Preface to the CIbSE 2018 Special Issue

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This special issue of the CLEIej consists of extended and revised versions of Selected Papers presented at the XXI Ibero-American Conference on Software Engineering (CIbSE 2018), hold in Bogotá, Colombia, in April 2018.

The four papers selected come from CIbSE 2018, the leading research forum on Software Engineering in Ibero-America. The papers included in this special issue, are covering two of the Foundation Tracks of CIbSE, i.e., the Requirements Engineering (WER), and the Experimental Software Engineering Latin American Workshop (ESELAW) tracks.

CIbSE2018 received 133 submissions (121 to the main scientific tracks and 12 to the doctoral symposium) from authors of 18 different countries. All submissions were reviewed by at least three members of the program committee, and an open electronic discussion was held post-review period to assure sufficient quality for the accepted contributions. The WER (Requirements Engineering) scientific track received 18 submissions (17 technical papers and 1 emerging ideas paper), out of which 7 (38.8%) were accepted and included in the final program (6 technical papers and 1 emerging ideas paper). The ESELAW (Experimental Software Engineering) scientific track received 32 submissions (27 technical papers and 5 emerging ideas paper), out of which 12 (37.5%) were accepted and included in the final program (11 technical papers and 1 emerging ideas paper).

The two extended versions of the selected papers presented at WER 2018 are the following:

- Paper 1, by Srisopha et al., addresses the challenge of using consumer product reviews as source of information that could enable a more responsive software requirements elicitation to meet user needs. Challenges in investigating these reviews could come from the fact that there is a huge volume of data available, as well as the fact that reviews of software products are diverse in nature, meaning that they may contain information mostly on hardware components or broadly on the product as a whole. Motivated by these observations, the authors conduct an exploratory study using a relevant dataset of review sentences from different Internet of Things (IoT) products. The qualitative analysis demonstrates that a sufficient quantity of software related information exists in these reviews. In addition, they investigate the performance of machine learning techniques for classification of information contained in the reviews.
- In Paper 2, Roldán et al. consider the testing of a system at early stages. The study proposes an ontology that defines and integrates the concepts included by the metamodels of different Requirements Engineering and Testing Management supporting tools. The formalization of these concepts and their relationships in an ontology language prevents ambiguity of the concepts and permit to the tools

involved to interoperate with each other, to achieve semantic consistency and the tracing of artifacts. The proposed ontology used in conjunction with a reasoner makes it possible to easily maintain artifacts and associations between them. The approach facilitates backward tracing from test cases to use cases and functional requirements artifacts, obtaining knowledge about the causes of a defect or a poor specification, and enabling impact analysis.

The following papers were selected from ESELAW 2018:

- In Paper 3, Villalobos-Arias et al. present a tertiary study on Model-based testing (MBT). The goal of this study is to identify and characterize secondary studies in MBT, in terms of the areas, tools and challenges they have investigated. The authors offer a systematic mapping of secondary studies included 12 literature surveys and 10 systematic reviews over the period 1996–2016. They found that the two most studied areas of MBT are UML models and Transition-based notations. The main challenges and limitations found were related to the need for more empirical evidence that supports the selection of MBT approaches and tools. Specifically, some areas still lack secondary studies: test execution aspects, language types, model dynamics, and some model paradigms and generation methods.
- Paper 4, by Morales-Trujillo et al. focuses on Privacy by Design (PbD) that is becoming a relevant issue that challenge the way software is developed. The objective of the study is to determine the extent to which PbD has been applied in software development endeavors. Thus, they present a Systematic Mapping Study to identify primary papers that describe the way PbD is considered in software engineering, which principles or goals pursues, and what PbD practices or techniques are used in software development efforts. As a whole, the authors identified a deficiency of sound PbD-related research in the area of software development. The selected primary papers address PbD from a general experience-based perspective. However, good PbD-related practices are neither fully developed nor validated. Furthermore, they observed a tendency toward following principles rather than explicit practices.

We are confident about the interesting contributions of this issue to the research and academic community.

We would like to thank to the authors for their high quality research, the members of the Program Committee of each track and the reviewers of this special issue for their effort and rigorous work done in the review process, as well as the CIbSE Steering Committee and CLEIej for offering us the opportunity of preparing this special issue.

Enjoy the reading!

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Special Issue Editors