Software Analytics Project

You can opt for three options. Option A proposes to extend the analysis of one of the projects we studied during the labs. Option B proposes to replicate an existing study but using a different dataset. Finally, Option C gives you the opportunity to carry out your own software analytic study according to your own ideas.

Option A.

If you opt for Option A, the project consists in extending the analysis of one of the projects studied during HW4, HW5, and HW6. The projects are:

1. Predicting story points from User Stories
2. Recommending issues to developers
3. Exploring the GitHub social network

The main goal of each project will be the same as we studied during the labs; however, your task will be to carry out a more thorough analysis and draw conclusions. Whatever the project you choose, you will be provided with a dataset of 8 open source projects that use JIRA. Your analysis must compare the results across these projects.

We propose the following extension points for each project. To obtain full marks you have to include an analysis of all them.

1. Predicting story points from User Stories [1, 4]
   a. Hyperparameter tuning
   b. Comparison with other algorithms
   c. Addition of new features
   d. Cross-project evaluation
2. Recommending issues to developers
   a. Hyperparameter tuning
   b. Comparison with other algorithms
   c. Propose two different methods to evaluate the approach: one based on ML and one based on an experimental design
3. Exploring the GitHub social network [3]
   a. Creating a dataset with data from Github about 8 open source projects
   b. Creating a similar dataset from Github about 8 (at least) high-rated projects
   c. Describing the communities in terms of commits
   d. Comparing the communities of (a) with (b)

Option B.

If you opt for Option B, you will work on the topic “Sentiment analysis from commits”. Replicate the study presented by [2], and compare this results with the results from the 8 open source projects.
Option C.

If you opt for Option C, you are allowed to propose your own project in the context of Software Analytics. We will discuss and determine the goals and requirements of your project.

Submission

You have to submit:

- All the scripts/code/software projects you have used to do the analysis
- A report (PDF) following the ACM format

References


