Guidelines for the CSS Honors Thesis

Overview
The CSS Honors Thesis involves a paper that describes all aspects of your project, from initial research and conception to final delivery that includes results and their analysis. The paper connects your project to the field, including previous and current work, and possible stakeholders who will stand to benefit from your work.

The larger purposes of the CSS Honors Thesis include:

1) Developing the ability to analyze, synthesize, and understand scholarly work
2) Becoming an independent and critical thinker
3) Communicating your findings to the wider field of Computer Science

General Guidelines
The CSS Honors Thesis should follow the structural conventions of the scientific research paper. This form is both highly structured and, in its variations, flexible enough to accommodate strategic departures based on your project. See the University of Washington Word or LaTeX templates for Master thesis, which you will need to adapt to fit the CSS Honors Thesis. See the UW CSE Allen School undergraduate senior thesis papers for examples.

Section-by-Section Guidelines
Each section of the paper has its own specific purpose(s), as described in the following subsections.

Title Page
Include the appropriate meta-data about the project and make it clear that this paper is written in partial fulfillment of the requirements for a CSS Honors degree. Follow the format given in the University of Washington Word or LaTeX templates, with appropriate modifications.

Introduction
Define your project goals, both general and specific, as well as the problem to be solved (or the opportunity it offers). Position your work in relation to the field by summarizing previous relevant work and how your work builds on it, if appropriate.

Methods, Design, or Architecture
Depending on your project, you may write about one of these aspects or combine them under one heading. Explain your method, design, and/or architecture so that others in the field can both understand it and reproduce it.

Results
Present your results and evaluate how successful you were in meeting your goals. Acknowledge, detail, and attempt to explain any unexpected results.
Conclusion
Discuss the implications of your results and main takeaways. Acknowledge and discuss limitations of your project and propose areas for future work.

Abstract
Despite its late appearance on these Guidelines, the Abstract goes before the Introduction; however, you usually will write it last. Present an accurate synopsis of your research project, so that other researchers can decide whether to read the full paper.

General Writing Guidelines:

- Avoid passive voice.
  - Passive voice often introduces ambiguity about who did what and when,
  - It is less interesting to read, and weakens your prose. (See here for more on this topic.)
- For every artifact (e.g., figure, diagram, photo, illustration):
  - Include a caption
  - Size the artifact to minimize the area necessary to communicate what is important for the reader to know
  - Explain in the text what the reader should attend to in that artifact. It is your job to make sense of the artifact for the reader, connecting it to the prose and highlighting the important aspects of the artifact to attend to.
  - See here for more on this topic.
- Avoid using determiner words such as “this” and “those” which often introduce ambiguity for the reader. Instead, use the noun you are referring to.
- See the University of Washington Bothell’s Writing and Communication Center’s Resources website for additional information about writing well.
- For each claim or assertion you make:
  - Provide evidence to support the claim.
  - Beware of making claims that are stronger than can be supported by the evidence. If necessary, use a qualified claim to appropriately weaken your claim (see here).
- The clarity of your use of language and terminology reflect upon the clarity of your thinking. Just as in programming, it is important to use consistent terminology with consistent capitalization and wording. Avoid using multiple terms for the same concept. Refactor your terminology as you evolve your understanding of the system you are designing and building.
- Strive for consistency within your document. If you use Microsoft Word, use paragraph styles to ensure consistent formatting of paragraphs and text. And use Word’s References/Cross-reference feature to ensure that Figure / Table / Appendix / Section etc. numbers are correctly updated as needed.
- Ask your faculty honors adviser for any additional requirements or interpretations of these requirements.
- For more information on how to do research, write, evidence arguments, and so on see The Craft of Research, Third Edition by Booth et al.