Reference: QSE:CIS Survey SE

Topic: A Survey of Collective Intelligence Systems for Software Engineering

LVA-Type: Bachelor’s Thesis, MSc Project, Seminar Work

Start: As soon as possible

End: By arrangement

Contact: Angelika Musil (angelika.musil@tuwien.ac.at), Stefan Biffl (stefan.biffl@tuwien.ac.at)

Background

Collective Intelligence Systems (CIS) like Facebook, Wikipedia, YouTube, Yelp, and Twitter provide their users coordination and information sharing capabilities and thus supports the interactions between human users. The strength of these systems is to efficiently aggregate and distribute different kinds of information and content among their user base. Nowadays, CIS have experienced wide acceptance by people and thus have an increasing influence on knowledge creation and sharing processes.

CIS experience an adoption in a variety of application domains and in organizations, and has also a great potential to provide benefits for the domain of Software Engineering (SE). Popular CIS for SE are Stack Overflow and GitHub.

The goal of this work is to conduct a pilot survey to collect, categorize, and report features and capabilities of existing SE platforms from a perspective of CIS in order to identify common functionalities, formats, data models, metrics, workflows, application contexts and usage scenarios. In this work the student describes the survey process design under the guidance of the research team, systematically investigates a number of SE platforms with regard to interaction workflows from an end-user perspective, surveys their existing documentation (e.g., user guides, API/developer documentation, architectural documents), creates a structured collection and packages of data samples, and finally reports the data collection and results. Based on this survey, the current status should be described and limitations and future research directions should be derived and discussed.

Fig 1: Stack Overflow Start Page
Tasks

- Design of a survey using an approach from empirical software engineering.
- Collection of systems.
- Data Analysis.
- Reporting of study results.

Experience and skills needed

- Good written and spoken English skills.
- Experience / interest in Social Web, Crowdsourcing, Collective Intelligence and software engineering tools & processes.

Links

All resources are accessible via TUNet or TU VPN.


