Hauptseminar: Behavioral Software Engineering (BSE)

Institute of Software Technology, Software Engineering Group

Sommersemester

General

Behavioral software engineering is a growing area of research, which bridges behavioral science disciplines such as psychology, cognitive science, and sociology with software engineering. It describes how human affect, behavior, and cognition influence individual aspects as well as organizational aspects in software engineering.

In this seminar we want to take a look at some topics that are being investigated.

More on the area of BSE:


Please note: The whole seminar will be held in English.

Organizers

The seminar will be held and organized by Dr. Daniel Graziotin.

The examiner is Prof. Dr. Stefan Wagner.

For questions please contact daniel.graziotin@iste.uni-stuttgart.de.
Process

We expect you, as a participant to the Hauptseminar to:

1. Take responsibility of a topic related to behavioral software engineering.
2. Conduct an extensive literature review of the topic.
3. Summarize the outcomes of the review and reason about it in terms of implications for research and implications for practice.
4. In light of point 3, propose three novel research designs that would likely result in a complete, real-world, and publishable research endeavor.

Expected outcomes

The above mentioned points are to be covered in two outcomes:

- Presentation of plans and intermediate results in a presentation during the semester.
- Report as an academic paper (8+ pages, double column, ACM format for conference proceedings) by the end of semester lecture time.

Areas

Studies of behavioral software engineering include, but are not limited to, cognitive style, demand control, job insecurity job & Life satisfaction, motivation, organizational commitment, positive psychology, social value orientation, stereotypes, stress, personality, work life balance, intentions to leave, communication, decision making, group composition, team dynamics, norms, organizational climate, culture, and learning. All in the context of software engineering.

You can either propose a topic or choose a topic.

Proposing a topic
Motivated students are better students. If there is a topic that you really wish to explore, we provide you the possibility to pick it.

More information on this will follow during kick-off.

**Pre-defined topic areas**

The following is a list of areas that students can choose during the kick-off meeting. The areas are wide on purpose as anything can be fit within them.

Another aspect that is wide on purpose is the term "software engineering" which covers several areas as defined in https://en.wikipedia.org/wiki/Software_Engineering_Body_of_Knowledge. You can specialize your topic within a certain area.

**Pre-defined topics**

- How does self-efficacy influence learning to program?
- What motivates software engineers?
- Commitment models in software engineering
- Stereotypes in software engineering and their psychological consequences
- Effect of stress in software engineering
- Behavioral aspects of the effects of leadership and leadership styles in software development teams.
- Behavioral aspects on why women are underrepresented in software development
- Behavioral aspects on why developers quit their jobs
- Different cognitive styles of team members
- How and why do new ideas spread?
- Why is new technology (not) accepted?
- Conflicts in teams and their mediation
- Work-life balance and job satisfaction in software engineering
- Punishments and rewards in software development
• Human-related factors influencing productivity in software development
• Emotions, moods, and their relationship with performance in software development - Culture in software development companies
• The relationship between wellbeing and software development
• Would brainstorming benefit the software engineering process?

Note

• We are not asking participants to implement and execute the studies they design in this seminar.
• We recommend participants to have attended a course on research methods (in software engineering) or to read books about research.
• We welcome participants to continue their proposed designs, or anything related to them, as research projects or MSc theses once the seminar is over.
• Participation to the seminar is mandatory, including being active participants.