

Editorial

Introduction to the Special Issue of the 13th European Conference on Software Maintenance and Reengineering (CSMR 2009)



Welcome to the special issue of the *13th European Conference on Software Maintenance and Reengineering (CSMR 2009)*, which was held from 24–27 March, 2009 in Kaiserslautern, Germany.

As the premier European forum for discussing theory and practice of maintenance, reengineering, and evolution of software systems, CSMR promotes discussion and interaction among researchers and practitioners regarding the development of maintainable systems as well as the evolution, migration, and reengineering of existing systems. The 2009 edition of CSMR focused on the theme ‘Architecture-Centric Maintenance of Large-Scale Software Systems’. Many software developers and users are facing the maintenance and reengineering challenge today. They cannot escape from maintaining software systems and at the same time, they have to adapt their systems to evolving needs. At CSMR 2009, we observed a high interest in this topic from academia and industry by achieving the all-time CSMR-high on attendance.

The technical program covered a wide range of current research activities in maintenance and reengineering. Furthermore, CSMR 2009 hosted a doctoral symposium, an industrial track, a tool track, and two workshops on hot community topics. And for the first time ever, CSMR 2009 was completed by a special track on research projects in Europe presenting interesting ongoing activities and achievements in our field. As highlights, we were happy to have three invited talks that were given by the well-known, distinguished researchers and representatives from the European Commission:

- Prof. Dr Dr H. C. Dieter Rombach (Fraunhofer IESE, Kaiserslautern, Germany) on ‘Design for Maintenance: Use of Engineering Principles & Product Line Technology’,
- Prof. Dr Tibor Gyimóthy (University of Szeged, Hungary) on ‘To Use or Not to Use? The Metrics to Measure Software Quality (Developers’ View)’,
- Dr Arian Zwegers (European Commission, Brussels, Belgium) on ‘Software Engineering—What’s in it for me?’.

Last but not the least, we proudly presented the Stevens Lecture on Software Development Methods to honor Harry Sneed with the Stevens Award for his outstanding and valuable contributions to Software Maintenance and Reengineering in practice and theory.

At CSMR 2009, papers were submitted from 24 countries covering all inhabited continents except Africa. Out of 70 submitted papers, 22 full papers were selected for presentation at the conference. The authors of six papers—selected on their suitability and quality as indicated by the program committee reviewers—were invited to submit extended versions of their work, which went again



through a rigorous review process involving at least three reviewers. Finally, three papers were selected for publication in this special issue:

- *Cluster-based modularization of processes recovered from Web applications* by Chiara Di Francescomarino, Alessandro Marchetto, and Paolo Tonella. This paper addresses an important activity in the current software evolution. It presents JBPRcovery, a toolset for recovering business processes by dynamically analyzing the execution of applications and clustering relevant tracing elements.
- *Studying Software Evolution of Large Object-oriented Software Systems using an ETGM Algorithm* by Segla Kpodjedo, Filippo Ricca, Philippe Galinier, Giuliano Antoniol, and Yann-Gaël Guéhéneuc.

In this paper, the authors present an error-tolerant graph matching (ETGM) algorithm and apply it to understand the evolution of class diagrams in object-oriented software systems over subsequent source code versions. The capabilities of the algorithm are shown by applications to open-source systems of different sizes.

- *Studying clone evolution using incremental clone detection* by Nils Göde and Rainer Koschke. This paper presents an approach for tracking source code clones of consecutive software versions by applying an incremental clone detection algorithm. The performance of the approach is evaluated on three large software systems. An interesting study on clone evolution is also presented.

Finally, we like to express our gratitude to all authors submitting papers to CSMR 2009. Our special thanks go to the authors of the papers of this special issue for revising and extending their work. We are thankful to the members of the CSMR 2009 organizing committee, the program committee, their additional reviewers, and the reviewers of this special issue for providing valuable reports on the papers. Our thanks also include Mariella Tortorella and Aniello Cimitile—the Editors of the *Journal of Software Maintenance and Evolution (JSME)* for hosting this special issue and their support. Last but not the least, we would like to thank all participants of CSMR 2009 for interesting and fruitful discussions, for exchanging experiences, and for making it a unique event.

We hope you will enjoy reading these papers and gain useful insights into software maintenance and reverse engineering.

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