Preface to the CIbSE 2016 Special Issue

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This special issue of the CLEI Electronic Journal consists of an invited paper on 25 years of Model-Driven Web Engineering as well as extended and revised versions of the Selected Papers (which correspond to the second and third best paper from each track) presented at the XIX Ibero-American Conference on Software Engineering (CIbSE 2016), which took place in Quito, Ecuador, in April 2016.

With this issue, CLEIej is starting to invite papers authored from leading Latin-American researchers presenting the state-of-the-art in different relevant topics. Indeed in this issue, Gustavo Rossi et al. survey the evolution of Model-Driven Web Engineering (MDWE) in the last 25 years. The authors explain the evolution of modeling and design approaches from the early years (in the 90's), analyzing the forces that drove such evolution and discussing the strengths and weaknesses that hinder the dissemination of model-driven techniques in the Web engineering field.

On the other hand, CIbSE is a flagship event in the field of Software Engineering, with the participation of a vibrant Ibero-American community. It includes three complementary co-located tracks: Software Engineering Track (SET); Experimental Software Engineering Latin American Workshop (ESELAW); Workshop on Requirements Engineering (WER). All the tracks have incontestable reputation, not just in the Ibero-American software engineering community, but also in the rest of the world.

The review process was very rigorous. SET16 received 32 paper submissions from 13 countries. The Program Committee includes 79 distinguished researchers from 17 different countries. At the end of the reviewing process, 7 high quality papers were accepted to be published and presented at the SET Track, representing an acceptance rate of 21.87%.
ESELAW16 received a total of 40 full paper submissions. The Program Committee was composed of 40 prominent researchers, plus 28 additional reviewers, from an international community (12 countries). After a careful revision process, 12 full high-quality scientific works were accepted, with an acceptance rate of 30 %.
The Program Committee of WER 2016 consisted of 43 experts from 16 countries. Among the 29 valid submissions, from 6 different countries, 12 full papers were accepted, which corresponds to a 41% of acceptation rate.

The two extended versions of the Selected Papers presented at SET 2016 offered contributions to the cloud computing and ontology topics:

- Paper 2, by Reyes et al., focuses on the study and comprehension of the human genome that implies dealing with information heterogeneity and inconsistency

of a large amount of data. To face this issue, authors proposed a Conceptual Schema of the Human Genome (CSHG) and enrich the CSHG with the integration of haplotypes. The goal is to improve the understanding of the relationship between genotype and phenotype. Such solution aims of providing conceptual models for improving diagnosis in medical contexts where Genomic Information Systems (GeIS) play a key role;

- Paper 3, by Rivera et al., takes into account the issue of establishing business goals (including tactical or strategic level goals) and checking for their achievement in a systematic and disciplined way. By means of a systematic literature review, the authors have observed that very few approaches support integrated strategies and multilevel goals. To bridge this gap, they proposed a holistic quality multilevel and multipurpose evaluation approach that ties together multilevel goals, projects and integrated strategies.

The Selected Papers presented at ESELAW 2016 and included in this special issue are:

- In Paper 4, Porto and Simao analyze defect prediction models as a tool on organizing the project's test resources. In absence of a set of historical defect data, a company can build an appropriate dataset from known external projects - called Cross-Project Defect Prediction (CPDP). The CPDP models, however, present low prediction performances due to the heterogeneity of data. Authors propose the integration of Instance Filtering methods with the selection of the most relevant features on the similarity calculation to obtain accurate filtered datasets and better prediction performances;
- Paper 5, by Silva et al., presents a Systematic Mapping (SM) to cover the existent technologies for identification and mitigation of security threats in software systems. The SM was executed in two steps, first in July 2015, and complemented through snowballing in July 2016. Most of the available techniques lack of empirical evidence of its application and impact in building secure software systems.

Finally, the Selected Papers presented at WER 2016 deals with:

- In Paper 6, Lima, et al. investigate scalability in the context of the i* framework, by means of a systematic mapping study. Managing the scalability and the complexity of such models is an important challenge in Requirements Engineering (RE). A total of 126 papers were analyzed, in order to understand how scalability is perceived by the RE research community, which proposals have considered this topic, and what open issues still need to be addressed. Scalability issues are indeed perceived as relevant and further work is still required. This study can be a starting point for researchers aiming to further advance the treatment of scalability in i* models.
- Paper 7, by Mighetti & Hadad, deals with the complexity and challenges of the global software development model. Global software development threats were studied in a real major project. Analyzing the serious consequences on that project, a proposal was developed using a Lexicon model and Scenarios in order to mitigate threats to requirements in this distributed working mode. The proposal was applied in a new real project of similar characteristics, and the comparison of results from both projects gives promising perspectives in terms of requirements quality and process time improvements.

We are confident about the interesting contributions to the Software Engineering community of these selected articles.

We would like to thank to all the people involved in the preparation and reviewing process, from the authors to the reviewers for their effort and work; as well as the CIbSE Steering Committee and CLEIej for offering us the opportunity of preparing this special issue.

Enjoy the reading!

Luca Cernuzzi, Lidia López, Ignacio Panach, and Martín Solari, special issue editors