Proposal Status | MAIN

Organization: University of Alabama Tuscaloosa

Panel Summary #1

Proposal Number: 1629871

Panel Summary:
Panel Summary

Short description of project:

The goal of this project is to develop the Systematic Literature Review Authoring Infrastructure and Toolkit for Software Engineering (SAInT), a tool for supporting software engineering researchers in conducting systematic literature reviews. Systematic literature reviews are increasingly frequent in software engineering, but several important barriers make them needlessly difficult to perform. The proposed infrastructure plans to create features that address points gathered from community input in 4 major areas: (1) identifying papers, (2) collaborative SLRs, (3) storage of extracted data, and (4) evolving SLRs over time.

Intellectual Merit:

Strengths:

+ The PIs have done an excellent job gathering input from the community through both surveys and workshops. Through this input, the proposal clearly articulates a number of goals to address significant barriers that software engineering researchers face today in performing systematic literature reviews. For example, doing a keyword search as part of an SLR today results in many, many pages of output from multiple paper repositories, each expressed in conflicting formats and containing duplicates. Processing this data requires writing a web scraper and manually de-duplicating, which takes time. The proposed framework automates this task by directly interfacing with paper repositories and performing de-duplication.

+ While focusing on aspects that might be seemingly mundane, an infrastructure proposal is well suited to address such issues, as individual researchers are less likely to have the time to address such issues for use in only their work and such issues represent real pain points.

+ The prior work has already demonstrated some important accomplishments, including eliciting support from the ACM & IEEE in interfacing with their paper repositories.

Weaknesses:

- Several existing tools provide closely related functionality for systematic literature reviews, as well as commercial tools such as Google Scholar. It is not entirely clear how the proposed features go beyond such tools.

- The proposal hints at capabilities that might require natural language processing, but there is no suggestion as to what that might actually be.

Broader Impacts:

Strengths:

+ Literature reviews are conducted in areas beyond SE, and the proposed infrastructure might also be applicable in other disciplines. For disciplines beyond CS, this might require additional work to interface with other paper repositories.

+ The development of the infrastructure was very community driven, providing strong evidence for potential interest and adoption by the community.

Weaknesses:

Data management plan:

Criteria Specific to CRI Program

Differences of opinion:

- The panel discussed whether addressing mundane challenges was a strength or a weakness. Some felt that it would be stronger to include a plan for more ambitious features, such as natural language processing. Others felt that

addressing the mundane issues eliciting from the community was a big strength in addressing real community needs and offering evidence that the proposal will be successful.

Constructive suggestions for improvement:

- Include a concrete example of using the proposed infrastructure.

- Describe in greater detail why functionality provided by existing tools does not specifically meet the identified needs, and describe how the proposed features will do so more effectively.

Summary/Rationale for panel's recommendation, including key strengths and critical weaknesses:

This proposal describes an infrastructure for systematic literature reviews. Through gathering extensive input from the community of SLR users, the proposal effectively articulates a number of concrete needs and describes infrastructure intended to address these needs. The proposal may have the potential for making SLRs significantly easier to perform, but it could be clearer how the proposed features go beyond existing tools.

The panel placed this proposal in the following category:

_____ Highly Competitive (HC)

_X__ Competitive (C)

_____ Low Competitive (LC)

_____ Not Competitive (NC)

The summary was read by the panel, and the panel concurred that the summary accurately reflects the panel discussion.

Panel Recommendation: Competitive

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