

Cultural Centre - Holds operas and other cultural performances as well as exhibitions. Next to the Star Ferry and a mere 5-minute walk from the hotel.



Victoria Peak - Look out over Hong Kong and Kowloon from the Peak. Accessible by Star Ferry and then the Peak Tram from Central.



Science Museum and Space Museum - Located in Tsim Sha Tsui and a 5-minute walk from the hotel.



Stanley Market - Marketplace on the south side of Hong Kong Island, which is great for buying souvenirs. Accessible by MTR (1 stop) and then by bus from Admiralty.



Temple Street - Hong Kong's most famous open-air market opens at 2:00pm but really comes to life at dusk, with a bustling array of stalls selling everything from watches and leatherware to clothing and souvenirs. Attractions include fortune-tellers and Cantonese opera singers. In Yau Ma Tei. Accessible by MTR (2 stops).



Floating Restaurants - Dine on a huge floating restaurant in Aberdeen. Accessible by MTR (1 stop) and then by bus from Admiralty.



Hong Kong Convention and Exhibition Centre - Host to the 1997 Hong Kong Handover Ceremony, a large exhibition complex with restaurants. Accessible by Star Ferry or MTR (2 stops) to Wanchai.



Ocean Park - Amusement park located on the south side of the island housing one of the world's largest reef aquariums, and plenty of roller coasters. Accessible by MTR (1 stop) and then by direct bus from Admiralty.



Lan Kwai Fong and Soho - Eating and drinking hot-spot on Hong Kong Island. Accessible either by Star Ferry or MTR (2 stops) to Central.



Po Lin Monastery and the Big Buddha - World's largest sitting bronze Buddha, weighing 250 tonnes, sitting 34 metres high. Accessible by Star Ferry or MTR (2 stops) and then by boat to Lantau from the Outlying Islands ferry pier in Central.



CONFERENCE PROGRAM

28th Annual International Computer Software and Applications Conference
COMPSAC 2004
Hong Kong, September 28 – 30, 2004



Steering Committee
 Stephen S. Yau, Chair, Arizona State University, USA
 Carl K. Chang, Iowa State University, USA
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 Dick B. Simmons, Texas A & M. University, USA
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 Peter Henderson, University of Southampton, UK
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 Aditya Mathur, Purdue University, USA
 Rachel McCrindle, University of Reading, UK
 Allen Nikora, Jet Propulsion Laboratory, USA
 Jeff Offutt, George Mason University, USA
 Alexander Romanovsky, University of Newcastle, UK
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 Barrie Thompson, University of Sunderland, UK
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 Mladen Vouk, North Carolina State University, USA
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 Qianxiang Wang, Peking University, China
 Weili Wu, University of Texas at Dallas, USA
 Baowen Xu, Southeast University, China
 Hongji Yang, De Montfort University, UK
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 Hong Zhu, Oxford Brookes University, UK

Publicity Chair
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 Pak-Lok Poon, The Hong Kong Polytechnic University, Hong Kong

Registration Co-Chairs
 Dazhi Huang, Arizona State University, USA
 W. K. Chan, The University of Hong Kong, Hong Kong

Welcome to the Twenty-Eighth Annual International Computer Software and Applications Conference (COMPSAC 2004).

COMPSAC is the major international forum for researchers, practitioners, managers, and policy makers interested in computer software and applications. The program includes keynote addresses, research papers, industrial case studies, panel discussions and fast abstracts. It also includes three workshops on emerging important topics. The theme for this conference is

DEVELOPING TRUSTWORTHY SOFTWARE SYSTEMS

Program At-a-Glance

	Tuesday September 28	Wednesday September 29	Thursday September 30
09:00-10:00	Opening Session Keynote Address (1): Francis Ho	Plenary Session (1) Keynote Address (2): Jean-Claude Laprie	Plenary Session (2) Keynote Address (3): Huimin Lin
10:00-10:30	Coffee Break	Coffee Break	Coffee Break
10:30-12:00	Parallel Sessions: 1 Component-based Software (1) 2 Process Management (1) 3 Software Testing (1)	Parallel Sessions: 12 Component-based Software (2) 13 Process Management (2) 14 Software Testing (2)	Parallel Sessions: 24 Software Re-Engineering 25 Quality Assurance 26 Network, Distributed, and Embedded Systems 27 Fast Abstract (2): Software Quality Assurance
12:00-13:30	Lunch Break	Lunch Break	Lunch Break
13:30-15:00	Parallel Sessions: 5 Formal Methods (1) 6 Middleware 7 Real-Time Systems	Parallel Sessions: 16 Formal Methods (2) 17 Software Architecture 18 Security (2)	Parallel Sessions: 28 Workshop: Geographic and Biological Data Management (1) 29 Workshop: Software Cybernetics (1) 30 Workshop: Quality Assurance and Testing of Web-based Applications (1)
15:00-15:30	Coffee Break	Coffee Break	Coffee Break
15:30-17:00	Parallel Sessions: 9 Software Reliability 10 Security (1) 11 Panel: Research Directions in Software Process Improvement COMPSAC 2005 Planning Meeting	Parallel Sessions: 20 Requirements and Design 21 Pervasive/Ubiquitous Computing 22 Internet Web Systems 23 Fast Abstract (1): Software Design and Analysis	Parallel Sessions: 32 Workshop: Geographic and Biological Data Management (2) 33 Workshop: Software Cybernetics (2) 34 Workshop: Quality Assurance and Testing of Web-based Applications (2) 35 Fast Abstract (4): Software Applications

CONFERENCE VENUE

Holiday Inn Hong Kong - Golden Mile
 50 Nathan Road
 Tsim Sha Tsui
 Kowloon, Hong Kong
 Tel : +852 2369 3111
 Fax: +852 2369 8016

(All activities except the conference banquet are in the conference hotel.)

SOCIAL FUNCTIONS

Conference Reception (Crystal Room 2 & 3)
 6 pm, Monday September 27, 2004
Conference Banquet
 (Peking Garden Restaurant at Star House)
 6 pm, Wednesday September 29, 2004

COMPSAC 2005 Planning Meeting
 (Crystal Ballroom A)
 3:30 pm – 5:00 pm, September 28, 2004

COMPSAC is a major international forum for researchers, practitioners, managers, and policy makers interested in computer software and applications. It was first held in Chicago in 1977, and since then it has been one of the major forums for academia, industry, and government to discuss the state of art, new advances, and future trends in software technologies and practices.

This is the first time that COMPSAC is held in Hong Kong, China. This year's COMPSAC has a very strong technical program, which includes 3 keynote addresses, 5 panel sessions, 20 regular paper sessions, 4 fast abstract sessions and 3 workshops.

Acknowledgement

The conference committee would like to express our appreciation to the Croucher Foundation for partially sponsoring the registration fees of authors and panelists from Hong Kong and mainland China.

Hong Kong: A Dynamic City

Experience the distinctive blend of East and West in this dynamic world-class city. Feel the rush as you indulge in shopping. Savour culinary delicacies and taste the variety of cuisine that is not easily found elsewhere in the world. Open your senses to Hong Kong's amazing skyline, bustling harbour and peaceful countryside. Come discover the diversity and sophistication that is Hong Kong. You'll certainly love it!

Great Weather, Spectacular Show: A Symphony of Lights

The weather of Hong Kong is great in late September to early October. Every night at 8 pm, the waterfront of the fabulous Victoria Harbour is transformed into a stage of lights and music. While enjoying the free spectacular world-class show watching skyscrapers glow in a myriad of colours, spectators may feel the waft of warm late-summer breezes along with the experience of a romantic symphony of lights.



September 28, 2004: The Mid-Autumn Festival

The first day of the conference, September 28, coincides with a most charming and picturesque of Hong Kong's traditional festival, the *Mid-Autumn Festival*. Joining thousands of families to gather at parks, hilltops and beaches at night and surrounding oneself with candles and glowing lanterns would certainly be a memorable experience. Special lantern display will begin at 6:30 pm near the Land Mark and Bird Lake in Kowloon Park, only a few minutes' walk from the conference venue.

October 1, 2004: The Chinese National Day

The day right after the conference, October 1, is the *Chinese National Day*.

To celebrate the day, beautiful fireworks will light up the night sky over the Victoria Harbour at 8 pm. The best viewing spot is along the Avenue of Stars on the Tsim Sha Tsui waterfront promenade near the Hong Kong Cultural Centre, only 5-minutes' walk from the conference venue.



Gourmet Paradise

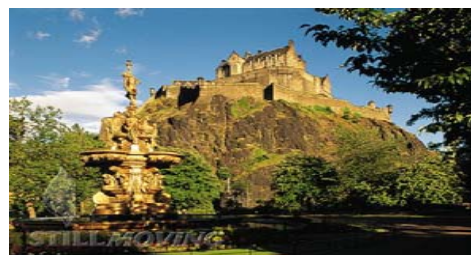
Hong Kong's cuisine is renowned for its exotic fusion of Eastern and Western flavours along with a wide variety of culinary delights. Its cultural blend, proximity to mainland China and reputation for quality have made Hong Kong the world's undisputed Gourmet Paradise. Discover the veritable smorgasbord of cuisine in the World of Dining from every Asian delicacy to the very best Western fare.

Touring Around in Hong Kong

There are harbour tours, tours to the outlying islands; fascinating culture & heritage tours. Explore the green side of Hong Kong with a hiking tour or a tour of Sai Kung, the "Back Garden". Join a unique tour to enjoy birdwatching or a kayaking trip for a distinctive experience!

Gateway to China

Do not miss the opportunity to visit some of the neighbouring Chinese cities that are sure to impress. Take advantage of Hong Kong's ties and transportation to mainland China, Macau and the Pearl River Delta to explore the cities, culture and countryside of one of the most fascinating destinations on Hong Kong's doorstep.



COMPSAC 2005

Edinburgh, UK, July 25-28, 2005

The conference will be held at the University of Edinburgh in Edinburgh, UK. The program will consist of invited keynote addresses, regular papers, panel sessions, workshops and fast abstracts, like COMPSAC 2004.

An open planning meeting of COMPSAC 2005 will be held in Crystal Ballroom A at COMPSAC 2004 conference hotel from 3:30 – 5:00 p.m. on Tuesday, September 28, 2004. All are welcome.

The requirements for submissions for regular papers, workshop and panel proposals are the same as COMPSAC 2004. Detailed call-for-contributions announcement will be posted to the COMPSAC 2005 website <http://aquila.nvc.cs.vt.edu/compsac2005> by mid-October, 2004.

Important Dates

- ◆ **November 15, 2004:** Deadline for workshop and panel proposals
- ◆ **December 5, 2004:** Notification on encouragement on developing proposed workshops or panels.
- ◆ **February 1, 2005:** Deadline for regular and workshop paper submissions
- ◆ **April 1, 2005:** Notification for authors of regular and workshop papers
- ◆ **May 1, 2005:** Deadline for camera-ready copies of accepted regular and workshop papers, workshop organizers' remarks, panel organizers' scope statements, and panelists' position papers

Program Co-Chairs

Ing-Ray Chen	Hong Mei	Roland N. Ibbett
Virginia Tech	Peking University	University of Edinburgh
USA	China	UK
irchen@cs.vt.edu	meih@pku.edu.cn	rni@inf.ed.ac.uk

Steering Committee Chair

Stephen S. Yau, Arizona State University, USA

Session 30: WORKSHOP on QUALITY ASSURANCE AND TESTING OF WEB-BASED APPLICATIONS (1) (Crystal Room 1)

Chair: Dave Kung, University of Texas at Arlington, USA

- *Web Application Bypass Testing:* Jeff Offutt, Ye Wu, Xiaochen Du, and Hong Huang, George Mason University, USA
- *Cooperative Agent Approach to Quality Assurance and Testing Web Software:* Hong Zhu, Oxford Brookes University, UK
- *Data Flow Analysis and Testing of Java Server Pages:* Chien-Hung Liu, National Taipei University of Technology, Taiwan
- *WS-FIT: A Tool for Dependability Analysis of Web Services:* Nik Looker, Malcolm Munro, University of Durham, UK, and Jie Xu, University of Leeds, UK

Session 31: FAST ABSTRACT (3) -- SECURITY, INFORMATION RETRIEVAL AND AGENT-BASED SOFTWARE (Crystal Room 3)

Chair: Jeff Lei, University of Texas at Arlington, USA

- *Towards an Authentication Middleware to Support Ubiquitous Web Access:* N. Zhang, J. Chin, A. Rector, and C. Goble, The University of Manchester, UK
- *N-gram-based Detection of New Malicious Code:* Tony Abou-Assaleh, Nick Cercone, Vlado Keselj, and Ray Sweidan, Dalhousie University, Canada
- *A Decision-making Model for Intelligent Agent with Internal State:* Shanli Hu and Haiyan Wu, Fuzhou University, China
- *Goal Autonomous Agent Architecture:* Z. Shen, R. Gay, Y. Miao, and C. Miao, Nanyang Technological University, Singapore
- *An Intelligent Component Retrieval System Using Conversational CBR:* Mingyang Gu and Xin Tong, Norwegian University of Science and Technology, Norway
- *Excalibur: A Personalized Meta Search Engine:* Leo Yuen, Matthew Chang, Ying Kit Lai, and Chung Keung Poon, City University of Hong Kong, Hong Kong
- *Rich Media Retrieval in an Object XML Framework: a Case Study with Flash Movies using Structural Join Index Hierarchy:* Hon Chung Mak Edmund, The Hong Kong Institute of Education, Hong Kong, Chi-wai Fung, Hong Kong Institute of Vocational Education (Tuen Mun), Hong Kong, and Qing Li, City University of Hong Kong, Hong Kong

15:00–15:30: Coffee Break

15:30–17:00: Parallel Sessions

Session 32: WORKSHOP on GEOGRAPHIC AND BIOLOGICAL DATA MANAGEMENT (2) (Crystal Ballroom A)

Chair: Roger Zimmermann, University of Southern California, USA

- *On the Complexity of Finding Emerging Patterns:* L. Wang, H. Zhao, G. Dong, and J. Li, City University of Hong Kong, Hong Kong
- *Web Service and Geographical Information Integration:* Yingwei Luo, Xinpeng Liu, Wenjun Wang, Xiaolin Wang, and Zhuoqun Xu, Peking University, China
- *A Method Based on Improved Bayesian Inference Network Model and Hidden Markov Model for Prediction of Protein Secondary Structure:* Guohui Yang, Chunguang Zhou, Chengquan Hu, Zhezhou Yu, and Hongji Yang, Jilin University, China
- *Spatiotemporal Helices for Modeling Environmental Data:* Kristin Eickhorst, Arie Croitoru, Peggy Agouris, and Tony Stefanidis, University of Maine, USA
- *Mining Complex Relationships in the SDSS SkyServer Spatial Database:* Bavani Arunasalam, Sanjay Chawla, Pei Sun, and Robert Munro, University of Sydney, Australia
- *Mining Dynamic Interdimension Association Rules for Local-scale Weather Prediction:* Zhongnan Zhang, Weili Wu, and Yaochun Huang, The University of Texas at Dallas, USA

Session 33: WORKSHOP on SOFTWARE CYBERNETICS (2) (Crystal Room 2)

Chair: Kai-Yuan Cai, Beijing University of Aeronautics and Astronautics, China

- *Linking Software Process Modeling with Markov Decision Theory:* Frank Padberg, Universität Karlsruhe, Germany
- *Modeling and Controlling the Incremental Software Test Process:* Scott D. Miller, Raymond A. DeCarlo, and Aditya P. Mathur, Purdue University, USA
- *Software Test Process Control: Status and Future Directions:* Ghaffari Abu, Leeny Chacko, and Joao W. Cangussu, The University of Texas at Dallas, USA

Session 34: WORKSHOP on QUALITY ASSURANCE AND TESTING OF WEB-BASED APPLICATIONS (2) (Crystal Room 1)

Chair: Hong Zhu, Oxford Brookes University, UK

- *Online Testing of Web-Based Applications:* Qianxiang Wang, Lining Quan, and Fuchen Ying, Peking University, China
- *Application of Group Testing in Verification of Dynamic Composite Web Services:* W. T. Tsai, Y. Chen, Arizona State University, USA, R. Paul, Department of Defense, USA, N. Liao, and H. Huang, Arizona State University, USA
- *Agent-Based Framework for Testing Web Applications:* David Kung, The University of Texas at Arlington, USA
- *Code-Coverage Guided Prioritized Test Generation:* J. Li, and H. Yee, Avaya Labs Research, USA

Session 35: FAST ABSTRACT (4) -- SOFTWARE APPLICATIONS (Crystal Room 3)

Chair: Baowen Xu, Southeast University, China

- *A New e-Shopping System Using High Performance Custom Computers:* Y. Chung, Y. Sun, P. Wang, and X. Chen, The University of Sydney, Australia
- *Development of a Hybrid Automotive Wireless Harness:* Kiumi Akingbehin and Nilesh Patel, University of Michigan-Dearborn, USA
- *Lessons Learned from the Practice of Mobile Health Application Development:* Ping Yu, The University of Wollongong, Australia, and Hui Yu, Chongqing Institute of Technology, China
- *Compressing an Inverted File with LCS:* Fang-Yie Leu and Yao-Chung Fan, Tung-Hai University, Taiwan
- *An Imprecise Computation Model in Reducing Power Consumption of Flash Memory for Portable Devices:* Li-Ping Tung, Jia-Ming Chen, Wei-Fen Hsu, and Wei-Kuan Shih, National Tsing Hua University, Taiwan
- *Robustness Study of an Embedded Operating System for Industrial Applications:* J. Pardo, J. C. Campelo, and J. J. Serrano, Polytechnic University of Valencia, Spain

Hope you enjoy the conference and the rest of your stay in Hong Kong, and have a safe journey home.

Do not miss COMPSAC 2005 !!
Edinburgh, UK
July 25-28, 2005

<http://aquila.nvc.cs.vt.edu/compsac2005>



Thursday, September 30, 2004**09:00-10:00 Plenary Session (2)** (Crystal Ballroom B & C)**Keynote Address (3):**

Formal Methods for Trustworthy Mobile Computing:
Huimin Lin, The Chinese Academy of Sciences, China

10:00-10:30 Coffee Break**10:30-12:00 Parallel Sessions****Session 24: SOFTWARE RE-ENGINEERING** (Crystal Room 2)

Chair: Albert Cheng, University of Houston, USA

- *JART: Grammar-Based Approach to Refactoring:* Tomaz Kosar, Marjan Mernik, and Viljem Zumer, University of Maribor, Slovenia
- *Extraction and Visualization of Architectural Structure Based on Cross References among Object Files:* Qiming Teng, Xiangqun Chen, Xia Zhao, Wei Zhu, and Lu Zhang, Peking University, China
- *Agentification for Web Service:* F. Chen, H. Yang, De Montfort University, UK, H Guo, and B. Xu, Dalian University of Technology, China
- *Software Quality and Agile Methods:* Ming Huo, June Verner, Liming Zhu, and Muhammed Ali Babar, National ICT Australia Ltd. and University of New South Wales, Australia

Session 25: QUALITY ASSURANCE (Crystal Room 1)

Chair: Bojan Cukic, West Virginia University, USA

- *Proof-Guided Testing: an Experimental Study:* G. Lussier, H. Waeselynck, and K. Guennoun, LAAS-CNRS, France
- *An Approach for Software Reliability Model Selection:* Ch. Ali Asad, Muhammad Irfan Ullah, and Muhammad Jaffar-Ur-Rehman, Mohammad Ali Jinnah University, Pakistan
- *An Integrated Software Development Environment with XML Internal Representation:* Chih-Hung Chang, Feng Chia University, Taiwan, William C. Chu, Tunghai University, Taiwan, Chih-Wei Lu, Hsiuping Institute of Technology, Taiwan, and Dong Lin Yang, Feng Chia University, Taiwan
- *An Approach to Generate the Thin-threads from the UML Diagrams:* Xiaoqing Bai, Guangxi University, China, C. Peng Lam, and Huaizhong Li, Edith Cowan University, Australia

Session 26: NETWORK, DISTRIBUTED, AND EMBEDDED SYSTEMS (Crystal Ballroom A)

Chair: Dick Simmons, Texas A&M University, USA

- *Services-Oriented Dynamic Reconfiguration Framework for Dependable Distributed Computing:* W. T. Tsai, Weiwei Song, Arizona State University, USA, Ray Paul, Department of Defense, USA, Zhibin Cao, and Hai Huang, Arizona State University, USA
- *A New Receiver-based Layered-Rate Estimator Algorithm for Fair Bandwidth Distribution:* Kon Papazis, Naveen K. Chilamkurti, and Ben Soh, La Trobe University, Melbourne, Australia
- *Study on Performance of IP-SWAN Based on Distributed NS-RAID:* Baojiang Cui, Nankai University, China, Jun Liu, Tianjin University of Finance and Economics, China, Gang Wang and Jing Liu, Nankai University, China
- *A Reliable OS Kernel for Smart Sensors:* Wu Zhaohui, Lei Wang, and Z. Kougen, Zhejiang University, China

Session 27: FAST ABSTRACT (2) -- SOFTWARE QUALITY ASSURANCE (Crystal Room 3)

Chair: Amit Paradkar, IBM T.J.Watson Research Center, USA

- *Towards Optimization of the Coverage Testing of Interactive Systems:* F. Belli and C. Budnik, University of Paderborn, Germany
- *Estimation of Software Defects Fix Effort Using Neural Networks:* Hui Zeng and David Rine, George Mason University, USA
- *A Change Impact Dependency Measure for Predicting the Maintainability of Source Code:* Franck Xia and Praveen Srikanth, University of Missouri-Rolla, USA
- *Optimizing the Planning and Executing of Software Independent Verification and Validation (IV&V) in Mature Organizations:* Christopher Fuhrman, Edgardo Palza, and Kim Loan Do, École de technologie supérieure, Canada
- *A View-based Control Flow Metric:* Stefan Gossens and Mario Dal Cin, University of Erlangen-Nuremberg, Germany
- *Using FMEA for Early Robustness Analysis for Web-Based Systems:* Jianyun Zhou and Tor Stålhane, Norwegian University of Science and Technology, Norway
- *eXtreme Programming (XP) as a 'Minimum' Software Process: A Grounded Theory:* Gerry Coleman, Dundalk Institute of Technology, Ireland
- *eXtreme Programming Support Tool in Distributed Environment:* Satoshi Atsuta and Saeko Matsuura, Shibaura Institute of Technology, Japan

12:00-1:30 Lunch Break (Crystal Ballroom B & C)**13:30-15:00 Parallel Sessions****Session 28: WORKSHOP on GEOGRAPHIC AND BIOLOGICAL DATA MANAGEMENT (1)** (Crystal Ballroom A)

Chair: Hongji Yang, DeMontfort University, UK

- *A New Approach to Representing Continuously Moving Regions:* Peiquan Jin, Lihua Yue, and Yuchang Gong, University of Science and Technology of China (USTC), China
- *Evaluating GML Support for Spatial Databases:* Lakshmi N Sripada, Chang-Tien Lu, Virginia Tech, USA, and Weili Wu, The University of Texas at Dallas, USA
- *A spatial SQL Extension for Continuous Field Querying:* Laurini Robert, Research Center for Images and Information Systems, INSA of Lyon, France, Luca Paolino, Monica Sebillio, Genoveffa Tortora, and Giuliana Vitiello, University of Salerno, Italy
- *Spatial Data Query Support in Peer-to-Peer System:* Roger Zimmermann, Wei-Shinn Ku, and Haojun Wang, University of Southern California, USA
- *Protein Functional Motion Query and Visualization:* Xiong Liu, Hassan Karimi, Lee-Wei Yang, and Ivet Bahar, University of Pittsburgh, USA

Session 29: WORKSHOP on SOFTWARE CYBERNETICS (1) (Crystal Room 2)

Chair: Aditya Mathur, Purdue University, USA

- *Self-adaptive Software: Cybernetic Perspective and an Application Server Supported Framework:* Junrong Shen, Qianxiang Wang, and Hong Mei, Peking University, China
- *Adaptive Software Testing with Fixed-Memory Feedback:* Kai-Yuan Cai, Bo Gu, Hai Hu, and Yong-Chao Li, Beihang University, China
- *Adaptive Random Testing with CG Constraint:* F. T. Chan, K. P. Chan, The University of Hong Kong, Hong Kong, T. Y. Chen, Swinburne University of Technology, Australia, and S. M. Yiu, The University of Hong Kong, Hong Kong
- *Adaptive Control Software: Can We Guarantee Safety?:* Yan Liu, Sampath Yerramalla, Edgar Fuller, Bojan Cukic, and Srikanth Gururajan, West Virginia University, USA

Tuesday September 28, 2004**09:00-10:00 Opening Session** (Crystal Ballroom B & C)

- **Welcome and Remarks:**
General Chair: Paul Y. S. Cheung, The University of Hong Kong, Hong Kong
- **Greetings and Remarks:**
Steering Committee Chair: Stephen S. Yau, Arizona State University, USA
- **Remarks and Award Presentations:**
IEEE Computer Society President: Carl Chang, Iowa State University, USA
- **Program Overview:**
Program Co-Chairs: Eric Wong, University of Texas at Dallas, USA
Karama Kanoun, LAAS-CNRS, France
- **Keynote Address (1):**
Positioning Hong Kong as a Trustworthy Partner in Software Development:
Francis Ho, Permanent Secretary for Commerce, Industry and Technology, The Government of the Hong Kong SAR

10:00-10:30 Coffee Break**10:30-12:00 Parallel Sessions****Session 1: COMPONENT-BASED SOFTWARE (1)** (Crystal Room 2)

Chair: T. H. Tse, The University of Hong Kong, Hong Kong

- *Distributed Component-Based Software Development: An Incremental Approach:* Eduardo Santana de Almeida, Alexandre Alvaro, Federal University of Pernambuco, Brazil, Daniel Lucrecio, Antonio Francisco do Prado, and Luis Carlos Trevelin, Federal University of São Carlos, Brazil
- *TiViPE - Tino's Visual Programming Environment:* Tino Lourens, Honda Research Institute Japan Co. Ltd., Japan
- *Codifying a Service Architectural Style:* David Budgen, Pearl Brereton, and Mark Turner, Keele University, UK
- *Formal Support for Development of JavaBeans Component Systems:* Bhim Prasad Upadhyaya, and Zhiming Liu, The United Nations University, Macau

Session 2: PROCESS MANAGEMENT (1) (Crystal Room 3)

Chair: David Card, Software Productivity Consortium, USA

- *Assuring Assessment Success:* Kevin McKeever, Jonathan Morrison, and Eric Peterson, Motorola, Australia
- *Enacting Conformance Assessment of Business Processes - an ebXML based Approach in E-ADOME:* Zhe Shan, Qing Li, City University of Hong Kong, Hong Kong, and Kamalakar Karlapalem, International Institute of Information Technology, India
- *Continuous Productivity Assessment and Effort Prediction Based on Bayesian Analysis:* Seok Jun Yun and Dick B. Simmons, Texas A&M University, USA
- *Introducing Agility: A Case Study of Situational Method Engineering Using the OPEN Process Framework:* M.K. Serour and B. Henderson-Sellers, University of Technology, Australia

Session 3: SOFTWARE TESTING (1) (Crystal Ballroom A)

Chair: Y. T. Yu, City University of Hong Kong, Hong Kong

- *An Edge Marking Technique for Dynamic Slicing of Object-Oriented Programs:* D. P. Mohapatra, R. Mall, and R. Kumar, Indian Institute of Technology Kharagpur, India
- *Modular Monadic Program Slicing:* Y. Zhang, B. Xu, L. Shi, B. Li, and H. Yang, Southeast University, China
- *Using Artificial Life Techniques to Generate Test Cases for Combinatorial Testing:* Toshiaki Shiba, Tatsuhiro Tsuchiya, and Tohru Kikuno, Osaka University, Japan
- *A Revisit of Adaptive Random Testing by Restriction:* Kwok Ping Chan, The University of Hong Kong, Hong Kong, Tsong Yueh Chen, Fei-Ching Kuo, Swinburne University of Technology, Australia and Dave Towey, The University of Hong Kong, Hong Kong

Session 4: PANEL: RISK MANAGEMENT AND DEPENDABILITY -- WHAT ARE THE KEY FACTORS? (Crystal Room 1)

Moderator: Fevzi Belli, University of Paderborn, Germany

Panelists: Lucas Chi Kwong Hui, The University of Hong Kong, Hong Kong
Hans-Dieter Kochs, University of Duisburg Essen, Germany
Jean-Claude Laprie, LAAS-CNRS, France

12:00-13:30 Lunch Break (Crystal Ballroom B & C)**13:30-15:00 Parallel Sessions****Session 5: FORMAL METHODS (1)** (Crystal Ballroom A)

Chair: Allen Nikora, Jet Propulsion Laboratory, USA

- *Implementing Hierarchical Features in a Graphically Based Formal Modelling Language:* Peter Henderson, Robert John Walters, and Stephen Crouch, University of Southampton, UK
- *Situated Modelling of Scenarios:* Francisco A. C. Pinheiro, Universidade de Brasilia, Brazil
- *PFASAT-a Genetic SAT Solver Combining Partitioning and Fuzzy Strategies:* Jianzhou Zhao, Jinian Bian, and Weimin Wu, Tsinghua University, China
- *Consistency Check in Modelling Multi-Agent Systems:* Lijun Shan, National University of Defence Technology, China, and Hong Zhu, Oxford Brookes University, UK

Session 6: MIDDLEWARE (Crystal Room 2)

Chair: Dongman Lee, Information and Communications University, Korea

- *Stream Composition for Highly Adaptive and Reconfigurable Mobile Middleware:* Yongjie Zheng and Alvin T. S. Chan, The Hong Kong Polytechnic University, Hong Kong
- *SOWAC: A Service-Oriented Workflow Access Control Model:* Wei Xu, Jun Wei, Yu Liu, and Jing Li, The Chinese Academy of Sciences, China
- *Towards Autonomic Computing Middleware via Reflection:* G. Huang, T. Liu, H. Mei, Z. Zheng, Z. Liu, and G. Fan, Peking University, China
- *A Semantic-Aware Publish/Subscribe System with RDF Patterns:* Jinling Wang, Beihong Jin, Jing Li, and Danhua Shao, The Chinese Academy of Sciences, China

Session 7: REAL-TIME SYSTEMS (Crystal Room 3)

Chair: Wei-tek Tsai, Arizona State University, USA

- *Worst-Case Response Time Analysis for OSEK/VDX Compliant Real-Time Distributed Control Systems:* Lei Wang, Zhaohui Wu, and Z. Mingde, Zhejiang University, China
- *Dynamic Real-Time Scheduling for Multi-Processor Tasks Using Genetic Algorithm:* Shu-Chen Cheng and Yueh-Min Huang, National Cheng Kung University, Taiwan
- *Real-Time Strategy and Practice in Service Grid:* Hai Jin, Hanhua Chen, Jian Chen, Ping Kuang, Li Qi, and Deqing Zou, Huazhong University of Science and Technology, China
- *A New Scheduling Algorithm and a Compensation Strategy for Imprecise Computation:* Albert M. K. Cheng and Rong Wang, University of Houston, USA

Session 8: PANEL: COMPUTER CURRICULA FOR SOFTWARE ENGINEERING (Crystal Room 1)

Moderator: Barrie Thompson, University of Sunderland, UK

Panelists: Maarten Boasson, University of Amsterdam, Netherlands
David Budgen, Keele University, UK
Dick Simmons, Texas A&M University, USA
T. H. Tse, The University of Hong Kong, Hong Kong

15:00-15:30 Coffee Break

15:30-17:00 Parallel Sessions

Session 9: SOFTWARE RELIABILITY (Crystal Room 2)

Chair: Fevzi Belli, University of Paderborn, Germany

- *Application of Maximum Entropy Principle to Software Failure Prediction*: Ji Wu, Hai-yan Yang, Xiao-xia Jia, Chang Liu, Chao Liu, and Mao-zhong Jin, BeiHang University, China
- *Software Reliability Growth Models Incorporating Fault Dependency with Various Debugging Time Lags*: Chin-Yu Huang, Chu-Ti Lin, National Tsing Hua University, Taiwan Sy-Yen Kuo, National Taiwan University, Taiwan, Michael R. Lyu, and C.-C. Sue, The Chinese University of Hong Kong, Hong Kong
- *The Effects of Fault Counting Methods on Fault Model Quality*: Allen P. Nikora, California Institute of Technology, USA, and John C. Munson, Cylant, Inc., USA
- *Portable Faultloads Based on Operator Faults for DBMS Dependability Benchmarking*: Marco Vieira, Polytechnic Institute of Coimbra, Portugal, and Henrique Madeira, University of Coimbra, Portugal

Session 10: SECURITY (1) (Crystal Room 3)

Chair: Maarten Boasson, University of Amsterdam, The Netherlands

- *A Multiple-Class SLIPPER System for Intrusion Detection*: Zhenwei Yu and Jeffrey Tsai, University of Illinois at Chicago, USA
- *A Secure Mobile Agent System Model based on Extended Elementary Object System*: Lu Ma, Jeffrey Tsai, and Tad Murata, University of Illinois at Chicago, USA
- *A Secure and Fully Private Borda Voting Protocol with Universal Verifiability*: Changjie Wang and Ho-fung Leung, The Chinese University of Hong Kong, Hong Kong
- *Enhanced Security Models for Operating Systems: A Cryptographic Approach*: Christian Payne, Murdoch University, Australia

Session 11: PANEL: RESEARCH DIRECTIONS IN SOFTWARE PROCESS IMPROVEMENT (Crystal Room 1)

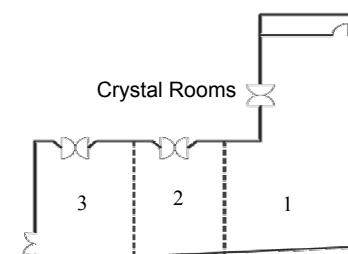
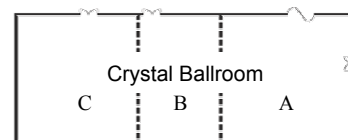
Moderator: William Chu, TungHai University, Taiwan

- Panelists:
- Dave Card, Software Productivity Consortium, USA
 - K. P. Chow, The University of Hong Kong, Hong Kong
 - Pankaj Jalote, Indian Institute of Technology and Microsoft, India
 - Miguel Serrano, Centro de Investigaciones en Matematica, Mexico

COMPSAC 2005 Planning Meeting

(Crystal Ballroom A)

3:30 pm – 5:00 pm

**Wednesday September 29, 2004****09:00-10:00 Plenary Session (1) (Crystal Ballroom B & C)****Keynote Address (2):**

Dependable Computing: Concepts, Challenges, Directions:
Jean-Claude Laprie, LAAS-CNRS, France

10:00-10:30 Coffee Break**10:30-12:00 Parallel Sessions****Session 12: COMPONENT-BASED SOFTWARE (2) (Crystal Room 2)**

Chair: Carl Chang, Iowa State University, USA

- *Intelligent Component Selection*: Valerie Maxville, Edith Cowan University, Australia, Jocelyn Armarego, Murdoch University, Australia, and Chiou Peng Lam, Edith Cowan University, Australia
- *Component-Wise Mapping of Media-Needs to a Distributed Presentation Environment*: Loe Feijs and Jun Hu, Eindhoven University of Technology, The Netherlands
- *Component Failure Mitigation According to Failure Type*: Fan Ye and Tim Kelly, University of York, UK
- *Modular Design of Reactive Systems*: Cristina Cerschi Secceleanu and Tiberiu Secceleanu, Turku Centre for Computer Science, Finland

Session 13: PROCESS MANAGEMENT (2) (Crystal Room 3)

Chair: F. T. Chan, The University of Hong Kong, Hong Kong

- *Software Effort Prediction Models Using Maximum Likelihood Methods Require Multivariate Normality of the Software Metrics Data Sample: Can Such a Sample Be Made Multivariate Normal?*: Victor K.Y. Chan, City University of Hong Kong and Infotech Services (Hong Kong) Limited, Hong Kong
- *POP beyond SODA, Reaching the New Horizon of Service Cooperation*: S. Liu, D. Ye, J. Wei, G. Xu, Y. Xia, and Y. Liu, The Chinese Academy of Sciences, China
- *FC method: A Practical Approach to Improve Quality and Efficiency of Software Processes for Embedded System Revision*: Kazuma Aizawa, Haruhiko Kaiya, and Kenji Kajiri, Shinshu University, Japan
- *A Complete Textual Merging Algorithm for Software Configuration Management Systems*: Haifeng Shen, Nanyang Technological University, Singapore, and Chengzheng Sun, Griffith University, Australia

Session 14: SOFTWARE TESTING (2) (Crystal Ballroom A)

Chair: T. Y. Chen, Swinburne University of Technology, Australia

- *Test Criteria for Context-Free Grammars*: Hu Li, Maozhong Jin, Chao Liu, and Zhongyi Gao, Beihang University, China
- *Mutation-Based Testing Criteria for Timeliness*: Robert Nilsson, University of Skövde, Sweden, Jeff Offutt, George Mason University, USA, and Sten F. Andler, University of Skövde, Sweden
- *Reachability Testing of Semaphore-based Programs*: Yu Lei, The University of Texas at Arlington, USA, and Richard Carver, George Mason University, USA
- *On the Testing of Particular Input Conditions*: Eric Y. K. Chan, City University of Hong Kong, Hong Kong, P.-L. Poon, The Hong Kong Polytechnic University, Hong Kong, and Y. T. Yu, City University of Hong Kong, Hong Kong

Session 15: PANEL: COMPUTER SUPPORTED COOPERATIVE WORK IN SOFTWARE ENGINEERING (Crystal Room 1)

Moderator: Jenny Li, Avaya Research Labs, USA

- Panelists:
- Stephen Chen, Motorola, USA
 - Karama Kanoun, LAAS-CNRS, France
 - Tangqiu Li, Xiamen University, China
 - Zongkai Lin, The Chinese Academy of Sciences, China
 - Aditya Mathyr, Purdue University, USA

12:00-13:30 Lunch Break (Crystal Ballroom B & C)

13:30-15:00 Parallel Sessions

Session 16: FORMAL METHODS (2) (Crystal Ballroom A)

Chair: Huimin Lin, The Chinese Academy of Sciences, China

- *Towards a Model Logic for π -Calculus*: Taolue Chen, Tingting Han, and Jian Lu, Nanjing University, China
- *Generating Regression Tests via Model Checking*: Lihua Xu, Marcio Dias, and Debra Richardson, University of California at Irvine, USA
- *Automated Consistency and Completeness Checking of Testing Models for Interactive Systems*: Amit Paradkar and Tim Klinger, IBM T.J. Watson Research Center, USA
- *Design of a CIL Connector to SPIN*: Yongjian Li and Rui Xue, The Chinese Academy of Sciences, China

Session 17: SOFTWARE ARCHITECTURE (Crystal Room 2)

Chair: Jeff Offutt, George Mason University, USA

- *A Taxonomy and Hierarchy of Variability Dependencies in Software Product Family Engineering*: M. Jaring and J. Bosch, University of Groningen, The Netherlands
- *A Development Framework for Rapid Meta-heuristics Hybridization*: Hoong Chuin Lau, Wee Chong Wan, Min Kwang Lim, and Steven Halim, National University of Singapore, Singapore
- *Safety Tactics for Software Architecture Design*: Weihang Wu and Tim Kelly, University of York, UK
- *A Uniform Meta-Model for Mediating Formal Electronic Conferences*: Jia Zhang, Northern Illinois University, USA, Carl K. Chang, Iowa State University, USA, and Jeff Voas, Cigital Inc., USA

Session 18: SECURITY (2) (Crystal Room 3)

Chair: Andreas Ulrich, Siemens, Germany

- *Publicly Verifiable Auctions with Minimal Leakage*: Qianhong Wu, Changjie Wang, Xiaofeng Chen, and Yumin Wang, Xidian University, China
- *A Hybrid Security Framework of Mobile Code*: Long Qin, Duanfeng Si, Xinhui Han, and Z. Wei, Peking University, China
- *A Novel Key Management Scheme for Dynamic Access Control in a User Hierarchy*: T.-S. Chen, Tung-Hai University, Taiwan, Y.-F. Chung, and C.-S. Tian, National Taiwan University, Taiwan

Session 19: PANEL: EMBEDDED SOFTWARE SYSTEMS (Crystal Room 1)

Moderator: Michael Kay, Motorola Global Software Group, UK

- Panelists:
- Bhaskar Harita, Motorola Global Software Group, India
 - Dongman Lee, Information and Communications University, Korea
 - Stephen S. Yau, Arizona State University, USA

15:00-15:30 Coffee Break

15:30-17:00 Parallel Sessions

Session 20: REQUIREMENTS AND DESIGN (Crystal Room 2)

Chair: Michael R. Lyu, The Chinese University of Hong Kong, Hong Kong

- *Priority Assessment of Software Requirements from Multiple Perspectives*: Xiaoqing (Frank) Liu, Chandra Sekhar Veera, Yan Sun, University of Missouri-Rolla, USA, Kunio Noguchi, and Yuji Kyoya, Software Engineering Center, Toshiba Corporation, Japan
- *An Approach to Feature Based Modeling by Dependency Alignment for the Maintenance of the Trustworthy System*: Jungyoon Kim and Doo Hwan Bae, Korea Advanced Institute of Science and Technology, Korea
- *Hiding Sensitive Patterns in Association Rules Mining*: Guanling Lee, Chien-Yu Chang, and Arbee L. P. Chen, National Dong Hwa University, Taiwan
- *Efficient Partial Multiple Periodic Patterns Mining without Redundant Rules*: Wenpo Yang and Guanling Lee, National Dong Hwa University, Taiwan

Session 21: PERVASIVE/UBIQUITOUS COMPUTING (Crystal Room 1)

Chair: Stephen Chen, Motorola Global Software Group, USA

- *Materializing Ubiquitous Computing Environments*: Kimio Kuramitsu, Kogakuin University, Japan, and Hideyuki Tokuda, Keio University, Japan
- *Context-based Access Control for Ubiquitous Service Provisioning*: Antonio Corradi, Rebecca Montanari, and Daniela Tibaldi, Universit  di Bologna, Italy
- *Development and Runtime Supports for Situation-Aware Application Software in Ubiquitous Computing Environments*: Stephen S. Yau, Dazhi Huang, Haishan Gong, and Siddharth Seth, Arizona State University, USA
- *Testing Context-Sensitive Middleware-based Software Applications*: T.H. Tse, The University of Hong Kong, Hong Kong, Stephen S. Yau, Arizona State University, USA, W.K. Chan, Heng Lu, The University of Hong Kong, Hong Kong, and T.Y. Chen, Swinburne University of Technology, Australia

Session 22: INTERNET WEB SYSTEMS (Crystal Ballroom A)

Chair: Shing-Chi Cheung, The Hong Kong University of Science and Technology, Hong Kong

- *AdapTIVE: An Intelligent Virtual Environment and its Application in E-Commerce*: C ssia Trojahn dos Santos and Fernando Santos Os rio, Unisinos University, Brazil
- *Identifying and Breaking Necessary Constraints to Web-Based Metacomputing*: Wei Li, Daniel Pun, Central Queensland University, Australia, and Minjie Zhang, University of Wollongong, Australia
- *Multi-Dimension Browse*: Tsung-Yuan Liu, National Chiao Tung University, Taiwan, and Yuh-Jzer Joung, National Taiwan University, Taiwan
- *Coordinating Web Services Using Channel Based Communication*: Theophilos Lemnites, George A. Papadopoulos, University of Cyprus, Cyprus, and Farhad Arbab, CWI, The Netherlands
- *Supporting Concept Assignment in the Comprehension of Web Applications*: Giuseppe Antonio Di Lucca, University of Sannio, Italy, Anna Rita Fasolino, Porfirio Tramontana, and Ugo De Carlini, Universit  di Napoli Federico II, Italy

Session 23: FAST ABSTRACT (1) -- SOFTWARE DESIGN AND ANALYSIS (Crystal Room 3)

Chair: Weili Wu, University of Texas at Dallas, USA

- *An Efficient Distributed Intrusion Detection Scheme*: Thomas Holz, Carmeq GmbH, Germany, Germany
- *Model Oriented Software Architecture*: Hassan Reza and Emanuel Grant, University of North Dakota, USA
- *A Grid Services-Based Engineering Computation Architecture*: Changqin Huang, Deren Chen, and Hualiang Hu, Zhejiang University, China
- *A Generic OO Architecture Language for Semantics Analysis of OO Specification*: Franck Xia, University of Missouri-Rolla, USA
- *An XML-based Framework for Language Neutral Program Representation and Generic Analysis*: Raihan Al-Ekram and Kostas Kontogiannis, University of Waterloo, Canada
- *Quantitative Analysis of Symbolic Execution*: Jian Zhang, The Chinese Academy of Sciences, China
- *Adaptive Time-Critical Resource Management Using Time/Utility Functions: Past, Present, and Future*: Peng Li, Binoy Ravindran, Virginia Tech, USA, and E. Douglas Jensen, The MITRE Corporation, USA
- *Addressing the Root of All Programming Evils*: Conrad Mueller, The University of the Witwatersrand, South Africa

18:00- Conference Dinner Banquet (Peking Garden Restaurant at Star House)