A Tale of Software Faults: Myths and Facts

Katerina Goseva-Popstojanova
West Virginia University, Morgantown, WV, USA
Katerina.Goseva@mail.wvu.edu

Abstract — The cost of software faults is very high, not just because finding and fixing faults increase the development and testing cost, but also because of the consequences of field failures that happen due to (unfixed) faults. This keynote talk will address several aspects of software faults and their relationships with software failures and fixes. The empirical findings, which are based on NASA mission and open source software case studies, are related to (1) dominating types of software faults, (2) spread of fixes across software components and types of software artifacts, (3) effort needed to fix software faults, and (4) the effect of reuse on software fault proneness. The talk will be concluded with the challenges of data collection and software fault analysis, and some potential remedies to these challenges.

Short Biography — Dr. Katerina Goseva-Popstojanova is a Professor of Computer Science at West Virginia University, Morgantown, WV. Her research interests are in software engineering and cybersecurity, with emphasis on empirical studies and data analytics. She has published over 100 journal and conference articles on these topics and served as a Principal Investigator on various NSF, NASA, and industry funded projects. She has also served on organizing and program committees of many international conferences and workshops.