COM S/CPR E 513 Survey

Learning Objectives

1. Get familiar with the terminologies we taught in class
2. Learn where to find the literature of program analysis
3. Practice presentation and teaching skills
4. Exercise analytical skills on the data set
5. Get in-depth understanding on a subject of program analysis of your interest

Description

The purpose of doing a survey is to teach you how to find, read and present the literature of program analysis. To demonstrate your learning outcomes, you will teach a mini-tutorial in class that summarizes what you have read and also submit one page in writing to report your thoughts and ideas on the papers you have read and your vision for future directions.

You can select a topic of interest from the following list:

1. finding bugs
2. automatic test input generation
3. debugging and program repair
4. specification inference
5. analyzing software changes and versions
6. big code analysis
7. analyzing AI software

For each topic, you will need to decide a sub-topic, and then select 5 papers relevant to the sub-topic. The papers should be selected from the top conferences or journals of software engineering and programming languages published in recent 3 years. The conferences you should search for such papers include ICSE/FSE/PLDI/ASE/ISSTA (for topic 7, you might also check ICML and NeurIPS). The journals are TOSEM, TSE, TOPLAS. Special papers and topics may be permitted upon the instructor's approval.

The survey will be assigned at the first week of the class when you will be asked to select a topic of interest from the above list. The deliverables are due at the end of each topic. The specific dates for each topic will be announced in class. Note that the surveys for different topics are due at different dates.

Deliverables

1. Presentation slides
2. Latex bib file
3. 20 min in-class mini-tutorial that can summarize your 5 papers
4. 1-page writing on thoughts of the papers

Please submit your slides of the tutorial and your latex bib file to canvas under the “survey” column. All the deliverables should be zipped to one file.

Grading Criteria

Presentation (6)

The in-class tutorial will be peer reviewed, including me and the rest of the class. Here are the four questions that go to the evaluators:

1. Clarity (2 pt): are you able to understand the presentation? most, not at all, somewhat
2. Completeness (2 pt): does the presentation include the important details of 10 papers? yes, no, somewhat
3. Insightfulness (2 pt): is the material useful and interesting? Does the presenter use a novel way to summarize and analyze the papers? Does the presenter have interesting comments about the work? yes, no, somewhat
4. Provide one feedback to the presenter to further improve his/her tutorial.

We will fill the questions right after your tutorial and compute an average score among all the evaluators as your tutorial scores.

Writing on thoughts and ideas of the papers and future directions (6)

1. Clarity (2 pt): are the summary documents understandable?
2. Insightfulness (4 pt): does the document contain interesting thoughts and ideas?

Can the presentation slides be integrated to the course materials (1)?

1. Yes (1 pt)
2. No (0 pt)

To be accepted as a pull request to the course website, please make sure your presentation is professionally written. For example, the examples you want to add should be complete, clear, big enough for slides. The references and citations will be properly added.

Your evaluation for other tutorials (2)

You should be prepared to attend all the tutorials and also file the evaluation fairly. Absence and irresponsible evaluation will lead the 2 points reduced for your score.