

Introduction to the RE'06 special issue

Martin Glinz

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The IEEE International Requirements Engineering Conference, which is the premier conference in the field of requirements engineering, has a tradition of publishing the best research papers of the conference in a special issue of the Requirements Engineering Journal. This special issue contains three articles that are extended and enhanced versions of papers presented at RE'06, the 14th IEEE International Requirements Engineering Conference, which was held September 11–15, 2006 in Minneapolis, Minnesota, USA.

RE'06 was a big success, bringing together over 300 researchers, practitioners, students, and educators from 25 countries all over the world, thereby illustrating the growing importance of requirements engineering in software and systems development.

The theme of RE'06 was “understanding the stakeholders’ desires and needs”, thus reflecting the fact that, at its core, requirements engineering is about satisfying the stakeholders. The conference theme also spawned a special issue of IEEE Software on Stakeholders in Requirements Engineering [1], where two articles originate from RE'06 papers.

The papers and discussions at the conference did not focus on a specific “hot topic”. Rather, RE'06 revealed a continued interest in standard requirements engineering topics such as elicitation, goals, analysis, languages, tools, stakeholders, etc., with some increased interest in aspectual requirements, non-functional requirements, and goals. The

complete set of papers can be found in the conference proceedings [2], which are also electronically available from the IEEE Computer Society Digital Library.

We deliberately shaped RE'06 as a conference not purely for academic researchers, but for any person interested in requirements engineering. So the two research paper tracks were complemented by a full-fledged practitioner track. The three keynote talks by Mary Beth Rosson (Pennsylvania State University) on end users who meet their own requirements, Dorothy Graham (Grove Consultants, UK) on testing to improve requirements, and John Mylopoulos (University of Toronto and Università di Trento) on goal-oriented requirements engineering covered both academic and practical issues of requirements engineering. Tutorials and mini-tutorials added an educational component. The aspect of exchanging ideas and discussing issues was fostered by longer presentation slots which permitted more and livelier discussion of presented papers, a birds-of-a-feather session, and workshops held in conjunction with the conference.

From 179 submissions, the RE'06 Program Committee and Program Board had selected 39 papers in five paper categories for presentation at the conference and inclusion in the proceedings. From the accepted research papers, the authors of four papers were invited to submit their work for this special issue. These submissions underwent a standard REJ reviewing process. Members of the RE'06 Program Committee as well as external experts served as reviewers. Three submissions were accepted for publication in this issue, the fourth one has been withdrawn.

The article “Multi-level feature trees: a pragmatic approach to managing highly complex product families” by Mark-Oliver Reiser and Matthias Weber describes an approach for making feature trees manageable for large

M. Glinz (✉)
Department of Informatics, University of Zurich,
Binzmühlestrasse 14, 8050 Zurich, Switzerland
e-mail: glinz@ifi.uzh.ch

and complex product families. They split the feature tree into multiple levels, where a higher level tree serves as a common reference model for one or more lower level trees. A reference model feature tree provides a global common basis for a large product line, which can now be refined and modified in lower level feature trees for modeling smaller, independent product lines within the overall family.

In the second article, “Requirement progression in problem frames: deriving specifications from requirements”, Robert Seater, Daniel Jackson and Rohit Gheyi present a systematic approach for obtaining a specification (of a machine to be implemented) from a requirement (stating constraints on phenomena in the problem domain). The approach incrementally moves the requirement toward the machine by generating domain assumptions in every step. The technique ensures that when the machine satisfies the specification and the domain assumptions are valid, the requirement will hold.

The third article, “Automated classification of non-functional requirements” by Jane Cleland-Huang, Raffaella Settini, Xuchang Zou and Peter Solc, describes a technique for automating the detection and classification of non-functional requirements such as security, performance, and usability requirements. This technique can be used for identifying non-functional requirements in natural language documents such as textual requirements specifications, interview notes, meeting minutes, etc., which

considerably simplifies the task of eliciting and documenting non-functional requirements.

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I hope this special issue will stimulate thoughts and insights in requirements engineering research and also motivate readers to attend the forthcoming IEEE International Requirements Engineering Conferences in Delhi, India (October 15–19, 2007) and Barcelona, Spain (September 8–12, 2008).

Martin Glinz, RE’06 Program Chair

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