CS 610 Semester 2020–2021-I: Paper Reading 1

19th October 2020

Due Your assignment is due by Friday Oct 30th 2020 11:59 PM IST.

Policies

- You should do this assignment ALONE.
- Do not plagiarize or turn in solutions from other sources. You will be PENALIZED if caught.
- You are permitted to discuss high-level concepts in the papers on Piazza, provided it helps your understanding.

Submission

- Submission will be through mooKIT.
- Submit a PDF file with name "<roll-no>.pdf". We encourage you to use the LaTeX typesetting system for generating the PDF file.
- The PDF file should contain your critiques for the given paper(s). Write a separate critique for each paper.
- You will get up to TWO LATE days to submit your assignment, with a 25% penalty for each day.

Evaluation

- We will read through all individual critiques. In general, we will try to judge your understanding of the paper and your thoughts on the work.
- Focus on thinking about new or better ideas to solve the same problem.

Paper 1: Archer **[50 points]**

S. Atzeni et al. ARCHER: Effectively Spotting Data Races in Large OpenMP Applications. IPDPS 2016.

Link: `https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7516001`

Paper 2: ROMP **[50 points]**

Y. Gu and J. Mellor-Crumney. Dynamic Data Race Detection for OpenMP Programs. SC 2018.

Link: `https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8665807`

The goal of this exercise is to understand and appreciate the scope of open research problems and the related challenges on the topics that we study in class. Think of these as additional reading to augment our knowledge on concurrency and OpenMP.

Writing Good Critiques

The following is a reasonable template that you can use to write your critiques.

```
Paper summary:

        Summarize the paper in your own words in about 10-15 lines.

Key insights/Strengths:

        List of points that you liked (\eg, a new idea, well-engineered,
        or thorough evaluation), and detailed comments to justify your claim.

Weaknesses:

        List of points that you disliked about the work (\eg, high space
        overhead, suboptimal algorithm), and detailed comments to justify
        your claim.

Unsolved problems/Potential future work:

        (i) Ideas or extensions that you think can improve the current work.
        (ii) Other problems that you think could be interesting.
```

The following are a few additional suggestions to write good critiques.

- You should use the *Paper summary* section to write a summary (say around 10-15 lines) of the problem being solved and the idea(s) proposed in the paper.
- Keep taking notes as you read the paper. By the time you finish, you will have enough interesting material jotted down.
- Often it helps to go and read the most closely-related work. It helps clarify concepts and also helps you gauge the current paper better.
- It is possible that you do not understand every line in the paper. However, try to convince the reader that you have not just skimmed the paper, but that you understood at least some parts of it at a fairly deep level.
- It is okay to not comment on every detail. Depth is more important than breadth.
- Do not blatantly copy text from the paper. It shows a lack of effort. Instead, try to summarize the idea in your own words.
- Do not blindly believe in the claims of the authors. It is a skill to be able to look beyond the claims.
- Assume the reader of your critique already knows the basics about the paper, so you can in general avoid repeating obvious facts. Writing imaginative and interesting ideas in critiques are more appreciated than just stating the obvious.

- A good critique should usually be 700+ words, with more emphasis on the Strengths, Weaknesses, and Potential future work sections. Note that there is no strict binding, 700 is a number to force the reviewer to think hard (many conferences follow it).
- Good English matters, but please ignore grammatical and typographical issues in the papers while writing your critiques.

You will find a lot of excellent advice on the Internet about how to review technical papers and how to write good critiques.

- `https://emeryblogger.com/2018/03/22/reviewing-guidelines-for-program-committee-members/`
- `https://www.cs.utexas.edu/users/mckinley/notes/reviewing.html`