

CS 400 and 495: Proposal Guidelines

Due 11:59 PM on the scheduled deadline

1. Contents

Your proposal should cover the following topics. Many of them will be refined and deepened for Milestone 1.

- **Abstract:** meant to be a snapshot of the entire paper (word count < 300). It should contain a brief description of the problem statement, your project motivation, your potential contributions to the field and the expected (experiment) results.
- **Introduction:**
 - Length: $\frac{3}{4}$ of a page or an entire page.
 - A very *brief background* of the proposed topic (2-3 sentences).
 - The *existing problems* in this topic area (must be clearly stated).
 - The *existing solutions* for this topic. What are the *shortcomings* of the existing solutions (name 2-3 aspects)? This serves as a summarization of the next Section – Background.
 - What is *your solution* to solve this problem that is different from the existing ones? Most importantly, to differentiate your project from others, you must list 2-3 aspects that are uniquely designed by you.
 - What are the *expected results* from your solution?
 - A short paragraph to list the organization (section names, etc.) for the rest of the paper.
- **Background:**
 - Length: > $\frac{1}{2}$ page.
 - A literature review is an important part of any research. Find at least 3 most related literatures and answer the following questions for each.
 - Who has worked in this area in the past?
 - What achievements have they made?
 - What have been the major stumbling blocks (ideally, this is where you can improve)?
- **Design:**
 - Length: 1 to 1 $\frac{1}{2}$ pages.

- You need to draw some block diagrams to illustrate your overall design idea. For example, if it is a software, you may want to draft the flowchart; if it is a system, you may want to draw the connectivity among components.
- If it is a software project, what are the features you expect to implement in code? If it is a theoretical project, what results do you hope to show? List core features that your project must include to be considered successful as well as a wish list of additional features which you hope to include.
- If it is a programming project, what language do you plan to use for implementation and why? Do you anticipate needing to use any particular software or hardware? If your project depends on analyzing or processing a large collection of data, how do you plan to assemble this data? How do you plan on testing your work?
- **Experiments:** the experiments that you want to conduct to evaluate the effectiveness of your design. List the possible data points you want to collect, and the metrics you want to use to compare, and the possible results you will get.
- **Timeline:** When do you expect to have what done? Be thoughtful and realistic. Use Gantt chart to illustrate the timeline.
- **Reference:** this is a separate section by the end to place all the literatures you cited in the Section Background or others. The reference must be in the ACM reference format. E.g.:

[1] P. Li, X. Wu, Y. Ran and Y. Luo, "Designing Virtual Network Functions for 100 GbE Network Using Multicore Processors," *2017 ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS)*, Beijing, 2017, pp. 49-59. doi: 10.1109/ANCS.2017.15

2. Format

- You must have *more than* 4 pages and *less than* 8 pages of contents with the ACM double column proceedings template. See Section 3. Grading.
- For LaTeX users, if you want to use the online services such as Overleaf, you can find the format here: <https://www.overleaf.com/gallery/tagged/acm-official#.WOUOk2e1taQ>
- For Microsoft Word users, download the word template from the link on the ACM website: <https://www.acm.org/binaries/content/assets/publications/article-templates/pubform.docx>

3. Grading

Grading of the proposal will be based on the topics discussed above:

Topic	Percentage
Abstract	10%
Introduction	15%
Background	10%
Design	15%
Experiments	10%
Timeline	10%
Reference	10%
ACM Format	10%
Length	10%