



**IEEE/ACIS 5<sup>th</sup> International Conference on  
Computer & Information Science (IEEE/ACIS ICIS06)**

**In conjunction with  
IEEE/ACIS 1<sup>st</sup> International Workshop on CBSE, Software Architecture and  
Reuse (IEEE/ACIS COMSAR06)**

**July 10-12, 2006, Sheraton Moana Surfrider Hotel, Honolulu, Hawaii, USA**

**Technical Program**

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**Monday, July 10, 2006**

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**7:00-9:00      Registration      Admiral's Room**

**9:00-9:30      Opening Remarks      Parlor**

*Roger Lee & Naohiro Ishii, Conference Co-chairs  
Brain Malloy, Program Chair*

**9:30-10:30      Keynote      Parlor**

*Session Chair: Yeong-Tae Song (Towson University, USA)*

**Getting in Touch With Your Feelings about Software Architecture**

*Dr. Rob Wojcik,  
Software Engineering Institute  
Carnegie Mellon University, U.S.A.*

**10:30-10:50      Coffee Break      Ballroom Foyer**

**10:50-12:30      Session 1 A & 1B**

**1A: Parallel and Distributed Computing & Systems      Parlor**

*Session Chair: Thuy Le (San Jose State University, USA)*

1. A Grid Scheduling Algorithm for Bag-of-Tasks Applications Using Multiple Queues with Duplication  
*Young Choon Lee and Albert Y. Zomaya (Univeristy of Sydney, Australia)*
2. A VQ compression algorithm for a multiprocessor system with a global sort collective function  
*Akiyoshi Wakatani (Konan Univ, Japan)*

3. Optimized algorithm for computing invariants of ordinary Petri nets  
*C. F. Law, B. H. Gwee, and J. S. Chang (Nanyang Tech Univ, Singapore)*
4. Radiative Heat Transfer Simulation Using Programmable Graphics Hardware  
*Hiroyuki Takizawa and Hiroaki Kobayashi (Tohoku Univ, Japan), Noboru Yamada Nagaoka Univ of Tech, Japan) and Seigo Sakai (Yokohana National Univ, Japan)*
5. Model the MPI Performance for Non-Contiguous Data  
*Thuy T. Le (San Jose State University, USA)*

## **1B: Software Metrics & Project Management**

**Board Room**

**Session Chair: Yeong-Tae Song (Towson University, USA)**

1. An Empirical Study to Investigate Software Estimation Trend in Organizations Targeting CMMI-SM  
*Mehwish Nasir (NIIT, NUST, Pakistan)*
2. Decoupling Metrics for Services Composition  
*Kai Qian and Frank Tsui (Southern Polytechnic State Univ, USA), Jigang Liu (Metropolitan State Univ, USA)*
3. Improving Accuracy of Multiple Regression Analysis for Effort Prediction Mode  
*Kazunori Iwata (Aichi Univ, Japan), Yoshiyuki Anan (Omron Software LT\td, Japan), Toyoshiro Nakashima (Sugiyama Jogakuen Univ, Japan) and Naohiro Ishii (Aichi Inst of Tech, Japan)*
4. An Approach to analyzing the Windows and Linux Security Models  
*Mark Song, Michael Stinson, Roger Lee, and Paul Albee (Central Michigan University, USA)*

**12:30-1:40    Luncheon (Complimentary)**

**Ballroom II**

**1:40-3:40    Session 2A & Session 2B**

## **2A: Communication Systems & Networks**

**Parlor**

**Session Chair: Shang-Juh Kao (National Chung-Hsing University, Taiwan)**

1. A Hierarchical Packet Scheduler for Differentiated Services in High-Speed Networks  
*Chin-Chi Wu, Hsien-Ming Wu and Woei Lin (National Chung-Hsing Univ, Taiwan), Chiou Moh (Nan-Kai Inst of Tech, Taiwan)*
2. Design of customer-based AQM routers to achieve fair inter-server bandwidth allocation  
*Hsien-Ming Wu, Chin-Chi Wu and Woei Lin (National Chung-Hsing Univ, Taiwan)*
3. Reducing the Requirement in FEC Codes via Capillary Routing  
*Emin Gabrielyan and Roger Hersch (Swiss Fed Inst of Tech, Switzerland)*

4. Topology Discovery for Coexisting IPv6 and IPv4 Networks  
*I-Ping Hsieh and Shang-Juh Kao (National Chung-Hsing Univ, Taiwan)*
5. Security Gateway for Accessing IPv6 WLAN  
*Chih-Mou Shih and Shang-Juh Kao (National Chung-Hsing Univ, Taiwan)*

## **2B: COMSAR Workshop I**

**Board Room**

**Session Chair:** **Axel Korthaus (University of Mannheim, Germany)**

1. Using Dynamic Slicing to Analyze Change Impact on Role Type Based Component Composition Model  
*Tie Feng (Jilin University, China), and Jonathan Maletic*
2. Mapping COSA Software Architecture Concepts into UML 2.0  
*Tahar Khammaci, Adel Smeda and Mourad Oussalah (University of Nantes, France)*
3. Multi-Agent Testing Architecture for Monitoring and Analyzing the Performance of Web Applications  
*Huiming Yu (North Carolina A&T State Univ, USA), Jin Zhang, Jinsheng Xu*
4. Analyzing Security Interoperability During Component Integration  
*Ebenezer Oladimeji (Verizon Comm., USA) and, Lawrence Chung (University of Texas at Dallas, USA)*
5. A Distributed Topic Map Architecture for Enterprise Knowledge Management  
*Axel Korthaus, Stefan Henke, Markus Aleksy and Martin Schader (Univ of Mannheim, Germany)*

**3:40-4:00**      **Coffee Break**

**Ballroom Foyer**

**4:00-6:00**      **Session 3A & Session 3B**

## **3A: Data Mining, Data Warehousing & Database**

**Parlor**

**Session Chair:** **Naohiro Ishii (Aichi Institute of Technology, Japan)**

1. Fault Tolerant Non-trivial Repeating Pattern Discovering for Music Data  
*Yu-lung Lo and Chun-yu Chen (Chaoyang Univ of Tech, Taiwan)*
2. A Study for Forecasting Water Supply Demand in the Area-K Waterworks Service Area  
*Yukio Maruyama (Japan Bio Info Research Ctr, Japan) and Hisashi Yamamoto (Tokyo Metropolitan Univ, Japan)*
3. Incorporating Heterogeneous XML formats using Relational Database  
*Sungchul Hong and Yeong-Tae Song (Towson Univ, USA)*
4. Text Classification by Combining Grouping, LSA and kNN  
*Naohiro Ishii, Tsuyoshi Murai, Takahiro Yamada and Yongguang Bao (Aichi Institute of Tech, Japan)*

**3B: COMSAR Workshop II****Board Room****Session Chair:** *Kiumi Akingbehin (University of Michigan-Dearborn, USA)*

1. Enhanced Facilitated Application Specification Technique (eFAST)  
*Karim Dad and Atif Neuman (Comsats Institute of Information Tech, Pakistan)*
2. Representing Security Goals, Policies, and Objects  
*Ebenezer Oladimeji (Verizon Communications, USA), Sam Supakkul and Lawrence Chung (Univ of Texas at Dallas, USA)*
3. Software Engineering for Pervasive Computing: An Outlook for Educational Reform  
*Gilda Pour (San Jose State Univ, USA)*
4. A Study on the Application of Six Sigma Tools to PSP/TSP for Process Improvement  
*Youngkyu Park, Hyuncheol Park, Hojin Choi and Jongmoon Baik (Information & Communications Univ, Korea)*
5. TUG: an Executable Specification Language  
*Chia-Chu Chiang (Univ of Arkansas at Little Rock, USA)*

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**Tuesday, July 11, 2006**

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**7:00-8:00      Registration****Admiral's Room****8:00-10:00      Session 4A & Session 4B****4A: Data Mining, and Information Management Systems****Parlor****Session Chair:** *Gongzhu Hu (Central Michigan University, USA)*

1. Measuring the Benefits of Summarizing quantitative Information in Pervasive Computing Systems  
*Faraz Rasheed, Young-Koo Lee, Sungyoung Lee (KyungHee University, Korea)*
2. Mining association rules from data with missing values by database partitioning and merging  
*Takahiko Shintani (Hitachi, Ltd, Japan)*
3. An Extended Cellular Automata Model for Data Mining of Land Development Data  
*Gongzhu Hu (Central Michigan Univ, USA) and Yichun Xie (Eastern Michigan Univ, USA)*

**4B: Mobile/Wireless Computing and Internet Technology and Applications****Board Room****Session Chair:** *Chong-wei Xu (Kennesaw State Univ, USA)*

1. K-Interleaving Rendezvous Overlay Network Construction Scheme  
*Khaled Ragab, Yoshihiro Oyama and Akinori Yonezawa (Tokyo Univ, Japan)*

2. Session Initiation Protocol (SIP) based Event Notification System Architecture for Telemedicine Applications  
*Golam Sorwar (Southern Cross Univ, Australia), Anwar sadat (Bangladesh Open Univ, Bangladesh) and Morshed U. Chowdhury (Deakin Univ, Australia)*
3. Hoarding and prefetching for mobile databases  
*Mariano Cravo Teixeira Neto and Ana Carolina Salgado (Federal Univ of Pernambuco, Brazil)*
4. Enhancing the Horizons of Mobile Computing with Mobile Agent Components  
*Gilda Pour (San Jose State Univ, USA) and Nivedita Laad (CISCO Systems, USA)*
5. A Framework for Developing Wireless Mobile Online Applications  
*Chong-wei Xu (Kennesaw State Univ, USA)*

**10:00-10:20    *Coffee Break***

***Ballroom Foyer***

**10:20-12:20    Session 5A & Session 5 B**

**5A: Software Engineering and Information Engineering I**

**Session Chair:    *Walter Dosch (University of Lubeck, Germany)*                      **Parlor****

1. A Method to Generate C# Code from MDA\_PSM  
*Soo Dong Kim and Deuk Kyu Kum (Soongsil Univ, Korea)*
2. Eliciting an Enhancive Maintenance Model in Three Organisations in Ghana  
*Mira Kajko-Mattsson and Michael Bosu (Stockholm Univ & Royal Inst. Of Tech, Sweden)*
3. Searching Pareto Solutions of Bi-objective NVP System Design Problem with Breadth First Search Method  
*Hidemi YAMACHI, Hisashi YAMAMOTO, Yasuhiro TSUJIMURA and Yasushi KAMBAYASHI*
4. Project Automation: Case study on the NeOSS Project  
*Yong-kee Jeong, Jun-Suk Oh*
5. Raising Local Density for Object Reconstruction using Auxiliary Points  
*Bin-Shyan Jong , Pai-Feng Lee, and Juin-Ling Tseng (Chung Yuan Christian Univ, Taiwan)*
6. On History-Sensitive Models of Interactive Queues  
*Walter Dosch (Univ of Lubeck, Germany), Pornsiri Muenchaisri and Wuttipong Ruanthong (Chulalongkorn Univ, Thailand)*

**5B: Information Management Systems and Management Information Systems & Technology Education and Training                      **Board Room****

**Session Chair:    *Naohiro Ishii (Aichi Institute of Technology, Japan)***

1. Application Services based on Personal Data Ontology  
*Yu-Chen Chen and Shang-Juh Kao (National Chung-Hsing Univ, Taiwan)*

2. Content Validating the B2E Portal User Satisfaction Instrument  
*Dewi Rooslani Tojib and Ly-Fie Sugianto (Monash University, Australia)*
3. A Web- and Problem-Based Learning System in Artificial Intelligence  
*Victor R.L. Shen (National Formosa Univ, Taiwan) and Tong-Ying Juang (National Taipei Univ, Taiwan)*
4. Enhancing Undergraduates' Capabilities of Practice and Innovation to Meet the Regional Needs  
*Zhu yanqin, yang jiwen and Zhu qiaoming (Soochow Univ, China)*
5. New Network Management System with Communication Control of the Client  
*Kazuya Odagiri, Rihito Yaegashi and Masaharu Tadauchi (Toyota Tech. Inst, Japan), Naohiro Ishii (Aichi Inst of Tech, Japan)*

**12:20-1:20      *Lunch (on your own)***

**1:20-3:20      Session 6A**

**6A: Image Processing & Pattern Recognition**

**Parlor**

**Session Chair:    Gongzhu Hu (Central Michigan University, USA)**

1. A New Approach to Persian/Arabic Text Steganography  
*Mohammad Hassan Shirali-Shahreza (Yazd Univ, Iran) and Mohammad Shirali-Shahreza (Sharif Univ of Tech, Iran)*
2. Collage Steganography  
*Mohammad Shirali-Shahreza and Sajad Shirali-Shahreza (Sharif Univ of Tech, Iran)*
3. Fast Polygonal Approximation Based On Genetic Algorithms  
*Yao-Hong Tsai (Hsuan Chuang Univ, Taiwan)*
4. Image Features Extraction for Multimedia Database Content Description  
*Shu-Sheng Hao (National Defense University, Taiwan)*
5. Irregular Patch for Image Synthesis  
*Changzhen Xiong (Sun Yat-Sen Univ, China) and Jing Huang (Beijing Normal Univ, China)*
6. Gradient Non-Linearity Correction of MR Images for Functional Radiosurgery  
*Tom S. Lee and Keith E. Schubert (Cal State Univ, USA) and Reinhard W. Schulte (Loma Linda Univ Med Center, USA)*

**3:20-3:40      *Coffee Break***

***Ballroom Foyer***

**3:40-5:40      Session 7A**

**Parlor**

**7A: Computer Architecture, and Software Testing and Tools**

**Session Chair:    Kiumi Akingbehin (University of Michigan-Dearborn, USA)**

1. A New Computer Architecture Using a New Program Driving Method  
*Xiaobo Li, Ke Luo, Xiangdong Cui, Lalin Jiang, Huiping Zhou, Xiaoqiang Ni, Chiyuan Ma, Jinghui Jiang, Zhou Zhou (Changsha Univ of Science and Tech, China)*
2. Analysis and Performance Results of a fluid dynamics Application on MASA Stream Processor  
*Mei Wen, Nan Wu, Changqing Xun, Wei Wu, Chunyuan Zhang (National Univ of Defense Tech, China)*
3. Efficient BISR Techniques for Word-Oriented Embedded Memories with Hierarchical Redundancy  
*Shyue-Kung Lu (Fu Jen Catholic Univ, Taiwan)*
4. Performance of PGA (Programmable Graph Architecture) for Matrix Multiplication  
*Muling Peng, Sreekanth Ramani, K. Wendy Tang (SUNY at Stony Brook, USA), A. Yavuz Oruc (Univ of Maryland, USA)*
5. Program Analysis and Testing of Database Applications  
*S. K. Gardikiotis and N. Malevris (Athens Univ of Economics and Business, Greece)*
6. Towards Destructive Software Testing  
*Kiumi Akingbehin (Univ of Michigan-Dearborn, USA)*

**6:00-7:30      *Dinner Banquet (Complimentary)***

***Ballroom I***

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**Wednesday, July 12, 2006**

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**7:00-8:00      Registration**

**Admiral's Room**

**8:00-9:40      Session 8A & Session 8 B**

**8A: Software Engineering and Information Engineering II**

**Session Chair: Cui Zhang (California State Univ Sacramento, USA)    Parlor**

1. Enabling Multiple Conferences in Recordable Virtual Collaboration  
*Meekyeong Kim and Chuleui Hong (Sang Myung Univ, Korea) and Yeong-Tae Song (Towson Univ, USA)*
2. Software Source Code Correlation  
*Robert Zeidman (Zeidman Consulting, USA)*
3. Writing Use-Case with a Minimal Set of Words  
*Takao Osaki, Atsushi Kobayashi, Takuo Kato (NEC Corp, Japan)*
4. Mapping between Temporal Scripts of Animation Component and SMIL Document using UML Sequence Diagram  
*Yan Ha (Kyungin Women's College, Korea) and Roger Lee (Central Michigan Univ, USA)*

5. Generating Java Skeletal Code with Design Contracts from Specifications in a Subset of Object Z.  
*Sowmiya Ramkarthik and Cui Zhang (California State Univ Sacramento, USA)*

## **8B: Artificial Intelligence, Image and Signal Processing**

**Chair:** *Walter Dosch (University of Lubeck, Germany)*

**Board Room**

1. Index Fund Optimization Using by GA Based on Coefficients of Determination  
*Yukiko Orito and Jun Takano (Ashikaga Inst of Tech, Japan), Manabu Takeda and Hisashi Yamamoto (Tokyo Metropolitan Univ, Japan)*
2. ACOUSTIC PRESSURE MINIMIZATION USING H2 CONTROL  
*Wen-Kung Tseng, Ying-Pin Chang and Shun-Cheng Lien (Nan Kai Inst of Tech, Taiwan)*
3. Adaptive Sampling via Histogram Equalization using an Active Walker Model  
*Oladipo O. Fadiran and Peter Molnar (Clark Atlanta Univ, USA) and Lance M. Kaplan (US Army Research Lab, USA)*

**9:40-10:00**    *Coffee Break*

**Ballroom Foyer**

**10:00-11:00**    **Session 9A & Session 9 B**

## **9A: Information Assurance**

**Parlor**

**Session Chair:** *Cui Zhang (California State Univ Sacramento, USA)*

1. Information Relevance Management Model - a New Strategy in Information Security Management in the Outsourcing Industry  
*Li Shi Ying, Luo Yi & Dai Yu Lin (I-SOMTRI, China)*
2. The Research on the Intelligent Network Storage Platform for the Military Information Source  
*Lianxing Jia, Zhifeng Chen and Chenhui Li (Communications Command Acad, China) and Feng Dan (Huazhong Univ of Sci & Tech, China)*
3. Improving the Usability of a Virtual Environment with the Integration of Multi-sensory Feedback  
*Y. Zhang (Cambridge Univ, United Kingdom), A. Travis (Clare College, Cambridge, United Kingdom) and T. Fernando (Univ of Salford, United Kingdom)*

## **9B: Intelligent Agent Technology, and Agent Based Systems**

**Chair:** *Walter Dosch (University of Lubeck, Germany)*

**Board Room**

1. Behavior Coordination Mechanism for Intelligent Home  
*Minkyung Kim and Hyun Kim (Electronics & Telecommunications Research Institute, Korea)*
2. Solving Distributed Mutual Exclusion using Cooperating Mobile Agents  
*F. Ahmad and N. Santoro (Carleton Univ, Canada), N. Goel (Cistel Tech Inc, Canada) and A. Nayak (University of Ottawa, Canada)*



3. Towards successful automated negotiations based on Neural Networks  
*Ioannis V. Papaioannou, Ioanna G. Roussaki and Miltiades E. Anagnostou (National Tech Univ of Athens, Greece)*

**11:00-12:20 Session 10A & Session 10B**

**10A: Web Engineering & Applications**

**Parlor**

**Session Chair: Roger Lee (Central Michigan University, USA)**

1. Browser Compatible XLink Processing  
*Tseng-Chang Yen, Felix Hsu, and Shang-Juh Kao (National Chung-Hsing Univ, Taiwan)*
2. Integration of QoS Queuing Schedules to QoS Caching Schemes  
*Yong Zhang and Wenying Feng (Trent Univ, Canada)*
3. Web-Based System for Electronic Navigational Charts Using GML and SVG  
*Seong Chul Kam, Seong Dae Lee, Hyu Chan Park, Xiaofang Zhou (Korea Maritime University, Korea)*

**10B: Data Mining, Software Engineering, and Intelligent Agent Technology**

**Board Room**

**Session Chair: Naohiro Ishii (Aichi Institute of Technology, Japan)**

1. Modeling the Network of Loyalty-Profit Chain in Chemical Industry  
*Carl Lee, Olga Tabolina, James Mentele and Tim Pletcher (Central Mich Univ, USA), Tim Rey (Dow Chemical Co)*
2. Empirical Validation of Test-Driven Pair Programming in Game Development  
*Shaochun Xu and Vaclav Rajlich (Laurentian Univ, Canada)*
3. Web-Based Intelligent Tutoring Systems in K-12 Settings: A Case Study on Approach and Outcomes  
*K. J. Wijekumar, J. Spielvogel, and B.J.F. Meyer (Pennsylvania State Univ, USA)*

**12:20-1:20 Lunch (on your own)**

**1:20-6:00 Individually arranged tours ( see hotel tour guide)**