Welcome to ESEC/FSE 2007

Welcome to the 6th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering. The ESEC/FSE biennial series provides a lively and outstanding forum gathering researchers and practitioners to discuss leading edge results and trends, as well as their impact on industrial applications in the broad area of Software Engineering (SE).

This year's event offers a strong and exciting program, both technical and social, which spans over the whole week. On Monday and Tuesday the main program is preceded by eight focused Workshops on advanced research themes and by the traditional Doctoral Symposium.

The main Conference program opens on Wednesday with a welcome address by the Croatian Minister of Science, Education and Sports, Prof. Dragan Primorac, followed by a vision on the pervasive embedded computers of the near future by the keynote speaker Roberto Siagri, President and CEO of Eurotech. The 2007 ACM SIGSOFT Outstanding Research Award talk is given on Friday by Elaine Weyuker from AT&T Labs-Research who focuses on how to conduct good SE research. Other invited talks include an outline of funding opportunities in the seventh Framework Programme delivered by Paolo Bresciani, Project Officer of the European Commission, and a tribute to Dean Rosenzweig, Professor at University of Zagreb, who passed away in January 2007 (presented by Andre Scedrov from University of Pennsylvania).

The Conference includes thirteen Technical Sessions, with 42 highest quality full Research Papers selected by the ESEC/FSE Program Committee among a record number of 251 submissions. The sessions are run in two parallel tracks. In view of the very positive response to the ESEC/FSE call for contributions, we have also selected some prominent idea submissions which make a very interesting Poster exhibition. Posters are presented during the coffee breaks and by appointment.

Another novelty launched this year is the Widened Software Engineering (WISE) track, explicitly aimed at widening international participation. Out of 23 submissions received from 15 different countries, the WISE PC selected two papers, from Bulgaria and Pakistan, reporting about education in those countries, and the third one, from Jordan, surveying Web Engineering practice.

We did not include this year a separate tutorials track, but organized instead within the main program in plenary session a series of State-of-the-Art (SOTA) presentations provided by leading researchers. The SOTA Chairs propose an interesting blend of three talks, one for each Conference day, on up-to-date SE themes: Steffen Staab from Koblenz-Landau University speaks of the emerging Semantic Web, Marta Kwiatkowska from Oxford University will analyze challenges for probabilistic model checking, and Walt Scacchi from the University of California at Irvine will review free and open source software development (FOSSD).

The social program includes a reception at the historical Sponza Palace in the old city of Dubrovnik, which we will reach by boat, and the conference dinner on the Lido terrace of the Croatia Hotel, with an astonishing view of the sea, Cavtat and Dubrovnik on the horizon. Finally, for the many ESEC/FSE passionate runners, we are proud to announce a primer: the SE.run( ) 5/10K Race along the charming peninsula of Cavtat, with prizes for the winners, and nice T-shirts and caps for all participants.

In expressing our warmest thanks to all organizers who helped us to make ESEC/FSE’07 a reality, we invite you to be an active part of its many exciting events and wish you a pleasant and nice time in Cavtat/Dubrovnik.

Antonia Bertolino  
Program Chair  

Ivica Crnkovic  
General Chair
Conference Organization

General Chair: Ivica Crnković, Mälardalen University, Sweden
WISE Chairs: 
Antonia Bertolino, ISTI-CNR, Italy
Henry Muccini, Università dell’Aquila, Italy
Doctoral Symposium Chair: Carlo Ghezzi, Politecnico di Milano, Italy
Workshops Chairs:
Matthew Dwyer, University of Nebraska, Lincoln, USA
Amy Murphy, FBK-IRST, Italy and University of Lugano, Switzerland
Publicity Chair: Stefan Biffl, Vienna University of Technology, Austria
Local Chair: Ivana Podnar Žarko, University of Zagreb, Croatia

Program Chair: Antonia Bertolino, ISTI-CNR, Italy
State-of-the-Art Presentations Chairs:
Mehdi Jazayeri, University of Lugano, Switzerland and Vienna University of Technology, Austria
David Rosenblum, University College London, U.K.
Posters Chair: Eda Marchetti, ISTI-CNR, Italy
Web Chairs:
Damir Isovčić, Mälardalen University, Sweden
Hüseyin Aysan, Mälardalen University, Sweden
Supporting Staff:
Harriet Ekwall, Mälardalen University, Sweden
Srećko Krile, University of Dubrovnik, Croatia
Daniela Mulas, ISTI-CNR, Italy
Alberto Ribolini, ISTI-CNR, Italy
Marija Šebalj, Hotel Croatia, Cavtat, Croatia
Monica Wasell, Mälardalen University, Sweden

ESEC/FSE Program Committee
Gerardo Canfora, University of Sannio, Italy
Shing-Chi Cheung, Hong Kong University, Hong Kong
Lori Clarke, University of Massachusetts, USA
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Laurie Dillon, Michigan State University, USA
Sebastian Elbaum, University of Nebraska, USA
Michael Ernst, MIT, USA
Jacky Estublier, Grenoble University, France
Harald Gall, University of Zurich, Switzerland
Constance Heitmeyer, Naval Research Lab, USA
James Herbsleb, Carnegie Mellon University, USA
Paola Inverardi, Università dell’Aquila, Italy
Ignac Lovrek, University of Zagreb, Croatia
Cecilia Mascolo, University College London, U.K.

WISE Program Committee
Judith Bishop, University of Pretoria, South Africa
Alan Hartman, IBM Research, Israel
Zhiming Liu, United Nations University, Macao
Ignac Lovrek, University of Zagreb, Croatia
Mary Lou Soffa, University of Virginia, USA

R Venkatesh, TATA Consultancy Services, India
Marlon Vieira, Siemens Corporate Research, USA
Dany Yankelevich, Pragma Consultores, Argentina
Jian Zhang, Chinese Academy of Sciences, China
Invited Presentations

**Keynote talk: Roberto Siagri**
President and CEO, Eurotech Spa

**Pervasive Computers and the GRID: the Birth of a Computational Exoskeleton for Augmented Reality**
Wednesday, Sept. 5, 9:30

**Abstract:** In the near future, the "computer" as we know it will disappear. It will be hidden into everything around us and will improve our sensorial and perceptive abilities, providing us with an "augmented" reality. Pervasive computing (also known as "ubiquitous computing") is about distributed computing devices scattered all over the physical world, such as wearable computers, devices embedded in everyday objects and sensors monitoring the environment. According to this vision, pervasive computing is about both the devices and the infrastructures (communication channels and de-centralized High Performance Computers) needed to support pervasive computing applications (i.e.: the pervasive GRID). In the near future the "pervasive GRID" concept, what I call the "computational exoskeleton", will be extended to many human activities and will represent an ideal starting point for the development of a future class of applications and services.

**Biography:** Roberto Siagri is President and CEO of Eurotech spa (www.eurotech.com). In his role, he is responsible for strategic planning and for identification of new business opportunities. He has spent more than 20 years in the IT sector and has received the many recognitions for his activity: the last one in November 2006, the Italian Ernst&Young "Entrepreneur of the Year 2006" award for the "Finance" category.

**The 2007 ACM SIGSOFT Outstanding Research Award Keynote:**
Elaine J Weyuker
AT&T Labs – Research

**Software Engineering Research - From Cradle to Grave**
Friday, Sept. 7, 9:30

**Abstract:** This talk will focus on doing software engineering research from the theoretical problem inception, through algorithm definition, small proof-of-concept studies, large empirical studies, and finally tool building to automate the process and make it accessible to practitioners. This style of cradle to grave research will be illustrated by describing five years of research we have been performing to accurately predict the location of faults in the next release of large industrial software systems. We will present our research results and describe our expectations for the use of our models in large-scale software production.

**Biography:** Elaine Weyuker is an AT&T Fellow doing software engineering research at AT&T Labs. Prior to moving to AT&T she was a Professor of Computer Science at NYU's Courant Institute of Mathematical Sciences. Elaine is the recipient of the 2007 ACM/SIGSOFT Outstanding Research Award. She is also a member of the National Academy of Engineering, an IEEE Fellow, and an ACM Fellow and has received IEEE’s Harlan Mills Award for outstanding software engineering research, Rutgers University 50th Anniversary Outstanding Alumni Award, and the AT&T Chairman's Diversity Award as well has having been named a Woman of Achievement by the YWCA. She is the chair of ACM's Committee on Women in Computing (ACM-W) and a member of the Coalition to Diversify Computing Executive Committee.

**In-memory talk: Andre Scedrov**
University of Pennsylvania

**The Work of Dean Rosenzweig: A Tribute to a Scientist and an Innovator**
Friday, Sept. 7, 15:00

**Abstract:** Dean Rosenzweig, who passed away in January 2007, was a distinguished mathematician and computer scientist. A Professor at the University of Zagreb and leader of research groups in theoretical computer science and in logic and foundations of mathematics. He made significant contributions to logic, computer security, and foundations of software engineering. Professor Rosenzweig was also heavily involved in building up the information technology used in the Zagreb Stock Exchange. In this talk we highlight
Professor Rosenzweig's contributions to modelling, analysis, and testing of network security protocols. The Cryptographic Abstract Machine is an executional model of cryptographic actions, independent of the concrete cryptographic procedures employed and independent of the abstraction level of the underlying model of cryptography. This is motivated both by a theoretical purpose of relating the dynamics of protocol executions at different levels of abstraction and by a practical purpose of enabling automatic generation and testing of provably correct code implementing protocol roles from high level specifications. We discuss how the abstract Dolev-Yao intruder model may be represented in the general-purpose model-based testing tool SpecExplorer, which can then be used for the testing of cryptographic protocols.

**Biography:** Andre Scedrov is a Professor of Mathematics and Computer and Information Science at the University of Pennsylvania. His contributions are in information assurance, logic, and programming language analysis. He has written over 70 research articles and several books. Professor Scedrov currently serves on the editorial boards of the Journal of Computer Security, on the advisory board of the IEEE Symposium on Logic in Computer Science, and on the program committees of the IEEE Computer Security Foundations Symposium, the Information Security Conference, and recently the ACM Conference on Computer and Communications Security. He leads two recent collaborative projects in diffuse computing, which include several faculty and a number of students from Penn, Stanford, Cornell, and Yale.

**EU Presentation:** Paolo Bresciani
European Commission, Unit D3: Software & Service Architectures and Infrastructures
ICT in FP7 – Next Opportunities
Thursday, Sept. 6, 15:00

**Abstract:** In this talk I will briefly introduce the role of the ICT theme in the Seventh Research Framework Programme recently started by the European Commission, with some details on the area of Services and Software Engineering. An overview on the next opportunities for ICT in context of the FP7 will also be presented.

**Biography:** Paolo Bresciani is a Project "Officer in the Software & Service Architectures and Infrastructures" unit of the Directorate General "Information Society" of the European Commission. As part of his tasks, he monitors FP6 projects in the field of Software and Services Engineering and in the field of Complex Systems. As well, he is contributing to the evaluation process of the recently launched 7th Framework Programme. Previously, he also served the Italian Ministry of Foreign Affairs as a Scientific National Expert at the office for the Bilateral Cultural and Scientific Cooperation. As a research scientist, he has been working for more than 15 years at the ITC-irst (now Fondazione Bruno Kessler - irsst). Paolo Bresciani's research interests lie in several areas of ICT, including, among the rest, Knowledge Representation, Conceptual Modelling, Requirements Engineering and Software Engineering. He has been a member of several program committees of international conferences and workshops, reviewers of international journals, and one of the organisers of the Agent Oriented Information Systems (AOIS) and of the Agent Oriented Methodologies (AOM) international workshops, held, in various editions, at the ER, AAMAS, CAiSE and OOPSLA conferences. He co-authored about 50 published scientific papers and co-edited four books in the field of Agent Oriented Information Systems. He is a member of the ACM.

**State-of-the-Art Presentations**

**Steffen Staab**
University of Koblenz-Landau
On Marrying Ontology and Software Technology
Wednesday, Sept. 5, 14:00

**Abstract:** In software engineering the use of models for purposes such as software design, configuration or validation constitutes a common practice and is of core concern to the field. Ontologies constitute domain models formalized using expressive logic languages for class definitions and rules. Hence, when seen from an abstract point of view, the two technologies seem closely related. However, in the state-of-the-art research and practice the two technologies are just beginning to converge and the relationship between the two is still under exploration. In this talk, we give an outline of current ontologies. Then, we describe some avenues of research for joining ontology and software technology into a happy
marriage, i.e. (i), by increasing the expressiveness of software design models through ontologies, (ii), by improving accessibility and maintainability of software configurations, and, (iii), by validating software design using ontology reasoning.

**Biography:** Steffen Staab is professor for databases and information systems at the University of Koblenz-Landau, leading the research group on Information Systems and Semantic Web (ISWeb). His interests lie in researching core technology for ontologies and semantic web as well as in applied research for exploiting these technologies for knowledge management, multimedia and software technology. He has participated in numerous national, European and intercontinental research projects on these different subjects and his research has led to over 100 refereed contributions in journals and conferences. Dr. Staab held positions as researcher, project leader and lecturer at the University of Freiburg, the University of Stuttgart/Fraunhofer Institute IAO, and the University of Karlsruhe and he is a co-founder of Ontoprise GmbH.

**Marta Kwiatkowska**
**Oxford University**
**Quantitative Verification: Models, Techniques and Tools**
**Thursday, Sept. 6, 14:00**

**Abstract:** Model-driven engineering has been recognised as a promising approach to tackle the escalating complexity of software systems. The changing nature of software systems - mobile, adaptive, context-aware - places increasing emphasis on the need to consider critical resources and their usage throughout execution. Therefore, quantitative verification techniques to establish properties such as "the chance of battery power dropping below minimum is less than 0.01" and "the worst-case time to receive a response from a sensor is 5ms" are called for. This talk will give a brief overview of state-of-the-art and future challenges of probabilistic model checking, a formal verification technique for quantitative verification of systems that exhibit probabilistic behaviour. We will describe the modelling approach, focusing on software features such as real-time, randomisation, resources and concurrency, and illustrate the usefulness of the methodology with examples of real-world systems that have been analysed using the PRISM model checker.

**Biography:** Marta Kwiatkowska will shortly be taking up Professorship of Computing Systems in the Computing Laboratory, University of Oxford, in association with Fellowship of Trinity College. She is currently Professor at the University of Birmingham and held visiting positions at Imperial College, CWI and ENS Cachan. Kwiatkowska's research is concerned with modelling and quantitative verification and analysis methods for complex systems. Her work spans the whole spectrum, from theory, through algorithms to software implementation and applications. The main focus of Kwiatkowska's research over the past several years has been on modelling and verification of probabilistic systems, resulting in the development of the PRISM model checker.

**Walt Scacchi**
**University of California, Irvine**
**Free/Open Source Software Development: Recent Research Results and Emerging Opportunities**
**Friday, Sept. 7, 14:00**

**Abstract:** The focus of this presentation is to review what is known about free and open source software development (FOSSD) work practices, development processes, project and community dynamics, and other socio-technical relationships. It focuses on exploring how FOSS is developed and evolved based on an extensive review of a set of empirical studies of FOSSD projects that articulate different levels of analysis. These characterize what has been analyzed in FOSSD studies across levels that examine (i) why individuals participate; (ii) resources and capabilities supporting development activities; (iii) how cooperation, coordination, and control are realized in projects; (iv) alliance formation and inter-project social networking; (v) FOSS as a multi-project software ecosystem, and (vi) FOSS as a social movement.

**Biography:** Walt Scacchi is senior research scientist and research faculty member in the Institute for Software Research, and the co-director of the Computer Game Culture and Technology Laboratory, both at UC Irvine. His research interests include open source software development, knowledge-based systems for modeling and simulating complex engineering and business processes, computer game culture and technology, developing decentralized heterogeneous information systems, software acquisition and electronic commerce/business, and organizational analysis of system development projects. Dr. Scacchi has more than 150 publications. He has directed 45 externally funded research projects, has had numerous consulting and visiting scientist positions with more than 25 firms or institutes, including three start-up ventures.
Main Conference Program

**WEDNESDAY SEPTEMBER 5**

09:00  **Opening Ceremony** *(Ragusa)*  
*Conference Overview by Chairs:* Ivica Crnković and Antonia Bertolino

*Welcome Address by Croatian Minister of Science, Education and Sport:* Dragan Primorac

09:30  **Opening Keynote** *(Ragusa)*  
*Session chair:* Antonia Bertolino

*Pervasive Computers and the GRID: the Birth of a Computational Exoskeleton for Augmented Reality*  
Roberto Siagri

10:30  **BREAK / POSTER PRESENTATIONS**

11:00  **SESSION I: Mining Specifications and Structure** *(Bobara)*  
*Session chair:* Wilhelm Schäfer

*Mining Specifications of Malicious Behavior*  
Mihai Christodorescu, Christopher Kruegel, Somesh Jha

*Recommending Random Walks*  
Zachary M Saul, Vladimir Filkov, Premkumar Devanbu, Christian Bird

*Mining API Patterns as Partial Orders from Source Code: From Usage Scenarios to Specifications*  
Mithun Acharya, Tao Xie, Jian Pei, Jun Xu

11:00  **SESSION II: Fault Detection** *(Orlando)*  
*Session chair:* Alessandro Orso

*Detecting Object Usage Anomalies, Christian Lindig*  
Andrzej Wasylkowski, Andreas Zeller

*Which Warnings Should I Fix First?*  
Sunghun Kim, Michael D. Ernst

*Context-Based Detection of Clone-Related Bugs*  
Lingxiao Jiang, Zhendong Su, Edwin Chiu

12:30  **LUNCH**

14:00  **State-of-the-Art Presentation** *(Ragusa)*  
*SOTA chairs:* Mehdi Jazayeri, David Rosenblum

*On Marrying Ontological and Metamodeling Technical Spaces*  
Steffen Staab

15:00  **BREAK / POSTER PRESENTATIONS**

15:30  **SESSION III: Code Analysis** *(Bobara)*  
*Session chair:* Lori A. Clarke

*Programming Asynchronous Layers with CLARITY*  
Prakash Chandrasekaran, Christopher L. Conway, Joseph Joy, Sriram K. Rajamani

*Object and Reference Immutability using Java Generics*  
Yoav Zibin, Alex Potanin, Mahmood Ali, Shay Artzi, Adam Kiezun, Michael D. Ernst

*Efficient Checkpointing of Java Software Using Context-Sensitive Capture and Replay*  
Guoqing Xu, Atanas Rountev, Yan Tang, Feng Qi

15:30  **SESSION IV: Development Processes and Tools** *(Orlando)*  
*Session chair:* Alexander L. Wolf

*Recovering and Using Use-Case-Diagram-To-Source-Code Traceability Links*  
Mark Grechanik, Kathryn S McKinley, Dewayne E Perry

*Bi-Objective Release Planning for Evolving Software Systems*  
Moshood Omolade Saliu, Guenther Ruhe

*An End-To-End Industrial Software Traceability Tool*  
Hazeline Asuncion, Frederic Francois, Richard N. Taylor

*Globally Distributed Software Development Project Performance: An Empirical Analysis*  
Narayan Ramasubbu, Rajesh Krishna Balan

**THURSDAY SEPTEMBER 6**

09:00  **SESSION V: Test Generation** *(Bobara)*  
*Session chair:* Alan Hartman

*Parallel Test Generation and Execution with Korat*  
Sasa Misailovic, Aleksandar Milicevic, Nemanja Petrovic, Sarfraz Khurshid, Darko Marinov

*Improving Test Case Generation for Web Applications Using Automated Interface Discovery*  
William Halfond, Alessandro Orso

*The Impact of Input Domain Reduction on Search-Based Test Data Generation*  
Mark Harman, Youssef Hassoun, Kiran Lakhota, Phil McMinn, Joachim Wegener
Plan of the Venue – Croatia Hotel

A – Salon Orlando
B – Congress hall Ragusa
C – Salon Šipun
D – Salon Bobara
E – Tihi salon (Quiet salon)
F – Salon 5
G – Salon 6
H – Salon 7
I – Hotel Reception
J – Restaurant Cavtat
K – Lido bar terrace
L – Restaurant & beach Cavtat
M – Conference hall Libertas

1 – ESEC/FSE registration desk
2 – ESEC/FSE office

Ground Floor

Floor V

1. Hotel Reception
2. Tihi salon (Quiet Salons)
3. Staircase
4. Terrace
5. ESEC/FSE registration desk
6. Poster session
7. Main Entrance
8. Piano bar
9. Salon 7
10. Salon Šipun
11. Salon Bobara
12. Salon 5
13. Salon 6
14. Restaurant & beach Cavtat
15. Restaurant Cavtat
16. Lido bar terrace
17. Conference hall Libertas

Sea
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<th>Wednesday, September 5</th>
<th>Thursday, September 6</th>
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<tr>
<td>07:00</td>
<td>SE.run (): 5K/10K Race</td>
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<td>Congress Hall Ragusa</td>
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<td>08:00</td>
<td>Congress Hall Ragusa</td>
<td>Salon Bobara</td>
<td>Salon Orlando</td>
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<td>09:00</td>
<td>Open</td>
<td>Session V: Test Generation</td>
<td>Session VI: Refactoring Automation</td>
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<td>09:30</td>
<td>Keynote: Roberto Siagri</td>
<td>Keynote: Elaine J Weyuker</td>
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<td>BREAK/Poster Session</td>
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<td>11:00</td>
<td>Session I: Mining Specifications and Structure</td>
<td>Session VII: Scaling-up Static Analysis</td>
<td>Session X: Verification Techniques</td>
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<td>12:30</td>
<td>LUNCH</td>
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<td>Session XI: Developer-centric Studies</td>
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<td>14:00</td>
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<td>15:00</td>
<td>State-of-the-Art: Stefan Staab</td>
<td>State-of-the-Art: Marta Kwiatkowska</td>
<td>State-of-the-Art: Walt Scacchi</td>
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<td>15:30</td>
<td>BREAK/Poster Session</td>
<td>EU-FP7: Paolo Bresciani</td>
<td>In-Memory Talk: Andre Scedrov</td>
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<td>16:00</td>
<td>Salon Bobara</td>
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<td>16:30</td>
<td>Session III: Code Analysis</td>
<td>Session IV: Development Processes and Tools</td>
<td>Salon Orlando</td>
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<td>17:00</td>
<td>Session VIII: Service-Oriented and Mobile Computing</td>
<td>Session VII: Service-Oriented and Mobile Computing</td>
<td>Session XIII: Empirical System Characterization</td>
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<td>17:30</td>
<td>Visit to Dubrovnik Reception</td>
<td>Terrace Lido</td>
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<td>Quiet Salon</td>
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09:00 SESSION VI: Refactoring Automation (Orlando)
Session Chair: Prem Devanbu

Determining Detailed Structural Correspondence for Generalization Tasks
- Rylan R. Cottrell, Joseph J. C. Chang, Robert J. Walker, Joerg Denzinger

Beyond Refactoring: A Framework for Modular Maintenance of Crosscutting Design Idioms
- Macneil Shonle, William G. Griswold, Sorin Lerner

Automated Testing of Refactoring Engines
- Brett Daniel, Danny Dig, Kely Garcia, Darko Marinov

10:30 BREAK / POSTER PRESENTATIONS

11.00 SESSION VII: Scaling-up Static Analysis (Bobara)
Session chair: Michael D. Ernst

Finding Bugs Efficiently with a SAT Solver
- Julian Dolby, Mandana Vaziri, Frank Tip

RELAY: Static Race Detection on Millions of Lines of Code
- Jan Wen Young, Ranjit Jhala, Sorin Lerner

Detecting Large Number of Infeasible Paths through Recognizing their Patterns
- Minh Ngoc Ngo, Hee Beng Kuan Tan

11:30 WIDENED SOFTWARE ENGINEERING (Orlando)
WISE chairs: Antonia Bertolino, Henry Muccini

CANCELED: Practicum in Software Project Management – An Endeavor to Effective and Pragmatic Software Project Management Education
- Manzil e Maqsood, Talha Javed

A Survey of Web Engineering Practice in Small Jordanian Web Development Firms
- Asim Elsheikh, Haroon Tarawneh

Building a Research University Ecosystem: the Case of Software Engineering Education at Sofia University
- Roumen Nikolov, Sylvia Ilieva

12:30 LUNCH

14:00 State-of-the-Art Presentation (Ragusa)
SOTA chairs: Mehdi Jazayeri, David Rosenblum

Quantitative Verification: Models, Techniques and Tools
- Marta Kwiatkowska

15:00 EC Presentation (Ragusa)
Session chair: Ivica Crnkovic

ICT in FP7 - Next Opportunities
- Paolo Brescia

15:30 BREAK / POSTER PRESENTATIONS

16.00 SESSION VIII: Service-Oriented and Mobile Computing (Bobara)
Session chair: Paola Inverardi

Model Checking Service Compositions under Resource Constraints
- Howard Foster, Wolfgang Emmerich, Jeff Kramer, Jeff Magee, David Rosenblum, Sebastian Uchitel

Detection and Resolution of Atomicity Violation in Service Composition
- Chunyang Ye, S.c. Cheung, W.k. Chan, Chang Xu

Automatic Consistency Assessment for Query Results in Dynamic Environments
- Jamie Payton, Christine Julien, Gruia-Catalin Roman

From Representations to Computations: The Evolution of Web Architectures
- Justin Erenkrantz, Michael Gorlick, Girish Suryanarayana, Richard Taylor

16:00 SESSION IX: Modelling Approaches (Orlando)
Session Chair: Mary Lou Soffa

Reconciling Software Configuration Management and Product Data Management
- Jacky Estublier, German Vega

Symbolic Message Sequence Charts
- Abhik Roychoudhury, Ankit Goel, Bikram Sen Gupta

Model Transformation in the Large
- Felix Klar, Alexander Konigs, Andy Schurr

Difference Computation of Large Models
- Christoph Treude, Stefan Berlik, Sven Wenzel, Udo Kelter

FRIDAY SEPTEMBER 7

09:00 Announcements

ACM SIGSOFT Distinguished Paper Awards

Invitation to next ESEC and FSE events
09:30 **2007 ACM SIGSOFT Outstanding Research Award Keynote** (Ragusa)
*ACM SIGSOFT chair:* William G. Griswold

*Software Engineering Research - From Cradle to Grave*
Elaine J Weyuker

10:30 **BREAK**

11:00 **SESSION X: Verification Techniques** (Bobara)
*Session chair:* Laura K. Dillon

*The Symmetry of the Past and of the Future: Bii-infinite Time in the Verification of Temporal Properties*
Matteo Pradella, Angelo Morzenti, Pierluigi San Pietro

*State Space Exploration using Feedback Constraint Generation and Monte-Carlo Sampling*
Sriram Sankaranarayanan, Richard M. Chang, Guofei Jiang, Franjo Ivancic

*Automated Size Analysis for OCL*
Fang Yu, Tevfik Bultan, Erik Peterson

11:00 **SESSION XI: Developer-centric Studies** (Orlando)
*Session chair:* Stefan Biffl

*Does a Programmer's Activity Indicate Knowledge of Code?*
Thomas Fritz, Gail C. Murphy, Emily Hill

*A Socio-Technical Framework for Supporting Programmers*
Yunwen Ye, Yasuhiro Yamamoto, Kumiyo Nakakoji

*Program comprehension as fact finding*
Thomas D. LaToza, David Garlan, James D. Herbsleb, Brad A. Myers

12:30 **LUNCH**

14:00 **State-of-the-Art Presentation** (Ragusa)
*SOTA chairs:* Mehdi Jazayeri, David Rosenblum

*Free/Open Source Software Development: Recent Research Results and Emerging Opportunities*
Walt Scacchi

15:00 **In-Memory Talk** (Ragusa)
*Session chair:* Ignac Lovrek

*The Work of Dean Rosenzweig: A Tribute to a Scientist and an Innovator*
Andre Sechedov

15:30 **BREAK**

16:00 **SESSION XII: Empirical System Characterization** (Bobara)
*Session chair:* Kumiyo Nakakoji

*A Framework for Characterization and Analysis of Software System Scalability*
Leticia Duboc, David Rosenblum, Tony Wicks

*An Empirical Study on the Evolution of Design Patterns*
Lerina Aversano, Gerardo Canfora, Luigi Cerulo, Concettina Del Grosso, Massimiliano Di Penta

*Measuring Empirical Computational Complexity*
Simon Goldsmith, Alex Aiken, Daniel S. Wilkerson

16:00 **SESSION XIII: Unit and System Testing** (Orlando)
*Session chair:* Raffaela Mirandola

*Training on Errors Experiment to Detect Fault-Prone Software Modules by Spam Filter*
Osamu Mizuno, Tohru Kikuno

*CTG: A Connectivity Trace Generator for Testing the Performance of Opportunistic Mobile Systems*
Roberta Calegari, Mirco Musolesi, Franco Raimondi, Cecilia Mascolo

*Contract Driven Development = Test Driven Development - Writing Test Cases*
Andreas Leitner, Illica Ciupa, Manuel Oriol, Bertrand Meyer, Arno Fiva

17:30 **FAREWELL**

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**Posters Exhibition**

September 5,6 (Tihi salon – the Quiet Salon)

Posters are exhibited in a large open area close to the space where coffee will be served during the breaks. Poster authors will present their work during the coffee breaks of the main conference (10:30 – 11:00, Sept 5 and Sept 6 / 15:00-15:30, Sept 5 / 15:30 - 16:00, Sept 6) and also during conference sessions but only by appointment. Appointments with the poster authors can be reserved by placing notes on the “Appointment reservations” wall poster positioned in the poster exhibition room.

**Posters Grouped by Topic:**

**Management and Reengineering**
- *Exploring Motivational Differences between Software Developers and Project Managers*
  Helen Sharp, Tracy Hall, Nathan Baddoo, Sarah Beecham
Product Integration Improvement Based on Analysis of Build Statistics
Stig Larsson, Petri Myllyperiko, Fredrik Ekdahl

A Case Study in Assessing and Improving Capacity Using an Anatomy of Good Practice
Mikael Patel, Andreas Borg, Kristian Sandahl

Efficient Token Based Clone Detection with Flexible Tokenization
Hamid Abdul Basit, Simon Pugliesi, William F. Smyth, Andrei Turpin, Stan Jarzabek

Model Design and Transformation
A Segment-based Approach for Reconcilable Model Transformation
Xin Zhou, Ying Liu, Jun Zhu

A Behavioural Model for Product Families
Alessandro Fantechi, Stefania Gnesi

A Specification-based Approach to Testing Software Product Lines
Engin Uzuncaova, Daniel Garcia, Sarfraz Khurshid, Don Batory

Tushar Kumar, Jaswanth Sreeram, Romain Cledat, Santosh Pande

Coverage Criteria
A Study of Interleaving Coverage Criteria
Shan Lu, Weihang Jiang, Yuanyuan Zhou

An Iterative, Multi-Level, and Scalable Approach to Comparing Execution Traces

State Coverage: A Structural Test Adequacy Criterion for Behavior Checking
Ken Koster, David Kao

Verification and Validation
Quantifying the Effectiveness of Testing via Efficient Residual Path Profiling
Trishul Chilimbi, Aditya V. Nori, Kapil Vaswani

Differential Testing - A New Approach to Change Detection
Robert B Evans, Alberto Savoia

Directed Test Generation Using Symbolic Grammars
Rupak Majumdar, Ru-Gang Xu

Towards Incremental Adaptive Covering Arrays
Sandro Fouché, Myra B. Cohen, Adam Porter

Predictive Testing: Amplifying the Effectiveness of Software Testing
Pallavi Joshi, Koushik Sen, Mark Shlimovich

Using Groupings of Static Analysis Alerts to Identify Files Likely to Contain Field Failures
Mark S. Sherriff, Sarah Smith Heckman, J. Michael Lake, Laurie A. Williams

On Impact-Oriented Automatic Resolution of Pervasive Context Inconsistency
Chang Xu, S.C. Cheung, W.K Chan, Chunyang Ye

Doctoral Symposium
September 4 09.00 (Congress Hall Ragusa)

DS Committee
Carlo Ghezzi Politecnico di Milano, Italy (chair)
Lee Osterweil University of Massachusetts, Amherst, USA
Richard A. Kemmerer UCSB, USA
Jeff Kramer Imperial College London, UK
Axel van Lamsweerde UCL, Belgium

Visualising Exemplary Program Values
Marcin Stefaniak

An Analysis of Developers’ Tasks using Low-Level, Automatically Collected Data
Irina Coman

Composition and Tradeoff of Non-Functional Attributes in Software Systems: Research Directions
Pasqualina Potena

Model Driven Test-Case Construction
Stefan Baerisch

Slede: Lightweight Verification of Sensor Network Security Protocol Implementations
Youssef Hanna

Analysis of A Deployed Software
Madeline Diep

Component Airbag: a novel approach to develop dependable component-based applications
Roberto Pietrantuono

A Model-Driven Approach to generating User Interfaces
Sevan Kavaldjian

Mining Temporal Rules from Program Execution Traces (Poster)
David Lo

On the Modularity Assessment of Software Architectures: A Concern-Oriented Approach (Poster)
Claudio Sant’Anna

Towards Integration of Process Models and Methods (Poster)
Edward Fischer

Traceability Management meets Information Retrieval Methods: Strengths and Limitations (Poster)
Rocco Oliveto
Workshop Program Overview

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<th>Monday, September 3</th>
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<td>W1: SYANCO</td>
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<td>W4: IW-SOSWE</td>
<td>W8: DOSTA</td>
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**W1: SYANCO (Salon Šipun)**

*International Workshop on Synthesis and Analysis of Component Connectors*

Organizers: Farhad Arbab, CWI, Amsterdam, The Netherlands
            Christel Baier, Universitaet Dresden, Germany

Dates: September 3 – 4
WWW: [http://wwwtcs.inf.tu-dresden.de/ALGI/syancoworkshop/](http://wwwtcs.inf.tu-dresden.de/ALGI/syancoworkshop/)

**W2: SAVCBS (Salon 6)**

*6th Workshop on Specification and Verification of Component-Based Systems*

Organizers: Dimitra Giannakopoulou, RIACS/NASA, USA
            Gary T. Leavens, Iowa State University, USA
            Michael Barnett, Microsoft Research, USA
            Jonathan Aldrich, Carnegie Mellon University, USA

Dates: September 3 – 4
WWW: [http://www.cs.iastate.edu/SAVCBS/](http://www.cs.iastate.edu/SAVCBS/)

**W3: IWPSE (Bobara)**

*9th International Workshop on Principles of Software Evolution*

Organizers: Massimiliano Di Penta, RCOST -- Univ. of Sannio, Italy
            Michele Lanza, University of Lugano, Switzerland

Dates: September 3 – 4

**W4: IW-SOSWE (Salon 5)**

*2nd International Workshop on Service Oriented Software Engineering*

Organizers: Elisabetta Di Nitto, Politecnico di Milano, Italy
            Andrea Zisman, City University London, U.K.
            Andrea Polini, ISTI-CNR, Italy

Dates: September 3
WWW: [http://www.selab.isti.cnr.it/IW-SOSWE07/](http://www.selab.isti.cnr.it/IW-SOSWE07/)
Committee Meetings

ICSE Steering Committee Meeting
Tuesday, Sept 3, 18:30, Konavoski Dvori, Transport from Croatia Hotel

SIGSOFT Executive Committee Meeting
Wednesday, Sept 4, 12:30-14:00, Room Libertas
Social Events

WEDNESDAY SEPTEMBER 5

18:30 - 23:00  Visit to the old city of Dubrovnik and Reception

The event includes a boat trip from Cavtat harbor to the old city of Dubrovnik and the reception with a light dinner at Sponza palace. There will be time for promenade through the old town. Travel back is organized by buses.

Dubrovnik is a historic city on the Adriatic coast in the far south of Croatia. The modern name of the city is derived from the Slavic word "dubrava" ("forest" in English). It is one of the most prominent tourist resorts in the world, nicknamed "Pearl of the Adriatic". The prosperity of the city of Dubrovnik has always been based on maritime trade. In the Middle Ages, as the Republic of Dubrovnik, it became the only eastern Adriatic city-state to rival Venice. Supported by its wealth and skilled diplomacy, the city achieved a remarkable level of development, particularly during the 15th and 16th centuries. Dubrovnik was one of the centers of the development of the Croatian language and literature, home to many notable poets, playwrights, painters, mathematicians, physicists and other scholars.

THURSDAY SEPTEMBER 6

07:00 - 08:00  SE.run( ): ESEC/FSE 2007 5K/10K Race

First time at the ESEC/FSE conference: a race along the peninsula of Cavtat!

The event, called SE.run( ), takes in input 5K (5 km) and 10K (10 km) values for the courageous ones, but all ESEC/FSE participants are invited to SE.run(2k), a 2 km walk, or SE.run(0) to cheer the runners. The race will take place on the beach in front of the hotel and along the beautiful peninsula of Cavtat, in the early morning when there is an ideal temperature for running. You have a chance to win a nice present, and just by participating to get a T-shirt and a SE.Runner cap.

20:00 - 23:00  ESEC/FSE Banquet

The conference dinner will take place on the terrace Lido of the Croatia Hotel.
FRIDAY SEPTEMBER 7

18:00-19:00 Farewell - refreshments

Directly after the official Farewell session, an unofficial farewell meeting will take place at Tihi salon (the Quiet Salon). Refreshments will be served while you can continue to chat with your friends, and discuss the ending conference and future events.

Spouse programs and other events

There are plenty of local events such as exploration of the old city of Dubrovnik, e.g., the city walls, the 13th century pharmacy, or various monasteries and palaces. Another possibility is to stay in the hotel and visit one of the two nearby beaches or the hotel swimming pool, exercise your muscles in the fitness center, play tennis, or relax in the Wellness & Spa center. Alternatively you can take a trip to nearby islands, in particular the national park on the island of Mljet.

Conference Facilities

Coffee breaks
Coffee breaks will be held on the terrace of the Quiet Salon, 5th floor.

Lunch
Lunch will be served in Restaurant Cavtat.

Internet Access
Wireless Internet access is provided by the hotel and available (free of charge) for all ESEC/FSE participants.

Computer Room
The hotel has a computer room with Internet access and other facilities. The service is provided at the standard hotel price.

Registration
The registration desk will be open for registration and general information according to the following schedule:

<table>
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<tr>
<th>Day</th>
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<tr>
<td>Sunday, Sept 2</td>
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<td>University of Zagreb Faculty of Electrical Engineering and Computing</td>
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