

# FORGING NEW LINKS

**The 20th International Conference on  
Software Engineering**

**April 19-25, 1998**

**Kyoto International Conference Hall,**

**Kyoto, JAPAN**

***<http://icse98.aist-nara.ac.jp/>***

ICSE 98  
in



***Advance Program***



# ICSE 98

FORGING NEW LINKS

## Technical Program

20 Mon.	TH01: Software Patterns		TH02: Testing & Analysis	TH03: Objectory Process	TH04: Cleanroom
	TH05: Design Patterns		TH06: UML	TH07: C++	TH08: Software Surg
21 Tue.	TH09: Requirements		TH10: CORBA	TH11: COTS	TF02: Design by Cor
	TH12: JAVA		TH13: Distributed Software	TH14:Hypermedia	
	Reception				
22 Wed.	W1: Opening Remarks / Invited Presentation, Nobuaki Kumagai				
	W2-1: Experience with Software Process Improvement			W2-2: Formal modeling	W2-3: c
	W3-1: Reverse Engineering			W3-2: Formal Methods and Object Orientation	W3-3: C
	Welcome Party				
23 Thu.	T1: Keynote Presentation, James Gosling				
	T2-1: Internet/Mobile Code/Security			T2-2: Software Evolution	T2-3: An
	T3-1: Testing			T3-2: Novel Approaches to Design and Validation	T3-3: Ma
	T4: Most Influential Paper from ICSE-10				
	T5-1: Large Scale and Complex System Development			T5-2: Computer Supported Cooperative Work	T5-3: Co
	Conference Banquet				
24 Fri.	F1: Keynote Presentation, TBD				
	F2-1: Object-Oriented Technology			F2-2: Project Estimation and Simulation	F2-3: Fo
	F3-1: Project and Workflow Management			F3-2: Estimation Technologies	F3-3: Ar
	F4: Closing Panel / Closing Remarks				
25 Sat.					
26 Sun.					

## FORGING NEW LINKS

ICSE's twentieth birthday affords an opportunity to reflect on profound changes of the past two decades. Since ICSE's founding, politics and technology have converged to shatter once formidable barriers to international cooperation.

The collapse of the Berlin Wall symbolizes the end of the Cold War, and links in a Web page are a metaphor for our enhanced capacity for global information exchange. In this spirit, we have worked hard to ensure that ICSE98 will see an unprecedented increase in the level of international participation and provide an opportunity to highlight the interests and accomplishments of members from the Asian-Pacific region.

Yet our outreach must extend beyond geography. As we continue to build bridges to other software disciplines, researchers and practitioners in allied fields will benefit from an understanding of the contributions that software engineering can make to their work. In turn, we must address their problems in our research.

New collaborations between academia and industry will also enrich ICSE98 and our profession as a whole. The presentation of top-notch papers will, of course, constitute the core activity of ICSE98. Cutting edge research will be showcased in technical paper sessions, workshops, panels, posters, demonstrations, and special sessions devoted to the lessons learned from building large and complex software systems.

We hope you will take advantage of this unique opportunity to meet new colleagues, exchange ideas, and explore the nearly limitless possibilities that lie ahead. Join us in Kyoto for ICSE98 and share the excitement that comes from forging new links.

Koji Torii, ICSE98 General Chair

Kokichi Futatsugi and Richard Kemmerer, ICSE98 Program Co-chairs

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## Corporate Sponsors



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			Workshop			
y,	TF01: Experience Factory	Asia Pacific Forum		WS06,WS08,WS09	WS03 WS04 WS12	WS02
ct	TF03: Software Forensics	Doctoral Symposium	ICSE98 EXPO	WS10		
		Lessons and Status Reports, Mini-Tutorials, and Poster and Research Demonstrations (TBD)				
			WS07,WS11,WS13	WS05		

## Tutorials

**APRIL 20 (MONDAY) 1998**

### Morning (9:30 - 13:00)

#### TH01: Software Patterns

Ralph Johnson (University of Illinois)

#### TH02: Software Testing and Analysis for Practitioners

Mauro Pezze' (Politecnico di Milano) and Michal Young (University of Oregon)

#### TH03: The Objectory Process

Phillipe Kruchten (Rational Software Corporation)

#### TH04: Cleanroom's Place in Today's Software development World

Chales Engle and Dave Fuhrer (Q-labs)

### Afternoon (14:00 - 17:30)

#### TH05: Using Design Patterns to Construct Frameworks

Ralph Johnson (University of Illinois)

#### TH06: Introducing the Unified Modeling Language (UML)

Stephen Morris (The City University, London)

#### TH07: C++ for Software Engineering: Standard Solutions for Standard Problems

Mehdi Jazayeri and Georg Trausmuth (Technical University of Vienna)

#### TH08: Software Surgery

Keith Gallagher (Loyola College)

### Full day (9:30 - 17:00)

#### TF01: The Experience Factory: How to Build and Run One

Victor Basili and Frank McGarry (University of Maryland)

**APRIL 21 (TUESDAY) 1998**

### Morning (9:30 - 13:00)

#### TH09: Requirements Analysis for Evolving Systems

Colin Potts (Georgia Institute of Technology)

#### TH10: An Introduction to OMG/CORBA

Wolfgang Emmerich (University College London)

#### TH11: COTS Product and Technology Evaluation: Concepts and Pragmatics

Kurt Wallnau and David Carney (Software Engineering Institute)

### Afternoon (14:00 - 17:30)

#### TH12: Java (title tentative)

James Gosling (Sun Microsystems)

#### TH13: Distributed Software Architectures

Jeff Kramer and Jeff Magee (Imperial College)

#### TH14: What Every Software Engineer Should Know about Hypermedia for Designing World Wide Web Applications

Michael Bieber (New Jersey Institute of Technology)

### Full-day (9:30 - 17:00)

#### TF02: Design by Contract

Bertrand Meyer (Interactive Software Engineering Inc.)

#### TF03: Software Forensics: Digging through the data

Shari Lawrence Pfleeger (Systems/Software, Inc.)





# ICSE 98

FORGING NEW LINKS

## Technical Program

Lessons and Status Reports, Mini-Tutorial, and Demonstration Sessions will be announced in the final program or WEB site <http://icse98.aist-nara.ac.jp/>.

**APRIL 22 (WEDNESDAY) 1998**

### MORNING

#### W1: Plenary Session

- Opening Remarks
- Invited Presentation, Nobuaki Kumagai (Past President of Osaka U., Japan)

### AFTERNOON

#### W2-1: Experiences with Software Process Improvement

- *Agile Software Process and Its Experience*, Mikio Aoyama (Nigata Institute of Tech., Japan)
- *Software Process Modeling and Enactment: An Experience Report Related to Problem Tracking in an Industrial Project*, Volker Gruhn (U. of Dortmund, Germany), Juri Urbainczyk (Open Software Associates, Germany)
- *Toward Computational Support for Software Process Improvement Activities*, Keishi Sakamoto (OMRON Corp., Japan), Kumiyo Nakakoji (Nara Institute of Science and Tech., Japan), Naoki Niihara, Yasunari Takagi (OMRON Corp., Japan)

#### W2-2: Formal Modeling

- *Modeling and Analysis of a Virtual Reality System with Time Petri Nets*, Rajesh Mascarenhas (Sybase Inc., USA), Dinkar Karumuri (Oracle Consulting, USA), Ugo Buy (U. of Illinois, USA), Robert Kenyon (U. of Illinois, USA)
- *Specification and Verification of an Object Request Broker*, Gregory Duval (EPFL, Switzerland)
- *Integrating Obstacles in Goal-Driven Requirements Engineering*, Axel van Lamsweerde, Emmanuel Letier (U. Catholique de Louvain, Belgium)

#### W2-3: Panel - Critical Issues in Software Evolution

Dewayne Perry (Bell Lab., USA), et. al.

#### W3-1: Reverse Engineering

- *Conceptual Module Querying for Software Reengineering*, Elisa Baniassad, Gail Murphy (U. of British Columbia, Canada)
- *Reuse-Driven Interprocedural Slicing*, Mary Jean Harrold, Ning Ci (Ohio State U., USA)
- *Extracting Concepts from File Names: A New File Clustering Criterion*, Nicolas Anquetil, Timothy Lethbridge (U. of Ottawa, Canada)

#### W3-2: Formal Methods and Object Orientation

- *Blending Object-Z and Timed CSP: An Introduction to TCOZ*, Brendan Mahony (Dept. of Defence, Australia), Jin Song Dong (CSIRO, Australia)
- *Three Dimensional Software Modeling*, Joseph Gil (Israel Institute of Tech., Israel), Stuart Kent (U. of Brighton, UK)
- *Formalizing Design Patterns*, Tommi Mikkonen (Tampere U. of Tech., Finland)

#### W3-3: Panel - Computing and Communication in the Age of Mobility

Gruia-Catalin Roman (Washington U. in Saint Louis, USA), et. al.

#### Welcome Party

**APRIL 23 (THURSDAY) 1998**

### MORNING

#### T1: Plenary Session

Keynote Presentation, James Gosling (SUN, USA)

#### T2-1: Internet/Mobile Code/Security

- *Techniques for Trusted Software Engineering*, Premkumar Devanbu (U. of California Davis, USA), Philip Fong (Simon Fraser U., Canada), Stuart Stubblebine (AT&T Lab., USA)
- *An Approach to Large-Scale Collection of Application Usage Data over the Internet*, David Hilbert, David Redmiles (U. of California Irvine, USA)
- *Evaluating the Tradeoffs of Mobile Code Design Paradigms in Network Management Applications*, Mario Baldi, Gian Pietro Picco (Politecnico di Torino, Italy)

#### T2-2: Software Evolution

- *The Use of Goals to Surface Requirements for Evolving Systems*, Annie Anton (U. of South Florida, USA), Colin Potts (Georgia Institute of Tech., USA)
- *Promises: Limited Specifications for Analysis and Manipulation*, Edwin Chan, John Boyland, William Scherlis (Carnegie Mellon U., USA)
- *Architecture-Based Runtime Software Evolution*, Peyman Oreizy, Nenad Medvidovic, Richard Taylor (U. of California Irvine, USA)

#### T2-3: Panel - Are Methods Really Useful?

Motoshi Saeki (Tokyo Inst. of Tech, Japan), et.al.

### AFTERNOON

#### T3-1: Testing

- *An Empirical Study of Regression Test Selection Techniques*, Todd Graves (Bell Lab., USA), Mary Jean Harrold (Ohio State U., USA), Jung-Min Kim, Adam Porter (U. of Maryland, USA), Gregg Rothermel (Oregon State U., USA)
- *What You See Is What You Test: A Methodology for Testing Form-Based Visual Programs*, Gregg Rothermel, Lixin Li, Christopher DuPuis, Margaret Burnett (Oregon State U., USA)

#### T3-2: Novel Approaches to Design and Validation

- *Integrating Architecture Description Languages with a Standard Design Method*, Jason Robbins, Nenad Medvidovic, David Redmiles, David Rosenblum (U. of California Irvine, USA)
- *Assisting the Automated Validation Process of User Interfaces Systems*, Bruno d'Ausbourg, Christel Seguin, Guy Durrieu, Pierre Roche (ONERA-CERT, France)

#### T3-3: Managing Objects

- *Consistency Management for Complex Applications*, Peri Tarr (IBM, USA), Lori Clarke (U. of Massachusetts, USA)
- *Reifying Configuration Management for Object-Oriented Software*, J-M Jezequel (Irisa/CNRS, France)

#### T4: Plenary Session

Most Influential Paper from ICSE-10

#### T5-1: Large Scale and Complex System Development

- *Parallel Changes in Large Scale Software Development: An Observational Case Study*, Dewayne Perry, Harvey Siy, Lawrence Votta (Bell Lab., USA)
- *Exploiting an Event-Based Infrastructure to Develop Complex Distributed*

- Systems, G. Cugola, E. Di Nitto, A. Fuggetta (Politecnico di Milano, Italy)
- *Conceptual Simplicity Meets Organizational Complexity: Case Study of a Corporate Metrics Program*, James Herbsleb, Rebecca Grinter (Bell Lab., USA)

#### **T5-2: Computer Supported Cooperative Work**

- *An Adaptable Generation Approach to Agenda Management*, Eric McCall, Lori Clarke, Leon Osterweil, (U. of Massachusetts, USA)
- *Measuring Cognitive Activities in Software Engineering*, Pierre Robillard, Patrick d'Astous (Ecole Polytechnique de Montreal, Canada), Francoise Detienne, Willemien Visser (INRIA, France)

#### **T5-3: Panel - Component-Based Software Engineering**

- Mikio Aoyama (Niigata Inst. of Tech., Japan), et. al.

#### **Conference Banquet**

**APRIL 24 (FRIDAY) 1998**

#### **MORNING**

##### **F1: Plenary Session**

- *Keynote Presentation*: TBD

##### **F2-1: Object-Oriented Technology**

- *Design Components: Towards Software Composition at the Design Level*, Rudolf Keller, Reinhard Schauer (U. de Montreal, Canada)
- *Non-Intrusive Object Introspection in C++: Architecture and Application*, Tyng-Ruey Chuang, Y. S. Kuo, Chien-Min Wang (Academia Sinca, Taiwan)
- *Object Oriented Reuse: Experience in Developing a Framework for Speech Recognition Applications*, Savitha Srinivasan, John Vergo (IBM, USA)

##### **F2-2: Project Estimation and Simulation**

- *Evaluation of Subjective Effort Estimation Techniques*, Martin Hoest, Claes Wohlin (Lund U., Sweden)
- *Using Simulation to Build Inspection Efficiency Benchmarks for Development Projects*, Lionel Briand, Khaled El Emam, Oliver Laitenberger (Fraunhofer IESE, Germany), Thomas Fussbroich (U. of Kaiserslautern, Germany)
- *A Learning Curve Based Simulation Model for Software Development*, Noriko Hanakawa, Syuji Morisaki, Ken-ichi Matsumoto (Nara Institute of Science and Tech., Japan)

##### **F2-3: Panel - Formal Methods in 21st Century (Tentative)**

TBD

#### **AFTERNOON**

##### **F3-1: Project and Workflow Management**

- *The Ramp-Up Problem in Software Projects: A Case Study of How Software Immigrants Naturalize*, Susan Sim (U. of Toronto, Canada), Richard Holt (U. of Waterloo, Canada)
- *Overcoming the NAH Syndrome for Inspection Deployment*, Pankaj Jalote, S. Haragopal (Infosys Technologies Ltd., India)
- *Workflow Management Based on Process Model Repositories*, Volker Gruhn (U. of Dortmund, Germany), Monika Schneider (o.tel.o service GmbH, Germany)

##### **F3-2: Estimation Technologies**

- *A Hybrid Method for Software Cost Estimation and Risk Assessment*, Lionel Briand, Khaled El Emam, Frank Bomarius (Fraunhofer IESE, Ger-

many)

- *Defect Content Estimations from Review Data*, Claes Wohlin, Per Runeson (Lund U., Sweden)
- *Analyzing Effects of Cost Estimation Accuracy on Quality and Productivity*, Osamu Mizuno, Tohru Kikuno (Osaka U., Japan), Katsumi Inagaki, Yasunari Takagi, Keishi Sakamoto (OMRON Corp., Japan)

#### **F3-3: Panel - Are New-Generation Architecture Description Language Useful?**

- John Salasin (DOD, U.S.A.), Barry W. Boehm (USC, U.S.A.), David Garlan (CMU, U.S.A.), Alex Wolf (U. of Colorado, U.S.A.)et. al.

#### **F4: Plenary Session**

- *Closing Panel*: TBD
- *Closing Remarks*

## **Posters and Research Demonstrations**

Posters and Research Demonstrations provide an excellent opportunity to show late-breaking results and to discuss the results with the conference participants. Interactive communication and demonstration will be the most exciting and powerful presentation.

**Posters:** All types of work in software engineering can be presented effectively using posters during the conference. Display space will be provided in the poster and research demonstration room. A description of each poster will appear in the proceedings for posters and research demonstrations.

**Research Demonstrations:** Research demonstrations are intended to show early implementation of novel software engineering concepts. Research demonstrations will be scheduled into blocks of time for demonstration. In addition, a booth will be provided in the poster and research demonstration room to allow informal demonstrations throughout the conference. A description of each research demonstration will appear in the proceedings for research demonstrations. We consider any system which is at least six months away from appearing in a commercial product as a "research system". Commercial systems will not be accepted as research demonstrations.

**Contact:** Yoshiaki Fukazawa (fukazawa@fuka.info.waseda.ac.jp)







# ICSE 98

FORGING NEW LINKS

## Joint Workshops

*For the detail, please check each WWW page.*

### WS01: IWSSD-9 (9th Int'l Workshop on Software Specification and Design)

PC Co-chairs: A. Finkelstein (Imperial College, U. K.) and U. Buy (U. Illinois at Chicago, U. S. A.)

Date: April 16-18, 1998

Place: Ise-shima Royal Hotel (This workshop only)

Contact: M. Saeki (TIT, Japan), E-mail [saeki@cs.titech.ac.jp](mailto:saeki@cs.titech.ac.jp)

<http://salab-www.cs.titech.ac.jp/iwssd9.html>

Topics: The IWSSD is a leading international forum for research on software architecture, concurrent, distributed and real-time systems, formal models, and requirements and design methods. IWSSD-9 will use working-group discussions in order for participants to focus on their shared concerns in representing and reasoning about models of software-intensive systems.

### WS02: ISORC'98 (Int'l Symposium on Object-oriented Real-time Distributed Computing)

General Co-chairs: K. Kim (U.C. Irvine, U.S.A.), K. Mori (Tokyo Inst. of Tech, Japan) and E. Nett (GMD, Germany)

Date: April 20-22, 1998

Contact: Chittur Subbaraman (U.C. Irvine, U.S.A.),

E-mail: [csubbara@ece.uci.edu](mailto:csubbara@ece.uci.edu)

<http://dream.eng.uci.edu/isorc/>

Topics: The ISORC is a new symposium series dealing with the emerging object-oriented real-time distributed computing (ORC) technology. The main technical theme of the ISORC is how to extend the well established object-oriented computing technology, i.e., the technology that has prevailed the non-real-time business data processing field in the past decade, into the technologies that are effectively applicable to various classes of real-time applications.

### WS03: PDSE'98 (Int'l Symp. on Software Engineering for Parallel and Distributed systems)

PC Co-chairs: B. Kraemer (Fern Universitaet Hagen, Germany) and N. Uchihiro (Toshiba, Japan)

Date: April 20-21, 1998

Contact: N. Uchihiro, E-mail: [uchi@ssel.toshiba.co.jp](mailto:uchi@ssel.toshiba.co.jp)

<http://www.dcs.shef.ac.uk/~prc/PDSE98/> or

<http://www.ec.kyushu-u.ac.jp/~zengo/PDSE98/>

Topics: PDSE98 provides a forum for exchange of information and publication of the latest technological and theoretical advances in software engineering for parallel and distributed systems. Topics include development methodologies, software architectures, languages (eg Java), software reuse, testing and verification, performance modeling and prediction, practical experiences for parallel and distributed systems.

### WS04: Int'l Workshop on the Principle of Software Evolution

Organizer: T. Katayama (JAIST, Japan), D. Perry (Bell Labs, U.S.A.), et al.

Date: April 20-21, 1998

Contact: T. Katayama, E-mail: [katayama@jaist.ac.jp](mailto:katayama@jaist.ac.jp)

<http://kt-www.jaist.ac.jp:8000/icse98.html>

Topics: Software evolution is widely recognized as one of the most important problems in software engineering. Despite the significant amount of work that has been done, there are still fundamental problems to be solved. The purpose of this workshop is to discuss principles and mechanisms for software evolution.

### WS05: Int'l Workshop on Component-Based Software Engineering

PC Co-Chairs: K. Wallnau (SEI, U. S. A.), J. Ning (Andersen Consulting, U. S. A.) and S. Uehara (Fujitsu Labs., Japan)

Date: April 25-26, 1998

Contact: K. Wallnau, E-mail: [kcw@sei.cmu.edu](mailto:kcw@sei.cmu.edu)

[http://www.sei.cmu.edu/technology/dynamic\\_systems/cbs/icsewshp.html](http://www.sei.cmu.edu/technology/dynamic_systems/cbs/icsewshp.html)

Topics: The theme of this workshop is focused on component-management infrastructures—the software technology that supports development, execution, and deployment of component-based systems.

### WS06: Int'l Workshop on Aspect-Oriented Programming

PC Co-Chairs: C. V. Lopes (Xerox PARC, U. S. A.), G. Kiczales (Xerox PARC, U. S. A.), G. Murphy (U. British Columbia, Canada) and A. Lee (Korea U., Korea)

Date: April 20, 1998

Contact: C. V. Lopes (Xerox PARC, U. S. A.)

E-mail: [lopes@parc.xerox.com](mailto:lopes@parc.xerox.com)

<http://www.parc.xerox.com/aop/icse98/>

Topics: migrating to aspects / software design with aspects / how to identify aspects / reusing aspects / aspect description languages / the effect of aspects on software structure / programming language and environment support / translation techniques / debugging and testing with aspects

### WS07: Software Engineering over the Internet

PC Co-Chairs & Contact: F. Maurer (U. Calgary, Canada)

E-mail: [maurer@cpsc.ucalgary.ca](mailto:maurer@cpsc.ucalgary.ca)

<http://sern.cpsc.ucalgary.ca/~maurer/ICSE98WS/ICSE98WS.html>

Date: April 25, 1998

Topics: web-based software process modeling environments / distributed process enactment / replication support for software documents / distributed data repositories / world-wide configuration management support

### WS08: Engineering Hypertext for Future Information Systems

PC Co-Chairs: G. Rossi (LIFIA, Argentina) and

H. Ziv (Quest Software and U.C. Irvine, U. S. A.)

Date: April 20, 1998

Contact: H. Ziv

E-mail: [zivh@quests.com](mailto:zivh@quests.com)

<http://www.ics.uci.edu/~kanderso/htf5/cfp.html> or

<http://www.ep.cs.nott.ac.uk/HTF>

Topics: This workshop focuses on the value added to a system by hypertext and hypermedia support capabilities as well as the actual process of embedding hypertext functions into non-hypertext information systems. The main theme for this workshop is engineering hypertext functionality, i.e., various aspects of constructing hypertext capabilities.

### WS09: PSMT (Workshop on Precise Semantics for Software Modeling Techniques)

PC Co-Chairs: M. Broy (Tech. U. Munich, Germany), D. Coleman (Kings College, U. K.), T. S. E. Maibaum (Imperial College, U. K.), and B. Rumpe (Tech. U. Munich, Germany)

Date: April 20, 1998

Contact: B. Rumpe

E-mail: [rumpe@informatik.tu-muenchen.de](mailto:rumpe@informatik.tu-muenchen.de)

<http://www4.informatik.tu-muenchen.de/~rumpe/icse98-ws/>

### WS10: Workshop on Human Dimensions in Successful Software Development

PC Chair & Contact: S. Murugesan (U. of Western Sydney Macarthur, Australia)

E-mail: [s.murugesan@uws.edu.au](mailto:s.murugesan@uws.edu.au)

<http://btwebsh.macarthur.uws.edu.au/san/hudworkshop/>

Date: April 21, 1998

Topics: This workshop will focus on human dimensions in software develop-

ment, implementation, utilization and maintenance and have a fresh and comprehensive look at a range of human issues that impede successful software development and what could be, or should be, done solve those problems.

#### **WS11: IWSEE5 (Int'l Workshop on Software Engineering Education)**

Date: April 25, 1998

PC Chair & Contact: J. Jenkins (U. London, U.K.)

E-mail: J.O.Jenkins@city.ac.uk

Topics: The workshop focuses on the following topics but not limited.

Graduate programs in software engineering education

Discussion of syllabuses

Teaching and learning processes and assessment

#### **WS12: MSE'98 (Int'l Workshop on Multimedia Software Engineering)**

Date: April 20-21, 1998

General Co-Chairs & Contact: J. Tsai (U. Illinois at Chicago, U.S.A.), E-mail: tsai@eecs.uic.edu, and F. Bastani (General Co-Chair, U. Texas at Dallas, U.S.A.), E-mail: bastani@utdallas.edu

<http://kel.eecs.uic.edu/MSE98/>

Topics: The purpose of this workshop is to bring together active researchers in the area of software engineering and multimedia systems to exchange and evaluate the issues, experience, and trends in this area. MSE'98 will be conducted as a combination of paper presentations, invited talks, and panel discussion.

#### **WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility**

Organizer C. Ghezzi (Politecnico di Milano, Italy) and G.-C. Roman (Washington U. in St. Louis, U.S.A.)

Date: April 25, 1998

Submission Due: February 1, 1998

Contact: G.-C. Roman, E-mail: roman@cs.wustl.edu

<http://www.cs.wustl.edu/~roman/ICSE-MOB/>

Topics: The immediate objective is to provide a forum for intellectual debate as well as a tutorial introduction for new comers to this field. The ultimate goal is to define an influential research agenda for the area as a whole and to generate advocacy for it by stimulating new research initiatives.

## **Doctoral Symposium**

**Tuesday, April 21 9:00am-5:00pm**

The ICSE 98 Doctoral Symposium is a one day workshop prior to the regular ICSE technical conference. The goal of the doctoral symposium is to publicly discuss research goals, methods, and results at an early stage of Ph.D. research and provide useful guidance for completion of the dissertation research. The symposium will also provide an opportunity for student participants to interact with each other as well as with established researchers and engineers in the field.

As the systems of doctoral courses are different by cultures, we are expecting participants coming from America, Europe, Asia-Pacific and all over the world. We also plan to discuss how common or different the doctoral systems are among countries.

**Contact:** Tetsuo Tamai (tamai@graco.c.u-tokyo.ac.jp)

## **ICSE98 EXPO**

**Tuesday, April 21 - Friday, April 24**

The Exhibit offers commercial exhibit space to vendors as well as research exhibit space for products by academic and government

research laboratories. There are two types of exhibits.

- Commercial products from vendors.

- Research products from academia, industrial research laboratories, and government laboratories.

Some exhibit space remains, and applications will be accepted on a first-come first-served basis.

**Exhibitors in Alphabetical Order(tentative):**

Anritsu

CSK

DEC

Fuji-Xerox

Hewlett Packard

Hitachi

IBM

NEC

NTT DATA

NTT Software

OGIS Research Institute

OMRON

PFU

Rikei

SEKI TECHNOTRON

SGI

Sharp

Software Research Associates

Sumitomo Electric Industries

Toshiba

**Contact:** Shinichi Honiden (icseexpo@po.iijnet.or.jp)

## **Asia Pacific Forum**

**Monday, April 20 - Tuesday, April 21  
(Tentative)**

Monday, April 20 - Tuesday, April 21 (Tentative)

ICSE98 provides an opportunity for exchanging ideas and/or information for researchers and practitioners in Asia-Pacific Region. At ICSE17 in Seattle 1994, we had a workshop on "Asian Approaches to Software Engineering". It was very successful. We are planning to have a similar event in Kyoto. And it will also be possible to implement other plans such as to have a forum to discuss emerging Asian software markets, or for special exhibits of software engineering tools made in Asia.

**Contact:** Kouichi Kishida (k2@sra.co.jp)



# ICSE98 Conference Registration Form

We recommend to use our web page for filling and printing this registration form. URL is "http://icse98.aist-nara.ac.jp/registration".

PLEASE PRINT/TYPE CLEARLY

Title (circle one): Prof. Dr. Mr. Mrs. Ms.

First Name (Given Name) Middle Initial

Last Name (Family/Surname)

Company / Organization

Abbreviation  
(The information above will be printed on your name card at the conference.)

Mailing Address

City State Postal Code Country

Phone Fax

E-mail

Society Membership:

\_\_\_ IPSJ \_\_\_ JSSST \_\_\_ IEEE \_\_\_ ACM

Membership Number of Above Society

Indicate Payment Method:

We cannot accept checks or money orders.

\_\_\_ Wire Transfer (Please pay any transfer fee involved.)

Account Name: ICSE98  
Saving Account Number: 259794  
Nanto Bank, Tomigaoka Branch

Sender Name Transfer Date

\_\_\_ VISA \_\_\_ Master Card

I authorize ICSE98 to apply the full balance due, for selected Registrations and Options, to my credit card.

Credit Card Number

Name (as it appears on card) Expiration Date

Signature Date

TOTAL REMITTANCE (A+B+C+D):

(must be in Japanese Yen)

Notes:

\* The deadline for refund requests is April 6, 1998.

\* A 5,000 yen processing fee will be assessed for all refunds.

MAIL OR FAX COMPLETED FORM WITH PAYMENT TO:

ICSE98 Registration Office

c/o ATR Media Interaction & Communications Research Laboratories

2-2 Hikaridai, Seika-cho,

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phone: +81-774-95-1430 fax: +81-774-98-2054

e-mail: icse98-apply@mic.atr.co.jp

Registration Fee:

Early Registration .... Received on or before March 16, 1998 JST  
Late Registration ..... Received after March 16, 1998 JST

## A) Technical Program

Member	Nonmember	Student	Fee Paid
Early	Late/On-site	Early	Late/On-site
40,000 yen	52,000 yen	52,000 yen	65,000 yen
20,000 yen	25,000 yen		

\* The registration fee for the technical program includes ONE copy of the proceedings and tickets to social events (excluding banquets).  
\* Students must send a proof of eligibility with your registration form.

## B) Tutorials

\* Please be sure NOT to book more than one TUTORIAL/WORKSHOP for the same time. No refund will be given.  
\* Please check our Web site before registration for schedule change. We retain the right to cancel tutorials when there are not enough participants.

Full Day Tutorials:	Member		Nonmember		Fee Paid
	Early	Late/On-site	Early	Late/On-site	
	40,000 yen	50,000 yen	50,000 yen	60,000 yen	

**Monday, April 20, 1998**

\_\_\_ TF01: The Experience Factory: How to Build and Run One

**Tuesday, April 21, 1998**

\_\_\_ TF02: Design by Contract or

\_\_\_ TF03: Software Forensics: Digging through the data

Half Day Tutorials:	Member	Nonmember	Fee Paid
	Early	Early	
	20,000 yen	25,000 yen	30,000 yen

**AM Monday, April 20, 1998**

- \_\_\_ TH01: Software Patterns, or
- \_\_\_ TH02: Software Testing and Analysis for Practitioners, or
- \_\_\_ TH03: The Objectory Process, or
- \_\_\_ TH04: Cleanroom's Place in Today's Software development World

**PM Monday, April 20, 1998**

- \_\_\_ TH05: Using Design Patterns to Construct Frameworks, or
- \_\_\_ TH06: Introducing the Unified Modeling Language (UML), or
- \_\_\_ TH07: C++ for Software Engineering: Standard Solutions for Standard Problems, or
- \_\_\_ TH08: What Every Software Engineer Should Know about Hypermedia for Designing World Wide Web Applications

**AM Tuesday, April 21, 1998**

- \_\_\_ TH09: Requirements Analysis for Evolving Systems, or
- \_\_\_ TH10: An Introduction to OMG/CORBA, or
- \_\_\_ TH11: COTS Product and Technology Evaluation: Concepts and Pragmatics

**PM Tuesday, April 21, 1998**

- \_\_\_ TH12: Java (title tentative), or
- \_\_\_ TH13: Distributed Software Architectures, or
- \_\_\_ TH14: Software Surgery

## C) Workshops

\* Please check each WWW page before registration. Some workshops are for invited attendees only.

**WS01: IWSSD-9 (9th Int'l Workshop on Software Specification and Design) (Invited Only)**

Separately registered. Check <http://salab-www.cs.titech.ac.jp/iwssd9.html>

**WS02: ISORC98 (Int'l Symposium on Object-oriented Real-time distributed Computing)**

Separately registered. Check <http://dream.eng.uci.edu/isorc/>

\_\_\_ **WS03: PDSE'98 (Software Engineering on Parallel and Distributed systems)**

Early: 15,000 yen Late: 18,000 yen Student: 12,000 yen

\_\_\_ **WS04: Int'l Workshop on the Principle of Software Evolution (Invited Only)**

Early: 15,000 yen Late: 18,000 yen Student: 12,000 yen

\_\_\_ **WS05: Int'l Workshop on Component-Based Software Engineering**

Early: 15,000 yen Late: 18,000 yen Student: 12,000 yen

\_\_\_ **WS06: Aspect-Oriented Programming Workshop**

Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen

\_\_\_ **WS07: Workshop on Software Engineering over the Internet**

Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen

\_\_\_ **WS08: Engineering Hypertext for Future Information Systems (Invited Only)**

Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen

\_\_\_ **WS09: Workshop on Precise Semantics for Software Modeling Techniques**

Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen

\_\_\_ **WS10: Workshop on Human Dimensions in Successful Software Development**

Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen

\_\_\_ **WS11: IWSEE5 (Int'l Workshop on Software Engineering Education)**

Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen

\_\_\_ **WS12: Int'l Workshop on Multimedia Software Engineering**

Early: 15,000 yen Late: 18,000 yen Student: 12,000 yen

\_\_\_ **WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility**

Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen

## D) Banquet

\_\_\_ Will attend (5,000 yen) \_\_\_ Will attend with my spouse (8,000 yen)

If you select "Will attend with my spouse", please type your spouse's Title & Name. This will be printed on your spouse's name card at the Banquet. : \_\_\_\_\_



# Accommodations

Kinki Nippon Tourist Co., Ltd. (KNT) /Official Travel Agent for ICSE 98

April in Japan is the best tourism season and it will be very tight to make hotel and tour reservation, so we welcome your requests as early as possible. We have prepared the tours around Kyoto & Nara. If you need further information, please feel free to contact with KNT.

## Reserved Hotels List

Hotels	Room Rate(yen)		Access to the venue	
A-1 Takaragaike Prince (URL: <a href="http://www.princehotels.co.jp/kyoto-e/index.html">http://www.princehotels.co.jp/kyoto-e/index.html</a> )	—	T/S:13,640	T:21,820	5 min.(walk)
B-1 Rhiga Royal Hotel Kyoto (URL: <a href="http://www.rhiga.com/kyoto/index.html">http://www.rhiga.com/kyoto/index.html</a> )	S:11,370	T/S:15,460	T:18,180	35 min.(subway)
B-2 New Miyako Hotel	—	T/S:13,000	T:17,000	30 min.(subway)
B-3 Hotel New Hankyu (URL: <a href="http://www.o-kini.or.jp/hotel/hnh/kyoto-e/kyoto_1.html">http://www.o-kini.or.jp/hotel/hnh/kyoto-e/kyoto_1.html</a> )	S:12,000	T/S:14,000	T:14,000	30 min.(subway)
C-1 Hotel Keihan Kyoto	S:8,640	—	—	30 min.(subway)
C-2 Kyoto Garden (URL: <a href="http://www.ampark.co.jp/ghs/ghshijoe.html">http://www.ampark.co.jp/ghs/ghshijoe.html</a> )	S:7,280	T/S:10,000	T:12,730	25 min.(subway)
C-3 Maruko Inn Kyoto	S:6,820	—	T:11,280	25 min.(subway)

Notice:

\* S stands for Single, T/S stands for Twin for Single Usage and T stands for Twin Room.

\* Check Hotel Rates in URL: <http://www.keihanna-plaza.co.jp/ICSE98/Hotel/registration.html> (in detail).

\* Above rates are room charges per room per day basis. They do not include a 10% service charge or a 5% consumption tax.

\* If total amount of the hotel bill per day per person exceeds more than 15,000 yen, another 3% of local tax will be added.

\* If the room of your first choice is fully booked, second or third choice of room or other alternatives will be automatically assigned.

## Hotel Reservation Form

\* Please use one form per room request and fill in block letters.

\* Please type and return this form to Kinki Nippon Tourist Co., Ltd. (KNT) by fax (+81-6-314-1601).

**Application Deadline: Monday March 16, 1997**

Title: ( )Prof. ( )Dr. ( )Mr. ( )Mrs. ( )Ms. (Please mark "x".)

First name \_\_\_\_\_ Middle initial \_\_\_\_\_ Last name \_\_\_\_\_

Section/Department \_\_\_\_\_

Affiliation \_\_\_\_\_

Mailing address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Postal code \_\_\_\_\_ Country \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ E-Mail \_\_\_\_\_

**HOTEL ACCOMMODATIONS** Please give your chosen hotel code from reserved hotel list

1st choice \_\_\_\_\_ 2nd choice \_\_\_\_\_ 3rd choice \_\_\_\_\_ Desired room type: ( ) Single ( ) Twin room/Single Usage  
( ) Twin (shared with: \_\_\_\_\_)

Check-in Date: \_\_\_\_\_ for \_\_\_\_\_ night(s)

**PAYMENT INFORMATION** Please fill your credit card information.

Type of Card: ( )Visa, ( )Master Card, ( )American Express

Credit Card Number \_\_\_\_\_ Expiration Date:(Month/Year) \_\_\_\_\_

Holder's Name (please type) \_\_\_\_\_ Holder's Signature \_\_\_\_\_ Date \_\_\_\_\_

Above credit card information is necessary for the process of hotel reservation. If you cancel the assigned hotel, we charge the cancellation fee based on the hotel agreement.

**I agree with the deduction of cancellation charge caused by my cancellation of assigned hotel.**

Signature \_\_\_\_\_ Date \_\_\_\_\_

Kinki Nippon Tourist Co., Ltd. International Travel, Osaka Branch  
c/o Nikko Bldg. 7F, 2-11-8, Sonezaki, Kita-ku, Osaka 530, JAPAN  
Phone: +81-6-313-6868 / Fax: +81-6-314-1601 / E-Mail: [intlosa@tabi.knt.co.jp](mailto:intlosa@tabi.knt.co.jp)



# ICSE 98

FORGING NEW LINKS

## WELCOME TO KYOTO IN CHERRY BLOSSOM SEASON

### CITY OF HISTORY AND LEARNING

Kyoto, a city with 1,200 years of history, is the cultural soul of Japan. Nestled among low mountains, it is blessed with both natural beauty and a rich historical legacy. It is the ideal site for international conventions. From its establishment as Japan's capital in 794 until the Meiji Restoration in 1868, Kyoto flourished as the center of government, commerce and culture in Japan. Traditional arts and an abundance of shrines and temples give the city its distinct character. With nearly 1.5 million residents, Kyoto is a vibrant mixture of old and new. Many high-tech firms have chosen it as their headquarters, and the city boasts 47 public and private colleges and universities. These significant intellectual resources combine with Kyoto's long history and tradition to provide an ideal milieu for innovation and creativity.

### NATURAL BEAUTY

Kyoto is a panorama of the changing seasons: from the springtime cherry blossoms lining narrow walkways, the lush greenery of summer, to the brilliant autumn foliage of Japanese maples and the delicate layer of snow covering the surrounding mountainsides in winter. The passage of seasons is also evident in the beautiful gardens of Kyoto's ancient temples and shrines.

### CULTURAL HERITAGE

Reflecting its long history as the cultural and religious center of Japan, Kyoto is home to nearly 2,000 Buddhist temples and Shinto shrines. The city's international cultural significance was recognized when 17 historical sites in Kyoto were designated as UNESCO World Cultural Heritage Sites. Kyoto is the location of 20% of Japan's national treasures. More than 60 museums throughout the city offer visitors the opportunity to view priceless works of art and important cultural objects.

### KYOTO INTERNATIONAL CONFERENCE HALL

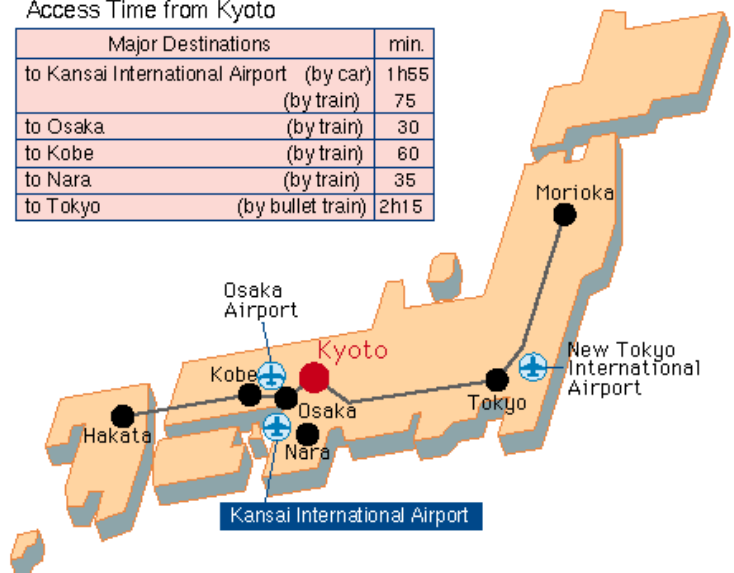
Japan's leading convention center, the Kyoto International Conference Hall, is a complex consisting of seven separate conference halls, the largest of which can hold 2,000 persons. Another 70 conference rooms of various sizes are available for smaller meetings. Two large banquet halls and a Japanese landscape garden offer additional settings for convention participants to meet and communicate informally.

### TRANSPORT

Kyoto has many modern hotels with accommodations for up to 20,000 visitors. Located near the center of Japan, it is readily accessible by land and air. The high-speed Shinkansen (bullet train) links Tokyo with Kyoto in 2 hours and 15 minutes. Overseas visitors arriving at Kansai International Airport (KIX) have a comfortable 75-minute ride by the JR Haruka Express train to Kyoto Station. There is a direct subway link from Kyoto Station to Kyoto International Conference Hall, taking about 20 minutes.

Access Time from Kyoto

Major Destinations	min.
to Kansai International Airport (by car)	1h55
(by train)	75
to Osaka (by train)	30
to Kobe (by train)	60
to Nara (by train)	35
to Tokyo (by bullet train)	2h15



## ICSE99

*The 21st International Conference on Software Engineering*

Los Angeles Airport Marriott Hotel, USA

May 16-22, 1999

**Preparing for the Software Century: Software Engineering Challenges for the Global Electronic Community**

Software pervades all of the growing web of computers, communications, personal and commercial services, financial and public services, and entertainment services evolving into the global electronic community of the 21st century. Providing timely, cost-effective, high-quality software for the diverse stakeholders of this community will require the best possible technology and practices the software engineering community can provide.

ICSE 99 provides a number of linked forums for presenting and discussing the most promising approaches for meeting these challenges. The forums include the main conference May 19-21, and associated special-topic workshops, symposia, and tutorials May 16-18 and May 22, 1999. The ICSE 99 main conference will include refereed technical papers, invited industry presentations, panels, exhibits, and leading keynote speakers. Featured keynote speakers will include Dr. Alan Kay, Vice President and Disney Fellow, Walt Disney Imagineering; and Dr. William Wulf, the first software engineer to serve as President of the U.S. National Academy of Engineering.

May is a glorious time in Los Angeles. The average noon temperature is 72° F. The area's beaches, mountains, islands, theme parks, museums, theaters, and restaurants are not yet crowded by summer tourism. The Conference will be arranging tours to some of these attractions for attendees.

The Los Angeles Airport Marriott Hotel has a pleasant and relaxing semitropical atmosphere, yet is just a free half-mile shuttle ride from the Los Angeles International Airport. Room rates for attendees will be an attractive \$119 per night.

**General Chair:**  
Prof. Barry Boehm  
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**Industry Presentations Chair:**  
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UK

The conference will be organized around four main subthemes:

- Quality and Service to People.
- Product Line Architecture and Componentry.
- Integrating Process and Product Engineering.
- Advanced Applications.

The deadline for submitting refereed technical papers, panel proposals, and tutorial proposals will be September 4, 1998. Besides research papers and experience reports, the Program Committee encourages well-analyzed case-studies of experiences and lessons learned in developing significant software systems. The deadline for submitting workshop proposals will be June 5, 1998. If you have questions or suggestions for additional Conference emphases, please contact the Conference organizers.

# ICSE98 Committee Members

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**ICSE98**

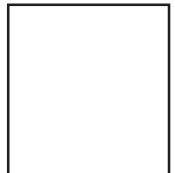
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Information Processing Society of Japan  
Japan Society of Software Science Technology  
IEEE Computer Society, Technical Committee on Software Engineering  
ACM Special Interest Group on Software Engineering



**In cooperation with**

Ministry of Education, Science, Sports and Culture  
Ministry of Posts and Telecommunications  
City of Kyoto  
National Institute of Standards and Technology



**ICSE98**



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