy of Software Effort Estimation based on Multiple Least Square Regression Models by Estimation Error-based Data Partitioning <i>Y-S Seo, K-A Yoon, and D-H Bae</i> (Korea) |
| P283 | Hierarchical Quality Assessment Model for Large-scale Object-Oriented System <i>J. Hwa, S. Lee, and Y. Kwon</i> (Korea) |
| P230 | On the Conversion between the Sizes of Software Products in the Life Cycle <i>C. Gencel, R. Heldal, and K. Lind</i> (Sweden) |

Session 1B: Software Design I

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| P266 | Investigating the Effect of Refactoring on Software Testing Effort <i>K. Elish and M. Alshayeb</i> (Saudi Arabia) |
| P152 | Extracting High-Level Functional Design from Software Requirements <i>V. S. Sharma, S. Sarkar, K. Verma, A. Panayappan, and A. Kass</i> (India and USA) |
| P051 | Identifying Fragments to Be Extracted from Long Methods <i>L. Yang, H. Liu, and Z. Niu</i> (China) |

Session 1C: Verification and Validation I

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| P082 | A graph based approach to detecting causes of implied scenarios under the asynchronous and synchronous communication styles <i>I-G Song, S-U Jeon, and D-H Bae</i> (Korea) |
| P058 | Extracting Environmental Constraints to Make Reactive System Specifications Realizable <i>S. Hagihara, Y. Kitamura, M. Shimakawa, and N. Yonezaki</i> (Japan) |
| P037 | Monitoring Web Service Composition with Universal Modal Sequence Diagram <i>W. Li and Z. Wang</i> (China) |

Session 2A: Requirements Engineering I

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| P043 | Critical Barriers for Offshore Software Development Outsourcing Vendors: A Systematic Literature Review <i>S. U. Khan, M. Niazi, and R. Ahmad</i> (UK and Pakistan) |
| P174 | Re-defining the Requirements Engineering Process Improvement Model <i>B. Solemon, S. Sahibuddin, and A. A. Abd Ghani</i> (Malaysia) |
| P194 | Insights into Domain Knowledge Sharing in Software Development Practice <i>J. Buchan, C. Ekaadharmawan, and S. MacDonell</i> (New Zealand) |
| P137 | The Context Dynamics Matrix (CDM): An Approach to Modelling Context <i>Z. Alshaiikh and C. Boughton</i> (Australia) |

Session 2B: Software Architecture

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|------|--|
| P179 | An Empirical Study of Software Architects' Concerns <i>H. B. Christensen, K. R. Schougaard, and K. M. Hansen</i> (Denmark and Iceland) |
| P167 | Attribute-Based Architecture Patterns for Lightweight Service-Oriented Architectures <i>M. Aoyama, T. Ikezaki, and N. Nakamichi</i> (Japan) |
| P245 | Tool Support for Component-Based Software Architectures <i>G. Buchgeher and R. Weinreich</i> (Austria) |
| P165 | Web Services Composition by I/O Data Structure Correspondences <i>Q. Wang and O. Shigo</i> (Japan) |

Session 2C: Software Testing I

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|------|---|
| P183 | Search-Based Testing Guidance Using Dominances vs. Control Dependencies <i>A. S. Ghiduk</i> (Egypt) |
| P169 | Analysis of the OLSR Protocol by using formal passive testing <i>C. Andres, S. Maag, A. Cavalli, M. G. Merayo, and M. Nunez</i> (Spain and France) |
| P024 | Variable Strength Interaction Testing with an Ant Colony System Approach <i>X. Chen, Q. Gu, A. Li, and D. Chen</i> (China) |
| P158 | Spectral Debugging with Weights and Incremental Ranking <i>L. Naish, H. J. Lee, and K. Ramamohanarao</i> (Australia) |

Session 3A: Metrics and Measurement II

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|------|---|
| P092 | Improve Analogy-based Software Effort Estimation Using Principal Components Analysis and Correlation Weighting <i>J. Wen, S. Li, and L. Tang</i> (China) |
| P226 | Investigating the Effect of Pair Programming and Software Size on Software Quality and Programmer Productivity <i>R. Sison</i> (Philippines) |

Session 3B: Software Design II

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| P028 | Describing Pattern Languages for Checking Design Models <i>B. Zamani and G. Butler</i> (Canada) |
| P215 | An Efficient Context-based User Interface by Exploiting Temporality of Attributes <i>M. Kumara Swamy and P. Krishna Reddy</i> (India) |

Session 3C: Aspect Oriented Programming

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| P044 | Aspect Oriented Programming Made Easy: An Embedded Pointcut Language <i>A. Cisternino and S. Vaucouleur</i> (Italy and Denmark) |
| P241 | Analysis and Composition of Multiple Aspects <i>Nafees Qamar</i> (France) |

Session 4A: Requirements Engineering II

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| P123 | Elicit the Requirements on Software Dependability: A Knowledge-Based Approach <i>C. Liu, Y. Wang, and Z. Jin (China)</i> |
| P090 | Modeling Access Control Requirements in Feature Model <i>L. Sun, and G. Huang (China)</i> |
| P068 | Performing Projection in Problem Frames Using Scenarios <i>Z. Jin, X. Chen, and D. Zowghi (China and Australia)</i> |
| P243 | A Light-Weight Formal Approach for Modeling, Verifying and Integrating Role-Based Access Control Requirements <i>S. Zafar (Pakistan)</i> |

Session 4B: Program Analysis

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| P109 | Contribution-Based Call Stack Abstraction and Its Application in Pointer Analysis of AspectJ Programs <i>J. Qian and B. Xu (China)</i> |
| P084 | Program Sifting for Language-based Static Analysis <i>K. Yu, C. Wang, Y-L. Chen, and M-X. Lin (China)</i> |
| P049 | Avoiding Some Common Preprocessing Pitfalls with Feature Queries <i>S. Jarzabek, Y. Xue, H. Zhang, and Y. Lee (Singapore and China)</i> |
| P224 | Sequence Diagram Slicing <i>K. Noda, T. Kobayashi, S. Yamamoto, and K. Agusa (Japan)</i> |

Session 4C: Software Testing II

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| P156 | Test Coverage Metric for Two-staged Language with Abstract Interpretation <i>T. Kim, C. Lee, K. Lee, S. Baik, K. Yi, and C. Wu (Korea)</i> |
| P031 | Analysis of Problems in Testing Practices <i>J. Kasurinen, O. Taipale, and K. Smolander (Finland)</i> |
| P121 | Unit testing approaches for BPEL: A Systematic Review <i>Z. Zakaria, A. A. Abdul Ghani, R. Atan, and N. F. Mohd. Sani (Malaysia)</i> |
| P277 | Scheduling Test Execution of WBEM Applications <i>L. Yu, Y. Su, and Q. Wang (China)</i> |

Session 5A: Requirements Engineering III

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| P054 | Incomplete Software Requirements and Assumptions Made by Software Engineers <i>Ö. Albayrak (Turkey)</i> |
| P285 | Requirements Identification and Representation in Software Product Line <i>S. Abd Halim, D. N. A. Jawawi, and S. Deris (Malaysia)</i> |
| P271 | Propagating Requirement Change into Software Designs to Resilient Software Evolution <i>N. Ibrahim, W. M.N. Wan Kadir, and S. Deris (Malaysia)</i> |
| P074 | Model-driven Automatic Generation of Verified BPEL Code for Web Service Composition <i>B. Li, J. Pang, and Y. Zhou (China and Luxembourg)</i> |

Session 5B: Software Maintenance

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| P270 | Problematic Code Clones Identification Using Multiple Detection Results <i>Y. Higo, K-I. Sawa, and S. Kusumoto (Japan)</i> |
| P057 | Code Clone Graph Metrics for Detecting Diffused Code Clones <i>Y. Fukushima, R. Kula, S. Kawaguchi, K. Fushida, M. Nagura, and H. Iida (Japan)</i> |
| P268 | Assessing Corrective, Enhancive, and Reductive Maintenance Tasks: A Controlled Experiment <i>V. Nguyen, B. Boehm, and P. Danphitsanuphan (USA and Thailand)</i> |
| P160 | Identifying Stagnation Periods in Software Evolution by Replaying Editing Operations <i>T. Omori and K. Maruyama (Japan)</i> |

Session 5C: Software Testing III

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| P096 | Fault Localization Based on Multi-Level Similarity of Execution Traces <i>X. Wang, Q. Gu, X. Zhang, X. Chen, and D. Chen (China)</i> |
| P234 | Directed Test Suite Augmentation <i>Z. Xu and G. Rothermel (USA)</i> |
| P228 | Checking Model Consistency using Data-Flow Testing <i>C-W. Wang and A. Cavarra (UK)</i> |
| P254 | An Effective Path Selection Strategy for Mutation Testing <i>M. Papadakis and N. Malevris (Greece)</i> |

Session 6A: Project Management

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| P172 | Establishing a User Experience Team in a Software Organization: A Case Study <i>J. Heiskari and L. Lehtola (Finland)</i> |
| P182 | Extracting Development Organization from Open Source Software <i>J. Han, B. Lee, and C. Wu (Korea)</i> |
| P204 | Project Management Using Risk Identification Architecture Pattern (RIAP) Model: a Case Study on a Web-Based Application <i>T. Al-Rousan, S. Sulaiman, and R. Abdul Salam (Malaysia)</i> |
| P045 | Risks Identification and Mitigation Processes for Using Scrum in Global Software Development: A Conceptual Framework <i>E. Hossain, M. Babar, H-Y. Paik, and J. Verner (Australia and Ireland)</i> |

Session 6B: Software Process

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| P244 | An Automatic Compliance Checking Approach for Software Processes <i>X. He, J. Guo, Y. Guo, Y. Wang, and J. Ma (China)</i> |
| P290 | A Push for Software Process Improvement in Thailand <i>P. Mongkolnam, U. Silparcha, N. Waraporn, and V. Vanijja (Thailand)</i> |
| P205 | Applying a Systematic Approach to Link Requirements and Testing – a Case Study <i>J. Kukkanen, M. Kauppinen, E. Uusitalo, and K. Väkeväinen (Finland)</i> |
| P292 | A Formal Framework to Integrate Timed Security Rules within a TEFSM-Based System Specification <i>W. Mallouli, A. Mammam, and A. Cavalli (France)</i> |



Session 6C: Verification and Validation II

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| P138 | Towards Automated Verification of Distributed Consensus Protocols <i>T. Minamikawa, T. Tsuchiya, and T. Kikuno</i> (Japan) |
| P029 | A Method for Modeling and Analyzing Fault-Tolerant Service Composition <i>G. Fan, H. Yu, L. Chen, and D. Liu</i> (China) |
| P136 | Modular Checking of C programs using SAT-based Bounded Model Checker <i>Y. Hashimoto and S. Nakajima</i> (Japan) |
| P035 | Selecting Usability Evaluation Methods for Software Process Descriptions <i>M. N. Mahrin, P. Strooper, and D. Carrington</i> (Malaysia and Australia) |