

# Human and Social Factors of Software Engineering

Michael John

Fraunhofer Institut for Computer  
Architecture and Software Technology  
(FIRST),  
Kekuléstr. 7, 12489 Berlin, Germany  
+49-30-6392-1782

mjohn@first.fraunhofer.de

Frank Maurer

Department of Computer Science,  
University of Calgary,  
2500 University Dr NW  
T2N 1N4 Calgary, Alberta, Canada  
+1-403-220-3531

maurer@.cpsc.ucalgary.ca

Bjørnar Tessem

Department of Information Science  
and Media Studies,  
University of Bergen,  
Pbox 7800, NO-5020 Bergen, Norway  
+47-555-84-103

Bjornar.Tessem@uib.no

## WORKSHOP SUMMARY

From its initial days in the sixties and seventies, the field of software engineering has to a large extent been concerned with the technological aspects of software as well as the formal procedures to be followed and artifacts to be produced in order to create high quality software. However, for some years we have seen a growing awareness that software engineering is a process involving humans, with all their particularities, working together in a social context: software projects rarely fail because of technical issues – their often fail because of human and communication problems. Psychological and sociological perspectives and theories have been used in order to understand concerns that may cause problems in the process of constructing and maintaining software, and further to develop means to cope with these issues. In particular among agile software development approaches, we have seen new and inventive approaches to solve some of the issues relating to behavior, group interaction and society.

To make the social and human factors of software engineering more explicit, we aim among others to focus on psychological aspects of software developers and on the communication among software developers, between developers and users and other actors and stakeholders related to the software process. The formation of the social environment of the software developers, as well as its impact on productivity of the developments process

and the quality of software is another pertinent issue. Another perspective is the role technological tools play in the construction of the social environment in which software engineers work. Thus, including and combining approaches of software engineering with theories of cognitive science, psychology and social science, the workshop will try to systematize the relevant factors, establishing a common ground for further studies on the topic.

In particular, the workshop looks at software engineering from the perspectives of agile methods and communication theory in order to point out solutions and conditions for human-centered software engineering processes. Typical topics to be investigated are practices for knowledge dissemination in software engineering teams, knowledge reuse in software engineering projects, interactions in software development processes, social software approaches, decision making processes in software development and communication architectures for human-centric collaboration support of developer teams.

In more general terms, we aim to provide a forum for researchers and practitioners to discuss the latest developments in the areas of cognitive & social science approaches to software development problems, knowledge engineering and software engineering approaches, and how these interact to create a human centered software development process.