*It Will Never Work in Theory: Live! April 2023*

# Emotion Awareness: Dimensions of Trust in Software Engineering

Dr. Preetha Chatterjee
Assistant Professor

SOftware Engineering and Analytics Research (SOAR) Lab
Drexel University, USA

preetha.chatterjee@drexel.edu          @PreethaChatterj          https://preethac.github.io

# Trust and Coordination in SE

**@norootcause@hachyderm.io on mast...** @norootca... · Jul 2, 2021 ···
Evolution of a **software** engineer's perspective:

1. It's about the code!
2. It's about the design!
3. It's about the requirements!
4. It's about the **human** coordination!

💬 29      🔁 209      ♡ 805

**Sarah Mei** ✔ @sarahmei · Jan 4, 2021 ···
We all need to **trust** each other, and we also need to put a lot of energy into understanding each other. We will write less code than the all-Sarah **team**. But we will write better **software**.

💬 1      🔁 3      ♡ 33

# What is Trust?

*"the overall willingness of virtual team members to rely on one another that results from the aggregate of potential trust dimensions that are achieved through socio-emotional and task process and supported by technology capabilities"*

**- Mitchell & Zigurs, 2009**

# Complex Psychological Concept!!

# Dimensions of Trust: Factors that implicitly drive your decisions!
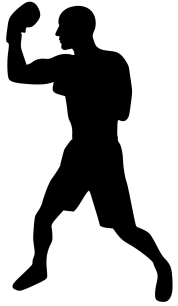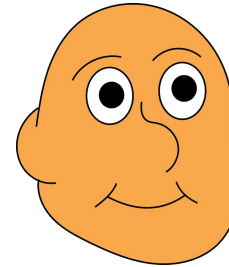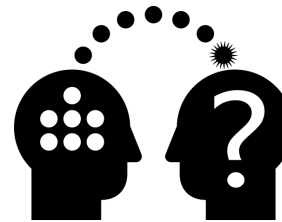
Action

Institutional

Commitment

Personality

Competence

Transferred

# Preliminary Study



**100 Pull Requests**

# Dimensions of Trust in SE - Pull Requests (PR)

**Action** — The frequency and quality of comments/reviews of PRs.

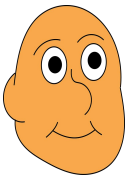**Commitment** — Reviewing PRs when requested or addressing a reviewer's comment.

**Competence** — Developers' past actions in the repository, their overall activity and status on GitHub.

**Institutional** — Developers associated with the same organizations are more likely to trust each other.

**Personality** — Developers who accept a high number of PRs tend to have higher trust in others.

**Transferred** — Well-established members can recommend the work of new contributors.

Amirali Sajadi, Kostadin Damevski, and Preetha Chatterjee, "Interpersonal Trust in OSS: Exploring Dimensions of Trust in GitHub Pull Requests", ICSE NIER, 2023

# Trust in Pull Requests

**Pull request interaction with high levels of trust**



**High Competence Trust**
249 followers,
96% PR acceptance,
Project member

**High Action-based Trust**
Detailed & Frequent feedback, code revisions

**Commitment Trust**
Reviewing & revising the code when requested

**High Personality-based Trust**
Accepted 23/23 of the PRs he closed

**Institutional Trust**
All three users are part of the ASF GitHub organization

**Low Competence Trust**
4 followers,
88% PR acceptance,
Not a member

**Low Action-based Trust**
No responses, no discussions

**No Commitment Trust**
No review requests & no changes implemented

**Low Personality-based Trust**
Reviewer has rejected 90% of all the PRs he has closed.

**No Institutional Trust**
The users are not members of same GitHub organizations

Amirali Sajadi, Kostadin Damevski, and Preetha Chatterjee, "Interpersonal Trust in OSS: Exploring Dimensions of Trust in GitHub Pull Requests", ICSE NIER, 2023

# Implications

- Examine **what you trust, and how you trust**!! This can help you identify risks in your collaboration.

- Identifying and **speaking frankly about our trust levels** can help in improving team collaboration and communication

- Understanding **team dynamics in terms of these trust dimensions** can aid project managers in timely interventions

- Practitioners can focus on **transparent** communication, and regular feedback along these specific trust dimensions to build and maintain trust.

*Thanks to my co-authors: Amirali Sajadi, Kostadin Damevski!*

**Preprint**: https://preethac.github.io/files/ICSE_NIER_2023.pdf
**Dataset**: https://tinyurl.com/2v77k4hv