# 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** | | | |
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| | **T4: Most Influential Paper from ICSE-10** | | | |
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| | **Conference Banquet** | | | |
| **24 Fri.** | **F1: Keynote Presentation, TBD** | | | |
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| | **F3-1:** Project and Workflow Management | **F3-2:** Estimation Technologies | | **F3-3:** Ar |
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# 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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# 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 Krutchen (Rational Software Corporation)

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

Charles 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 the 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

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

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. Uchihira (Toshiba, Japan)

Date: April 20-21, 1998

Contact: N. Uchihira, E-mail: 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 Principles 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

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

http://www.sei.cmu.edu/technology/dynamic_systems/cbs/icsewkshp.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

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

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

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

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

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

Submision 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.

# 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)

# 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 | OGIS Research Institute |
| CSK | OMRON |
| DEC | PFU |
| Fuji-Xerox | Rikei |
| Hewlett Packard | SEKI TECHNOTRON |
| Hitachi | SGI |
| IBM | Sharp |
| NEC | Software Research Associates |
| NTT DATA | Sumitomo Electric Industries |
| NTT Software | Toshiba |

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

# ICSE98 Conference Registration Form

We reccomend using 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,
Soraku-gun, Kyoto 619-02 JAPAN

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## Registration Fee:

Early Registration .... Received on or before  March 16, 1998 <u>JST</u>
Late Registration ..... Received after March 16, 1998 <u>JST</u>

### A) Technical Program

| Member | | Nonmember | | Student | | Fee Paid |
|---|---|---|---|---|---|---|
| Early | Late/On-site | 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 | Late/On-site | Early | Late/On-site | |
| **20,000** yen | 25,000 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 attendee 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 Principles 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

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 | --- | T/S:13,640 | T:21,820 | 5 min.(walk) |
| (URL: http://www.princehotels.co.jp/kyoto-e/index.html) | | | | |
| B-1  Rhiga Royal Hotel Kyoto | S:11,370 | T/S:15,460 | T:18,180 | 35 min.(subway) |
| (URL: http://www.rihga.com/kyoto/index.html) | | | | |
| B-2  New Miyako Hotel | --- | T/S:13,000 | T:17,000 | 30 min.(subway) |
| B-3  Hotel New Hankyu | S:12,000 | T/S:14,000 | T:14,000 | 30 min.(subway) |
| (URL: http://www.o-kini.or.jp/hotel/hnh/kyoto-e/kyoto_1.html) | | | | |
| C-1  Hotel Keihan Kyoto | S:8,640 | --- | --- | 30 min.(subway) |
| C-2  Kyoto Garden | S:7,280 | T/S:10,000 | T:12,730 | 25 min.(subway) |
| (URL: http://www.ampark.co.jp/ghs/ghshijoe.html) | | | | |
| 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

_____   _____   _____      Desired room type:   (  ) Single (  ) Twin room/Single Usage

1st choice    2nd choice    3rd choice      (  ) 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**

# 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.

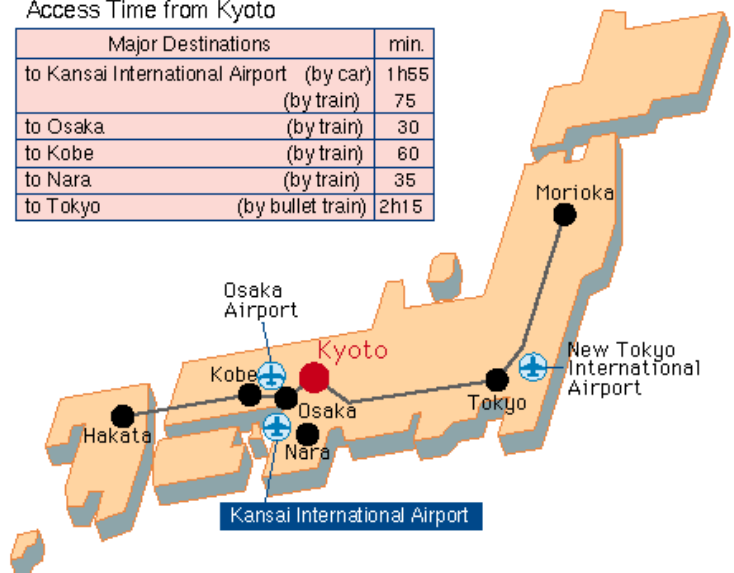## KYOTO INTERNATIONAL CONFERENCE HALL

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 |

Morioka

Osaka Airport

Kyoto

Kobe

New Tokyo International Airport

Hakata

Osaka

Tokyo

Nara

Kansai International Airport

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# ICSE99
*The 21st International Conference on Software Engineering*

**Los Angeles Airport Marriott Hotel, USA**

**May 16-22, 1999**

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  boehm@sunset.usc.edu

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  Have Laptop, Will Travel
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Prof. Jeff Kramer
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  Imperial College
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  UK

### 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.

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.

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.

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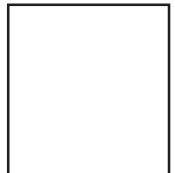Masaki Koyama (NAIST, Japan) koyama@itc.aist-nara.ac.jp

# ICSE98

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Science Council of Japan
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 Techology

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