

For this assignment, you are required to choose one of the general areas presented below and read through the previous research about that area. If you want to suggest another topic please tell me as soon as possible. I may or may not approve it depending on its merit.

After reading, you should write a summary of your findings as well as any new ideas that might come to you. There is a bonus for novel ideas and even extra for those who make a detailed analysis of their ideas and a rigorous comparison with the current research in the field.

You should submit your report by 07 December 2016 and prepare to give a short presentation on your findings to the class on that same day. Each student will be given ten minutes for the presentation followed by five minutes to answer any questions posed by the rest of the group. This is a “mini-conference” for you to present your research.

You should give some feedback on your progress according to the following steps:

16 November 2016: choice of the topic.

23 November 2016: initial list of references.

30 November 2016: first draft.

07 December 2016: submission of the final report and presentation.

The final report should be in the IEEE conferences format with a maximum size of 4 pages double columns. Check http://www.ieee.org/conferences_events/conferences/publishing/templates.html for the templates.

The suggested topics are:

1. Approximate computing to trade-off accuracy for energy.
2. Applications of arithmetic in security, especially fully homomorphic encryption (FHE).
3. Interval arithmetic, especially universal numbers (unums) and universal boxes (uboxes).
4. Error detection and correction, especially self-correcting arithmetic blocks.
5. Verification methods for arithmetic blocks.