CIS-490H Edge Computing

With Dr. Zheng Song

HW Questions: How to Read Research Papers

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1. **When applying the three-pass approach, what should you focus on for the first pass, for the second pass, and for the third pass?**

   For the first pass, you want to focus on reading the abstract, reading titles and subtitles and headers, reviewing charts and graphs including their labels, and read the summary and see if you can get an idea of what the paper is about and what conclusions are made. You should have an overall idea of what the paper is about (birds-eye view as one of the papers put it).

   For the second pass, you want to go more in depth and read over the entire paper, while ignoring any very technical details or checking references. For example, you can skip math equations or the very technical parts of the methodologies, especially if it is well beyond your area of research or ability to comprehend. By the end of this pass, you will have a much greater background of the paper and its general methods, as well as what was achieved and how the paper was structured and written.

   By the end of the third pass, you should be able to understand a summary and conclusion of the findings of the paper in a much more in depth manner. Often you may not reach the third pass because it takes so much time, but you should be able to synthesize everything about the paper so as to be able to reproduce the paper and its methods and even offer critiques and other ways to possibly achieve or improve upon or expand the literature.

2. **What are the four questions you want to ask yourself when reading a CS research paper? In which pass are you expected to find the answers to these questions?**

   1) what is the research problem, 2) what contributions to the research does the paper claim, 3) how do the authors validate what they claim to contribute, and 4) what are the conclusions of the research done.

3. **Most non-survey papers come with evaluation. What are the common mistakes that cause a claim made based on experiments to be faulty?**

   One common mistake is to make a claim that is too ambitious and comprehensive – thus the likelihood of the claim being substantiated and validated is much lower.

4. How to generate your own research ideas from reading a paper?

You can ask yourself fundamental questions about the paper, especially after and during a full synthesis of the paper when your understanding of the paper becomes very in-depth. Those questions of synthesis will allow you to generate ideas about how to improve or even rework the idea and purpose of a research paper into your own idea.

5. How to write a short review (1 page) for a paper?

You want to have the three basic components: summary, critique, and synthesis. This allows someone who reads your review or even yourself when you need a refresher to get slightly deeper abstract about the research paper.