

Collaborative Bug Triaging

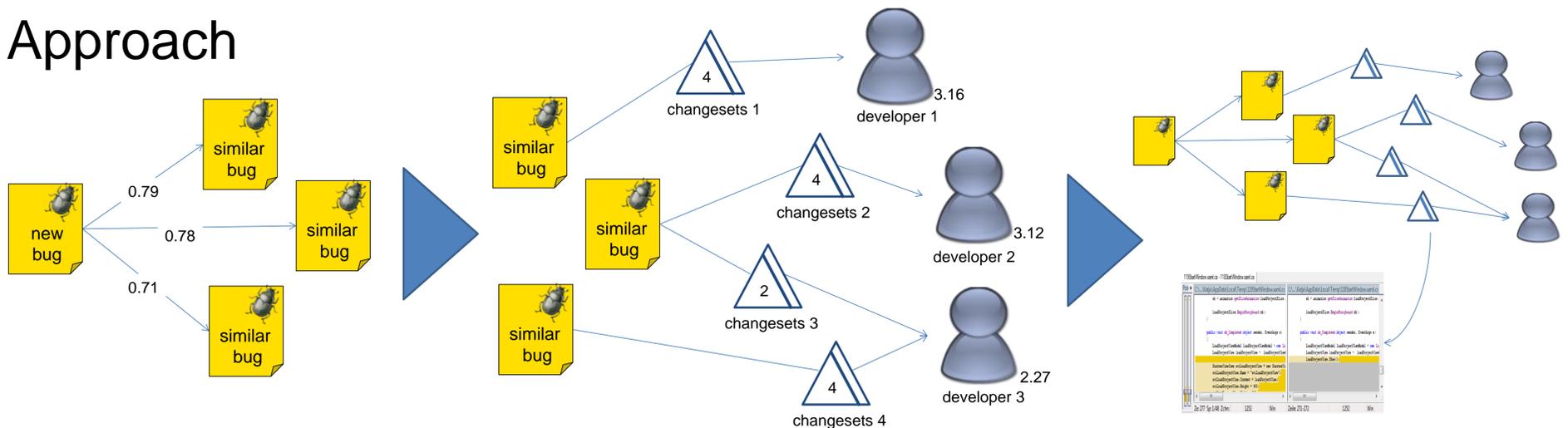
using Textual Similarities and Change Set Analysis

Katja Kevic, Sebastian C. Müller, Thomas Fritz, and Harald C. Gall, University of Zurich, Switzerland
katja.kevic@uzh.ch, <http://www.ifi.uzh.ch/seal.html>

Motivation

Often a lot of people are involved in bug triaging [1], but this collaborative aspect is conducted implicitly and typically not supported by effective means. We try to investigate whether the supporting of the collaboration can improve the bug triaging process. Our analysis to recommend expert solvers is essentially based on the assumption that developers who committed a changeset which is linked to a similar bug are considered as potential experts.

Approach



Information Retrieval

New bugs might be best addressed by developers who previously addressed the textually most similar ones.

To find textually similar bugs we calculate the cosine similarity.

The similarity threshold is adjustable.

Change Set Analysis

Refinement of the ownership concept by analyzing change sets associated with the similar bug reports.

An expertise score is calculated. It is the sum of all paths leading from the new bug to the developer. The value for each path is the cosine similarity multiplied with the count of linked change sets.

Context

Enables a more informed identification of an expert.

Detailed investigation of the changesets is possible.

Collaboration

Explicitly designed for a Microsoft Surface Table for simultaneous interaction.

Ability to rotate, resize, and freely move each interface item (orientation-independent UI).

Check out the use case video:

<http://seal.ifi.uzh.ch/research/tools/collaborative-bug-triaging-video>



Evaluation

We applied the tool in our own software projects and experienced the usefulness of having additional context for the expert recommendations.

We plan to conduct a user study to evaluate our hypotheses.

Summary

Our approach addresses the collaborative aspect of bug triaging while combining IR and change set analysis to recommend potential experts.

To provide a broader discussion base during a bug triage and to make a more informed identification of an expert we allow the users to investigate more context about the changesets.



University of
Zurich ^{UZH}

[1] Carstensen, P. H., Sorensen, C. and Tuikka, T., Let's talk about bugs! Scandinavian Journal of Information Systems, 1995. 7,1 33-54.