

Guest Editorial Preface

Special Issue on Empirical Software Engineering

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According to Gartner, the global IT spending in 2019 was 3.79 trillion US\$ which makes up almost 5% of the global gross domestic product. A significant part of this industry is dedicated to software engineering. Although research in software engineering is rather mature, the pace of technological and organizational development leads to a demand for better understanding and improving software engineering and the related processes. This Special Issue was intended to address this issue by inviting papers which focus on empirical aspects in the area of software engineering.

In total, 16 papers were submitted to the Special Issue. After a rigorous review process involving a number of international experts in software engineering and board members from the *Journal of Cases in Information Technology*, finally two papers were accepted for the Special Issue. The paper acceptance rate is 12.5%

Let us briefly discuss the contributions of the papers included in the Special Issue: In their paper “Derivation of an agile method construction set to optimize the software development process” Vogel and Telesko consider the effectiveness of agile development methods with respect to cultural, technical, and managerial contexts. Based on literature research and practical experiences, influencing factors are identified. After clustering of these data, a framework for identifying optimization possibilities is derived and tested.

The paper “A theoretic game approach for quality assurance in software systems using antifragility-based learning hooks” by Vimaladevi and Zayaraz considers software with particularly high-quality requirements and suggests an approach based on learning from injected software defects. A software quality game is designed and studied with one player injecting errors into the software while the other player tries to recover them. Experimental data from such scenario are reported as well.

In addition, two manuscripts in this issue are from general submissions to the Journal of Cases on Information Technology. Both are case studies, unrelated to empirical aspects of software engineering.

We hope that the Special Issue will further stimulate research regarding the empirical aspect of software engineering.

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