APAQS 2000

First Asia-Pacific Conference on Quality Software

Grand Ballroom, New World Renaissance Hotel Kowloon, Hong Kong
October 30–31, 2000

Monday October 30

Registration 8:30 - 9:30 *a.m.*

Opening Session 9:30 - 10:45 *a.m.*

Chair: *Danny Tang, Kowloon-Canton Railway Corporation, Hong Kong*

- Welcome Address from the General Chair
  Danny Tang, General Manager of Information Technology, Kowloon-Canton Railway Corporation, Hong Kong
- Program Overview
  T.H. Tse and T.Y. Chen, Program Co-Chairs
- Keynote Address I
  K.H. Lau, Director of Information Technology Services, Government of the Hong Kong Special Administrative Region

Coffee Break 10:45 - 11:15 *a.m.*

Parallel Sessions 1
11:15 *a.m.* - 12:30 *p.m.*

Session 1A: Web-Based Systems

Chair: *Doug Grant, Swinburne University of Technology, Australia*

- Object-based data flow testing of Web applications
  C.-H. Liu, D.C. Kung, and P. Hsia, University of Texas at Arlington, USA;
  C.-T. Hsu, Sun Microsystems, Inc., USA
- Object driven performance testing in Web applications
  B.M. Subraya and S.V. Subrahmanya, Infosys Technologies, India

Session 1B: Distributed, Concurrent, and Real-Time Systems

Chair: *Michael Lyu, Chinese University of Hong Kong, Hong Kong*

- Control of nondeterminism in testing distributed multithreaded programs
  X. Cai and J. Chen, University of Windsor, Canada
- An approach to analyzing dependency of concurrent programs
  Z. Chen and B. Xu, Southeast University, China;
  H. Yang, De Montfort University, UK;
  K. Liu, Staffordshire University, UK;
  Jianping Zhang, Utah State University, USA
- Modelling and verification of a network player system with DCValid
  J. Wang and Q. Xu, United Nations University International Institute for Software Technology, Macau;
  H. Ma, Beijing University of Posts and Telecommunication, China

Lunch 12:30 - 2:00 *p.m.*

Parallel Sessions 2 2:00 - 3:15 *p.m.*

Session 2A: Metrics and Models

Chair: *Maarten Boasson, Hollandse Signaalapparaten BV, The Netherlands*

- A formal mechanism for assessing polymorphism in object-oriented systems
  C. Pons and L. Olsina, Universidad Nacional de La Plata, Argentina;
  M. Prieto, J.P. Morgan Bank, Argentina
- A framework for quantifying error proneness in software
  R. Sitte, Griffith University, Gold Coast Campus, Australia
- Software quality prediction using mixture models with EM algorithm
  P. Guo and M.R. Lyu, The Chinese University of Hong Kong, Hong Kong

Session 2B: Software Testing I

Chair: *Tsuneo Yamaura, Hitachi Software, Japan*

- On the determination of an appropriate time for ending the software testing process
  N. Malevris and E. Petrova, Athens University of Economics and Business, Greece
- Testing of large number multiplication functions in cryptographic systems
  T.H. Tse, The University of Hong Kong, Hong Kong;
  T.Y. Chen, Swinburne University of Technology, Australia;
  Z. Zhou, The University of Hong Kong, Hong Kong
- An approach to modify and test expired window logic
  W.T. Tsai, Arizona State University and University of Minnesota, USA;
  X. Bai, Arizona State University, USA;
  R. Paul, Office of the Assistant Secretary of Defense, USA;
  G. Devaraj and V. Agarwal, University of Minnesota, USA

Coffee Break 3:15 - 3:45 *p.m.*

Parallel Sessions 3 3:45 - 5:00 *p.m.*

Session 3A: Object-Oriented Models and Design

Chair: *S.C. Cheung, Hong Kong University of Science and Technology, Hong Kong*

- An object-oriented Web test model for testing Web applications
  D.C. Kung, C.-H. Liu, and P. Hsia, University of Texas at Arlington, USA
- Object oriented design function points
  D.J. Ram and S.V.G.K. Raju, Indian Institute of Technology, Madras, India
- Quality metrics of object oriented design for software development and re-development
  K. Liu, Staffordshire University, UK;
  S. Zhou and H. Yang, De Montfort University, UK

Session 3B: Software Testing II

Chairs: *Wei-Tek Tsai, Arizona State University and University of Minnesota, USA, and Amrit Goel, Syracuse University, USA*

- BS 7925-2: the software component testing standard
  S.C. Reid, Cranfield University, UK
- On the completeness of test cases for atomic arithmetic expressions
  T.H. Tse, The University of Hong Kong, Hong Kong;
  T.Y. Chen, Swinburne University of Technology, Australia;
  X. Feng, The University of Hong Kong, Hong Kong
- Testing for imperfect integration of legacy software components
  D. Flater, National Institute of Standards and Technology, USA

CONFERENCE BANQUET
6:30 P.M. FOR 7:30 P.M.

Peking Garden Restaurant, 3/F, Star House,
Tsimshatsui, Kowloon (Tel. 2735 8211)

TUESDAY OCTOBER 31

LATE REGISTRATION 9:15 - 9:30 A.M.

PLENARY SESSION 9:30 - 10:30 P.M.

Chair: *Ray Paul, Office of the Assistant Secretary of Defense, USA*

- Keynote Address II:
  Achieving quality software development for distributed environments
  Stephen S. Yau, Arizona State University, USA

COFFEE BREAK 10:30 - 11:00 A.M.

PARALLEL SESSIONS 4
11:00 A.M. - 12:15 P.M.

Session 4A: Software Quality Assurance

Chair: *John Jenkins, Middlesex University, United Kingdom*

- How to teach practical software quality assurance: an experience report
  J.B. Thompson and H.M. Edwards, University of Sunderland, UK
- The 9 quadrant model for code reviews
  R.P. Nandivada, S. Dutta, A. Chandra, and G. Keeni, Tata Consultancy Services, India
- Investigating the effect of a second software inspection cycle: cost-benefit data from a large-scale experiment on reinspection of a software requirements document
  S. Biffl, M. Halling, and M. Kohle, Technische Universitat Wien, Austria

Session 4B: Formal Methods

Chair: *Hans-Dieter Ehrich, Technische Universitaet Braunschweig, Germany*

- Formal modelling of interactive systems
  D. Goldson, Massey University Albany Campus, New Zealand
- Refinement and modular verification with observers
  A. Merceron, University of Sidney, Australia;
  G.M. Pinna, Universita di Siena, Italy
- TDL: a language for transition diagrams in the derivation of LOTOS specifications
  Y. Sun, The Queen's University of Belfast, UK;
  H. Yang, De Montfort University, UK;
  A. Dix, Staffordshire University, UK

LUNCH 12:30 - 2:00 P.M.

PARALLEL SESSIONS 5 2:00 - 3:15 P.M.

Session 5A: Industrial Experience

Chair: *Barrie Thompson, University of Sunderland, United Kingdom*

- Software acquisition management experience learnt in a multi discipline and multi contract project environment
  S. Wong, Mass Transit Railway Corporation, Hong Kong
- Quality improvement: the six sigma way
  M. Murugappan and G. Keeni, Tata Consultancy Services, India
- Software project measurement criteria
  I.M. Hampton and B.W.T. Quinn, Mass Transit Railway Corporation, Hong Kong

Session 5B: Test Case Generation

Chair: *H.Y. Ip, Vocational Training Council, Hong Kong*

- Specification analysis and test data generation by solving Boolean combinations of numeric constraints
  Jian Zhang, Chinese Academy of Sciences, China
- White on black: a white-box-oriented approach for selecting black-box-generated test cases
  T.Y. Chen, Swinburne University of Technology, Australia;
  P.L. Poon, The Hong Kong Polytechnic University, Hong Kong;
  S.F. Tang, The University of Hong Kong, Hong Kong;
  Y.T. Yu, City University of Hong Kong, Hong Kong
- Towards a more efficient way of generating test cases: class graphs
  K.R.P.H. Leung, Hong Kong Institute of Vocational Education, Hong Kong;
  W. Wong, Hong Kong Baptist University, Hong Kong

COFFEE BREAK 3:15 - 3:45 A.M.

PARALLEL SESSIONS 6 3:45 - 4:35 P.M.

Session 6A: Prototyping

Chair: *Kouichi Kishida, Software Research Associates, Japan*

- A model and prototype tool to manage software risks
  A.A. Keshlaf, Industrial Research Center, Tripoli, Libya;
  K. Hashim, Universiti Tun Abdul Razak, Kuala Lumpur, Malaysia
- Abductive approach to prototyping data flow diagrams
  E.T.H. Fung, City University of Hong Kong, Hong Kong

Session 6B: Electronic Commerce

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

- E-business testing: user perceptions and performance issues
  A. Rudolf and R. Pirker, IBM Global Services, Vienna, Austria
- A reference infrastructure for electronic commerce
  Y. Li, W. Li, and H.B.K. Tan, Nanyang Technological University, Singapore