

Computer Science 530 - Research Paper Proposal -- Fall 2022

Due: September 28, 2022

(early or late proposal submissions are accepted)

(feedback will be provided in the order received)

The purpose of the research paper is for you to become an expert on a particular topic in computer security. The research paper should be written so that it conveys information to the reader. When grading the paper we will ask ourselves whether other students in the class might learn about the topic you choose by reading your paper. The paper should contain original analysis of the papers you choose to cover, and ideally suggest directions for future research on the topic.

Select a topic related to the topics in the course syllabus, or ask Dr. Neuman if you would like to write on another topic that you feel is related to computer security. Some examples of paper topics include comparisons of approaches taken by different systems to solve security problems, surveys of the literature on a computer security topic, and discussions of particular problem areas in computer security.

Prepare a reading list of the papers that you plan to look at. You must include full citations for the papers. Don't provide just a list of URL's, or paper titles without providing information on the authors, the title, and where the papers appear (conference, journal, etc). The purpose of this list is to make sure you have some place to start. Most of the papers in your reading list should be beyond those that are included in the course materials. You may use the library as a resource when looking for material on your topic. You should not constrain your search to only information easily found on the web. In fact, most of the papers in your reading list should be from journals and conferences (though you are likely to find copies of many of these online). Do not use marketing literature (sometimes called white papers) or high level issues articles from trade publications as primary sources. You will be free to use additional papers if you come across them during your research.

Be sure to follow reference from relevant papers to other sources, and look up the original papers covering a topic, don't rely on summaries provided by someone else. You may also want to use the site [citeseer](https://citeseer.ist.psu.edu) (citeseer.ist.psu.edu) or [Google Scholar](https://scholar.google.com) to find citations to some of the papers you start from. This will likely turn up more recent papers on the same topic.

Prepare a couple of paragraphs describing the topic, the particular issues you plan to cover, and the questions you plan to answer. Turn in this description and your reading list with full citations for the papers you plan to use. This description and reading list should be uploaded through the D2L Dropbox for the Research Paper Proposal Assignment. The instructors will respond with feedback in D2L in the order that proposals are received.

Additional Guidelines for the Research Paper Proposal

Guideline of the topic

To receive a good grade on the paper you will have to say a lot more than what can be learned from the course readings and from the lectures. If all you do is go over what was covered in class in longer detail, you will not get a particularly good grade on the paper.

In general, it is NOT appropriate to focus on just a single approach or system. Your paper should not be on a single approach to a problem but should instead cover several approaches and highlight the strengths and weaknesses of each approach. Even if you are presenting your own idea, you should compare your idea with other existing approaches that are related to yours.

Lastly, keep in mind that you are writing a paper about computer security.

References

Source of the reference

Most of the papers you reference must be from the following sources: - a journal (a trade magazine/publication is not a journal) or - a proceeding for a research oriented conference. (a gartner group seminar is NOT a research conference).

White papers, Internet drafts, RFC's, and web pages are okay to supplement the above listed sources but these and other non-refereed publications can NOT constitute the majority of your references.

Full citations are required

Take a close look at the way the references are cited on each of the papers you read during the course (i.e., reading list), then follow the format. Each citation must specify which conference proceeding or journal the paper appeared. You must include complete citations, even in the proposal.

The number of the references

You should have enough references to cover the material you will need to write about. You will be allowed to add references after submitting your proposal if you find additional information later - and we would be surprised if this did not happen. In general, if your reference list has only three or four papers, you might need to find more related papers that are focused on the particular topic you will be writing about.

Scope of the references

Your references must be focused. You should NOT pick all the papers you can find with some keyword search from the web. Before you submit your proposal, you must read those papers and think what each paper says and how the ideas fit together or contrast each other. Don't send me a list of references that resulted from a search and then ask me which ones are relevant to your topic. That is part of your job in writing the paper.

Being focused does not mean that you can pick papers from a single group or institution. For example, as is the case of a survey paper, you must have references from different sources and your presentation must be a critical assessment of one system or approach comparing aspect of it with what has been done elsewhere.

How to find papers

Just using whatever comes back from search engines on the web is not a good way to get useful information. Look at the citations from the papers you already have, and perhaps go to [citeseer](https://citeseer.ist.psu.edu) (citeseer.ist.psu.edu) or or [Google Scholar](https://scholar.google.com) and look for papers that cite these ones too.