
COMPSAC is the major international forum for researchers, practitioners, managers, and policy makers interested in computer software and applications. The planned program will include original research papers, participative workshops, and discussion panels.

For more information, visit COMPSAC2005 official home page at http://aquila.nvc.cs.vt.edu/compsac2005/

## COMPSAC 2005 At-a-Glance

### Tuesday, July 26

- **9:00** Opening Session
- **9:30** Keynote Address (1): Graham Spittle

### Parallel Sessions:

1. Software Testing (1)
2. Process Management
3. Software Architecture and Metric
4. Security and Privacy (1)

### Lunch Break

12:30-14:00

### Coffee Break

10:30-11:00
11:00-12:30

### Wednesday, July 27

- **9:00** Plenary Panel: Security and Privacy in Distributed Collaborative Systems

### Parallel Sessions:

1. 13 Internet Web Systems
2. 25 Software Testing (2)
3. 14 Verification and Validation
4. 26 Dependability and Fault Tolerance

### Lunch Break

12:30-14:00

### Coffee Break

12:30-14:00

### Thursday, July 28

- **9:00** Keynote Address (2): Jeena Srinivas

### Parallel Sessions:

1. 27 Panel: How Democratic will e-Democracy be?
3. 29 Security and Privacy (2)

### Lunch Break

12:30-14:00

### Coffee Break

12:30-14:00

### Conference Banquet

18:30

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**CONFERENCE VENUE:**

William Robertson Building, University of Edinburgh
Tuesday July 26, 2005

09:00-10:30 Opening Session
- Welcome and Remarks: General Chair: Malcolm Atkinson, University of Edinburgh & the National e-Science Centre, UK
- Greetings and Remarks: Standing Committee Chair: Stephen S. Yau, Arizona State University, USA
- Additional Remarks: Incoming Standing Committee Chair: Carl Chang, Iowa State University, USA

09:30-10:00 Panel: PROCESS MANAGEMENT Panel: PLANNING MEETING FOR COMPSAC 2006 NETWORK, DISTRIBUTED, AND EMBEDDED SYSTEMS (1)
Panelists: Maarten Boasson, University of Amsterdam, Netherlands, and Ian Oliver, Nokia, and Mike Mannion, and Hailang Zuo, Glasgow Caledonian University, UK
Moderator: Barrie Thompson, University of Sunderland, UK

10:30-11:00 Coffee Break

11:00-12:30 Parallel Sessions

Session 1: SOFTWARE TESTING (1)
Chair: Hongji Yang, De Montfort University, UK
- Incremental Class Testing from a Class to a Method, Yvan Labiche, Carleton University, Canada
- Configuration-Oriented Symbolic Test Sequence Construction Method for EFSM, Shuhao Li, Jif Wagner, Xin Wang and Zhi-Chang Qi, National Laboratory for Parallel and Distributed Processing, China
- Iterative Metamorphic Testing, Peng Wu, Chinese Academy of Sciences, China
- Software Test Selection Patterns and Elusive Bugs, William E. Howden, University of California at San Diego, USA

Session 2: PROCESS MANAGEMENT
Chair: Doo-Hwa Baek, KAIST, Korea
- DBG: A Tool for Software Process Data Extraction and Grooming, Scott D. Miller, Aditya P. Mathur, and Raymond A. DeCarlo, Purdue University, USA
- A Defect Estimation Approach for Sequential Inspection using a Modified Capture-Recapture Model, Ching-Pao Chang, Jia-Lyn Ly, Chih-Ping Chu, National Cheng Kung University, Taiwan
- Parallel Changes: Detecting Semantic Interferences, G. Lorenzo Thione, FX Palo Alto Laboratory, and Dewayne E. Perry, University of Texas at Austin, USA

Session 3: SOFTWARE ARCHITECTURE AND METRIC
Chair: Carl Chang, Iowa State University, USA
- A Productivity Metric Based on Statistical Pattern Recognition, Jody L. Sharpe and Joao W. Cangussu, University of Texas at Dallas, USA
- Optimizing and Simplifying Software Metric Models Constructed Using Maximum Likelihood Methods, Victor K.Y. Chan, Macao Polytechnic Institute, China, and Eric Wong, University of Texas at Dallas, USA
- Structure Analysis for Dynamic Software Architecture based on Spatial Logic, Tingting Han, Tao-Lue Chen, Jian Lu, Nanjing University, China
- Performability Analysis of a Pipeline Software Architecture, Swapna S. Gokhale, University of Connecticut, USA, and Sherif Yacoub, HP Labs, Spain

Session 4: PANEL: HIGH ASSURANCE SOFTWARE FOR MOBILE TELE-HEALTH SYSTEMS
Moderator: Lecal Jose, Motorola, USA
Panellists: Francisco Del Pozo, Ciudad Universitaria, Spain
Robert S. H. Istepanian, Kingston University, UK
Douglas J. McClure, Partners Healthcare System, USA

12:30-14:00 Lunch Break

14:00-15:30 Parallel Sessions

Session 5: SOFTWARE RE-ENGINEERING AND SERVICE-BASED SYSTEMS
Chair: Bruce M. McMillin, University of Missouri-Rolla, USA
- An Extended Approach to Improving the Semantic Interoperation among Reuse Repositories, Ying Pan, Lei Wang, Lu Zhang, Bing Xie, and Faqing Yang, Peking University, China
- An Empirical Study of a Reverse Engineering Method for the Aggregation: Relationship Based on Operation Propagation, Downing Ye, Pei-Chen Sun, National Kaohsiung Normal University, William Chu, TungHai University, Chien-Lung Lin, Silconware Precision Industries, Taiwan, and Hongji Yang, De Montfort University, UK
- Adaptive Testing, Oracle Generation, and Test Script Ranking for Web Services, Wei-Tek Tsi, Yinong Chen, Arizona State University, Ray Paul, Department of Defense, Hai Huang, Xinyu Zhou, and Xiao Wei, Arizona State University, USA
- Situation-awareness for Adaptable Service Coordination in Service-based Systems, S. S. Yau, D. Huang, H. Gong, and H. Develucu, Arizona State University, USA

Session 6: MIDDLEWARE AND AGENT-BASED SYSTEMS
Chair: Dongman Lee, Information and Communications University, Korea
- Self Configuring Communication Middleware Model for Multiple Network Interfaces, Nader Mohamade, Stevens Institute of Technology, USA
- Using Aspect Oriented Techniques to Support Separation of Concerns in Model Driven Development, Amor Solberg, SINTEF, Norway, and Devon Simmonds, Raghu Reddy, Sudipto Ghosh, and Robert France, Colorado State University, USA
- Agent Oriented Programming based on SLABS, Jiwang and Rui Shen, National Laboratory for Parallel and Distributed Processing, China, and Hong Zhu, Oxford Brookes University, UK
- Intention Scheduling for RMI Agent Systems, Shung-Bin Yan, Za-Nien Lin, Hsun-Jen Hu, and Feng-Jian Wang, National Chiao Tung University, Taiwan

Session 7: SECURITY AND PRIVACY (1)
Chair: Bhavani Thuraisingham, University of Texas at Dallas, USA
- Detecting Intrusions Specified in a Software Specification Language, Mohammad Feroz Rahain and Mohammad Zulkernine, Queen’s University, Canada
- SecureC: Control-flow Protection against General Buffer Overflow Attack, Hiroyasu Nishiyama, HITACHI, Japan
- Buffer Overflow Prevention through Component Composition Analysis, David Llewellyn-Jones, Madjid Merabti, Qi Shi, and Bob Askwith, Liverpool John Moores University, UK
- Efficiently Managing Security Concerns in Component Based System Design, Ammar Masood, Purdue University, Sahra Sedigh-Ali, University of Missouri at Rolla, and Arif Ghafoor, Purdue University, USA

Session 8: PANEL: INDUSTRY AND ACADEMIA: CAN THEY AGREE ON BEST PRACTICE WITHIN SOFTWARE ENGINEERING?
Moderator: Barrie Thompson, University of Sunderland, UK
Panellists: Maarten Boasson, University of Amsterdam, Netherlands
Steven Chen, Motorola, USA
Pierre Bourke, Eole de Technologie Superieure, Canada
15:30-16:00 Coffee Break
16:00-17:30 Parallel Sessions

Session 9: REQUIREMENT & DESIGN (1)
Chair: Feng-Jian Wang, National Chiao Tung University, Taiwan
- The Vital Few versus the Trivial Many: Examining the Pareto Principle for Software, Mechellie Gittens, Yong Woo Kim, and David Godwin, IBM
- Transitioning from Product Line Requirements to Product Line Architecture, Juha Savolainen, and Ian Oliver, Nokia, and Mike Mannion, and Hai-lang Zuo, Glasgow Caledonian University, UK
- Designing Controllers for Reachability, Cristina Cerschi Seceleamu, Abo Akademi University, Finland
- Classifying Melodies by Using EM Algorithm, Yukiteru Yoshihara and Takao Miura, Hosei University, Japan

Session 10: FORMAL METHODS
Chair: Qianxiang Wang, Peking University, China
- A Formal Approach to Designing Class-structures, Sukhsmay Kundo, Louisiana State University, and Nigel Gwee, Southern University, USA
- A Family of Extended Fuzzy Description Logics, Yanhui Li, Baowen Xu, Jianjiang Lu, Dazhou Kang, and Jixiang Jiang, Southeast University, China
- Extended Symbolic Transition Graphs with Assignment, Wei-ju Deng and Huimin Lin, Chinese Academy of Sciences, China
- MetaWSL and Meta-Transformations in the FetaTo Transformation System, Martin Ward and Husseion Zedan, De Montfort University, UK

Session 11: NETWORK, DISTRIBUTED, AND EMBEDDED SYSTEMS (1)
Chair: Using AOP to Monitor and Administer Software for Grid Computing Environments, Mark Grechanik, Dewayne E. Perry, and Don Batory, University of Texas at Austin, USA
- Nearest Neighbor Queries on Extensible Grid Files Using Dimensionality Reduction, Ryosuke Mioyoshi, and Takao Miura, Hosei University, and Isamu Shioya, SANNO University, Japan
- Power Transmission Control Using Distributed Max Flow, A. Armbruster, M. Gossnell, B. McMillin and M. L. Crow, University of Missouri-Rolla, USA

Session 12: PANEL: PLANNING MEETING FOR COMPSAC 2006

19:30- Conference Reception
Wednesday July 27, 2005

09:00-10:30 Plenary Panel Session: Security and Privacy in Distributed Collaborative Systems
Chair: Stephen S. Yau, Arizona State University, USA
Panelists: Piero A. Bonatti, University of Napoli “Federico II”, Italy
Dengguo Feng, Institute of Software, Chinese Academy of Science, China
Bhavani Thuraisingham, University of Texas at Dallas, USA

10:30-11:00 Coffee Break

11:00-12:30 Parallel Sessions

Session 13: INTERNET WEB SYSTEMS
Chair: Eric Wong, University of Texas at Dallas, USA
• Tree-oup Visualization for Web Accessibility, John Bailey and Liz Burd, University of Durham, UK
• Personal Data License Design and Negotiation, Yuh-Jzer Joung, Cheng Yen, Chung-Tang Huang, Yi-Jhan Huang, National Taiwan University, Taiwan
• Adapting Single-Request/ Multiple-Response Messaging to Web Services, Michael Ruth, Feng Lin, and Shengpu Tu, University of New Orleans, USA
• A Web Data Extraction Description Language and Its Implementation, I-Chen Wu, Jui-Yuan Su, National Chiao Tung University, and Loon-Been Chen, Tunghai University, Taiwan

Session 14: VERIFICATION AND VALIDATION
Chair: William Howden, University of California at San Diego, USA
• A Blocking-Based Approach to Protocol Validation, Yu Lei, David Kung, and Qizhi Ye, University of Texas at Arlington, USA
• An Empirical Performance-based Approach for Validating a Performance Analysis Approach: PSIM, Jinchun Xia, Yujia Ge, Carl K. Chang, Iowa State University, USA
• Empirical Validation of Website Timeliness Metrics, Yanlong Zhang, Manchester Metropolitan University, Hong Zhu and Sue Greenwood, Oxford Brookes University, UK
• Hybrid Intelligent Systems: Selecting Attributes for Software Analysis, Puntip Pattaranatkov and Nick Cercene, Dalhousie University, Canada, and Kanlaya Naruedomkul, Mahidol University, Bangkok

Session 15: PANEL: MODEL-BASED SOFTWARE TESTING AND VERIFICATION
Moderator: Aditya Mathur, Purdue University, USA
Panelists: Mats Heimdahl, University of Minnesota, USA
Ashish Jain, Telecordia, USA
T.H. Tse, The University of Hong Kong, Hong Kong
Fevzi Belli, University of Paderborn, Germany

Session 16: WORKSHOP on SOFTWARE CYBERNETICS (1) – CONTROL SYSTEMS FOR SOFTWARE CYBERNETICS
Chair: Kai-Yuan Cai, Beijing University of Aeronautics and Astronautics, China
• Keynote Speech: The information age: challenges and opportunities for control and engineering, J. D. Birdwell, University of Tennessee, USA
• State space techniques for software security quantification, Christopher Griffin, Bharat B. Madan, Penn State University, USA, and Kishor S. Trivedi, Duke University, USA
• Requirement process establishment and improvement: from the viewpoint of cybernetics, Hong Xu, Beijing University of Aeronautics and Astronautics, China, Pete Sawyer and Ian Sommerville, Lancaster University, USA
• FMECA control for software development, James H. Graham, University of Louisville, USA
• Supervisory Control of Time Petri Nets Using Net Unfolding, Ugo Buy, Hoanghang Darabi, Mihai Lehtene, and Viktor Valveny, University of Illinois at Chicago, USA

12:00-14:00 Lunch Break

14:00-15:30 Parallel Sessions

Session 17: MOBILE AND PERSUASIVE/UBIQUITOUS COMPUTING
Chair: Stephen Chen, Motorola Global Software Group, USA
• A Probabilistic Approach to the Anxious Home for Activity Monitoring, Geoff West, Stewart Greenhill and Svetha Venkatesh, Curtin University of Technology, Australia
• Exception Handling in Coordination-based Mobile Environments, Alexei Iliasov, and Alexander Romanovskiy, University of Newcastle upon Tyne, UK
• A User Adaptable User Interface Model to Support Ubiquitous User Access to Information Applications, Jon Davis, Andrew Turney, Elizabeth Chang, Curtin University of Technology, Australia
• A Dynamic Context-Conflict Management Scheme for Group-aware Ubiquitous Computing Environments, Insuk Park, Dongman Lee, and Soon J. Hyun, Information and Communications University, Korea

Session 18: PANEL: 21ST CENTURY GLOBAL SOFTWARE DEVELOPMENT AND EDUCATION
Moderator: Dick Simmons, Texas A&M University, USA
Panelists: Chris Nelson, IBM, USA
Victoria Livschitz, Sun Microsystems, USA
James Cross, Auburn University, USA
Xiaoqing (Frank) Liu, University of Missouri, USA
Barrie Thompson, University of Sunderland, UK

Session 19: WORKSHOP on QUALITY ASSURANCE and TESTING of WEB-BASED APPLICATIONS (1)
Chair: Hong Zhu, Oxford Brooke University, UK
• An Agent-based Testing Approach for Web applications, Yu Qi, University of Texas at Dallas, David Kung, University of Texas at Arlington, Eric Wong, University of Texas at Dallas, USA
• Autonomous Hot Patching for Web-Based Applications, Hai Huang, Wei-tek Tsai, and Yinong Chen, Arizona State University, USA
• A Testing Approach for XML Schemas, Maria Claudia F. P. Emer, State University of Campinas, Brazil, Silvia Regina Vergilio, Federal University of Paraná, Brazil, Mario Jino, State University of Campinas, Brazil

Session 20: WORKSHOP on SOFTWARE CYBERNETICS (2) – SOFTWARE TESTING PROCESS CONTROL
Chair: Fevzi Belli, University of Paderborn, Germany
• A software cybernetic approach to control of the software system test phase, Scott D. Miller, Raymond A. DeCarlo, and Aditya P. Mathur, Purdue University, USA
• Test-ability in unit testing, Sami Beydada, Federal Finance Office, Germany
• Partition testing with dynamic partitioning, Kai-Yuan Cai, Tao Jing, and Cheng-Gang Bai, Beijing University of Aeronautics and Astronautics, China
• Novelty detection for a neural network-based online adaptive system, Yan Liu, Bojan Cucic, E. Fuller, Srikanth Gururajan, and S. Yerramalll West Virginia University, USA
• A control approach for agile processes, Joao W. Cangussau, University of Texas at Dallas, USA, and Richard M. Karcich, Pillar Data Systems, USA
• On the potential of process simulation in software project schedule optimization, Frank Padberg, Universitat Karlsruhe, Germany

15:30-16:00 Coffee Break

16:00-17:30 Parallel Sessions

Session 21: REQUIREMENT & DESIGN (2)
Chair: William C. Chu, Tung Hai University, Taiwan
• A Tool and Case Study for Specification-based Program Review, Fumiko Nagoya, Shaoying Li, and Yuting Chen, Hosei University, Japan
• Tridirectional Computed Chaining: An Efficient Hashing Algorithm for Limited Space Applications, Mitchell Loeb, IBM, and Alan L. Thrup, North Carolina State, USA
• A Requirement Engineering Approach for Designing XML-View Driven, XML Document Warehouses, Vicky Nasso, La Trobe University, Rajanau R. and Tharam S Dillon, University of Technology, and Wenny Rahayua, La Trobe University, Australia
• Structured Object-Oriented Co-Analysis/Co-Design of Hardware/Software for the FACTS Power System, Matt Ryan, Sojan Markose, Xiaoqing (Frank) Liu, Bruce McMillin, Ying Cheng, University of Missouri at Rolla, USA

Session 22: RELIABLE SYSTEMS
Chair: Maarten Boasson, University of Amsterdam, The Netherlands
• Gompertz Software Reliability Model and its Application, Koji Ohishi, Hiroyuki Okumura and Tadashi Dohi, Hiroshima University, Japan
• Software Reliability Growth Model considering Testing Profile and Operation Profile, Jing Zhao, Hong-Wei Liu, Gang Cui, Xiao-Zong Yang, Harbin Institute of Technology, China
• RIES - Internet Voting in Action, Engelbert Hubbers, Bart Jacobs and Wolter Pieters, Radboud University Nijmegen, The Netherlands
• Two Variations to the mcESG Pollsterless e-Voting Scheme, Tim Storer and Ijaheb Duncan, University of St. Andrews, UK
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<td><strong>Chair:</strong> Jerry Gao, San Jose State University, USA</td>
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<td>- Fault Injection Approach based on Dependence Analysis, Regina Lúcia de Oliveira Mores, State University of Campinas, Eliane Martins, Institute of Computing, and Naailiel Vicente Mendes, State University of Campinas, Brazil</td>
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<td>- Reasoning about Software Architecture-based Regression Testing through a Case Study, Henry Muccini, University of L’Aquila, Italy, Marcio Dias, University of Durham, UK, and Debra J. Richardson, University of California Irvine, USA.</td>
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<td>- Automated Harvesting of Test Oracles for Reliability Testing, Oliver Hummel and Colin Atkinson, University of Mannheim, Germany</td>
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<td><strong>Chair:</strong> Wei-tek Tsai, Arizona State University, USA</td>
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<td>- Scoped Broadcast in Dynamic Peer-to-Peer Networks, Hung-Chang Hsiao and Chung-Ta King, National Tsing-Hua University, Taiwan</td>
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<td>- Character Recognition System for Cellular Phone with Camera, K. S. Bae, K. K. Kim, Y. G. Chung, W. P. Yu, Electronics and Telecommunications Research Institute, Korea</td>
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<td>- Towards a Contract Aware CORBA Component Container, Egon Teiniker, Robert Lechner, Gernot Schmoelzer, Christian Kreiner, and Zsolt Kovacs, Graz University of Technology, Austria, and Reinhold Weiss, Salomon Automation GmbH, Austria</td>
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<th>Session 34: FAST ABSTRACT (3) - DATA MINING AND KNOWLEDGE MANAGEMENT</th>
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<td><strong>Chair:</strong> Baowen Xu, Southeast University, China</td>
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<td>- Recovering “Lack of words” in Text Categorization for Item Ranks, Atorn Nuntiyagul, Mahidol University, Thailand, Nick Cercone, Dalhousie University, Canada, and Kanlaya Naruedomkul, Mahidol University, Thailand</td>
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<td>- Searching Design Patterns in Source Code, Detlef Streitferdt, Christian Heller, and Ilka Philippou, Ilmenau Technical University, Germany</td>
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<td>- A Probabilistic Evaluation Function for Relaxed Unification, Tony Abou-Assaleh, Nick Cercone, and Vlado Keselj, Dalhousie University, Canada</td>
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<td>- Association Rule Based Data Mining Agents for Personalized Web Caching, Sujaa Rani Mohan, E.K. Park, and Yijie Han, University of Missouri, Kansas City</td>
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<td>- Data Mining Application in Customer Relationship Management of Credit Card Business, Ruey-Chyi Wu, Ruey-Shun Chen, Chan-chine Chang and J.Y. Chen, National Chiao Tung University, Taiwan</td>
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<td>- Similarity Measurement between Images, Chaur-Chin Chen and Hsueh-Ting Chu, National Tsing Hua University, Taiwan</td>
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**Session 35: WORKSHOP on MODEL-DRIVEN AGILE DEVELOPMENT (2) - COMPONENT-BASED AGILE DEVELOPMENT**

**Chair:** Ramesh Bharadwaj, Naval Research Laboratory, USA

- From Extreme Programming and Usability Engineering to Extreme Usability, Andreas Holzinger, Maximilian Errath, Gig Searle, Medical University Graz, Bettina Thurnher, Vienna University of Technology, and Wolfgang Slany, Graz University of Technology, Austria
- Experiences with a Dialog-Driven Process Model for Web Application Development, Matthias Book and Volker Grahn, University of Leipzig, Germany

**Session 36: WORKSHOP on TESTING and QUALITY ASSURANCE of COMPONENT BASED SYSTEMS (2) - COMPONENT VALIDATION, QUALITY MEASUREMENT AND TEST AUTOMATION**

**Chair:** Sahra Sedigh-Ali, University of Missouri at Rolla

- Towards Self-Testing of Component-Based Software, Fevzi Belli and C.J. Budnik, University of Paderborn, Germany
- A Component Testability Model for Verification and Measurement, Jerry Gao and Ming-Chih Shin, San Jose State University, USA
- A Framework for Efficient Contract-based Testing of Software Components, Egon Valentini, Gerhard Fliess and Edmund Haselwanter, Graz University, Austria

**Session 36: WORKSHOP on TESTING and QUALITY ASSURANCE of COMPONENT BASED SYSTEMS (2) - COMPONENT VALIDATION, QUALITY MEASUREMENT AND TEST AUTOMATION**

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17:30 End of Program