Empirical Software Engineering:

Applied Software Engineering Research and Best Industry Practice

Over the last decade, it has become clear that software engineering is fundamentally an empirical discipline: Software development practices and technologies must be investigated by empirical means in order to be understood, evaluated, and deployed in proper contexts. This stems from the observation that higher software quality and productivity can only be achieved if well-understood, tested practices and technologies are introduced in software development.

Empirical Software Engineering provides a forum for *applied software engineering research* with a strong empirical component. Its goal is to promote research on relevant problems following the *scientific method* and the reporting of *best practice in industry.* It is therefore a venue to publish empirical results which are relevant to both researchers and practitioners. Reported empirical studies usually involve the collection and analysis of data and experience that can be used to characterize, evaluate and reveal relationships between software development deliverables, practices, and technologies.

Both original and replicated studies can be reported, varying from controlled experiments to field studies, from data intensive to qualitative. Preference is given to studies that can be replicated or expanded upon. To facilitate such endeavors, the journal also forms a repository for the accessing and dissemination of the data and artifacts used in the studies. Papers on the infrastructure for supporting empirical research are also published.

Topics relevant to the journal include the following, given an appropriate emphasis on the collection and analysis of supporting data:

- Evaluation of analysis and design methods
- Evaluation of verification and validation methods
- Evaluation of novel quality assurance and project management practices
- Development, derivation and/or comparison of organizational models of software development
- Development of predictive models of defect rates and reliability from real data
- Comparison of cost estimation techniques
- Infrastructure issues, such as measurement theory, experimental design, qualitative modeling and analysis approaches.

More information on: www.sce.carleton.ca/squall/emse