

Guidelines for CSS Capstone Proposal

Overview

The capstone proposal is a document that lays out your plan for accomplishing your capstone project/thesis; it should be informed by the research that you have already done.

The purpose of the proposal is to provide a clear idea of your project/thesis – including background, context, your concept, and proposed design – in order to enable your committee to evaluate, ask questions about, and guide your work over the coming weeks and months.

Your proposal should demonstrate that your project/thesis has a reasonable chance of success within the MS capstone time frame. This includes showing how it builds upon what you have done and learned so far in the CSS program.

A secondary purpose of the proposal is to create a provisional plan for your project/thesis, mapping the tasks and milestones with as much thought and precision as is possible at the time you write it. The plan serves as a framework for your asking questions – early and often, and, in particular, at key junctures (decision points). It will help you be comfortable with surprises and new challenges, as you stretch your ambitions to respond to challenges that emerge along the way.

The plan portion of your proposal is a living document that will almost certainly change as you progress through the capstone. (Note: Your committee may ask for regular revisions of this plan.)

Your proposal should include most of the following (the particular items to include may depend on your capstone):

Goals/Vision

- Your goal or goals in completing this project/thesis
- The problem or opportunity you will be working on
- Stakeholders and beneficiaries of your research; this may include specific fields, subfields, or applications

Criteria

- Definition of minimum, expected, and aspirational (i.e., the best possibly achievable) levels of success
- Definition of "quality" with explanation of you will measure it (metrics)
- Definition of your target(s)

Positioning Your Capstone

- What existing systems/research are similar or related to your proposed system? (Note: There are *always* existing versions, even if these are analogues; i.e., they may not be software systems.)
- What do you expect to borrow, adapt, or otherwise take from existing systems and relevant research?

- How is your system different from these systems? (This is your "value proposition," which argues that your capstone is worth doing.)
- How will this capstone demonstrate your competence in computer science and software engineering?
- Define central concepts or terms.
- If your work is part of a group or collaborative project, position your contributions within the larger project; this could be done via a statement such as:

This project is part of a larger group project [to ___/OR description], under the direction of _____ at the University of Washington Bothell during the [quarters]. [OPTIONAL next sentence to extend description] The project team include[s/d] [names]. My responsibilities will involve/include _____. /OR/ The goal of the current project is _____. For a full description of this team project, see Appendix X.

Plan

- Detailed milestones for key deliverables
- Explanation of how you propose to do the work, including the software development lifecycle and processes you propose to follow. (Note: Defining a process that allows you to learn and adapt to the emerging needs of your system is particularly important for success.)

Constraints, Risks, and Resources

- Key constraints
- Resources you will need for success (i.e., those things outside your control, which you must negotiate with some other person or entity)
- Risks you anticipate

Scope and Requirements

Your plan may also include text and diagrams to help clarify the scope and requirements (both functional and nonfunctional), such as

- Context diagrams
- Use case diagrams
- Use case scenarios
- Misuse cases
- Activity diagrams
- Dataflow diagrams
- Domain model

Graphics

- Charts or graphs
- Tables
- Other relevant illustrations, etc.

Evidence

- Include evidence to back up assertions you make; this can include
 - Information from previous research (yours or others')
 - Information from sources
 - Evidence from experiments you have already run
 - Reasoning by analogy to other systems
 - Your own opinion (note that, unless buttressed by some of the above types of evidence, this is typically the weakest and least compelling)

Format

- A cover sheet (see template)
- Readable 12-point font
- Single spaced
- 1-inch margins
- Minimum length of 3 pages, maximum length of 6 pages (excluding cover sheet and references)

Cover Sheet Template for MS Project Paper

TITLE OF PROJECT

YOUR NAME

A Capstone Project Proposal
submitted in partial fulfillment of the
requirements of the degree of

Master of Science in Computer Science & Software Engineering

University of Washington

DATE

Project Committee:

NAME, Committee Chair

NAME, Committee Member

NAME, Committee Member

Cover Sheet Template for MS Thesis

TITLE OF THESIS

YOUR NAME

A Masters Thesis Proposal
submitted in partial fulfillment of the
requirements of the degree of

Master of Science in Computer Science & Software Engineering

University of Washington

DATE

Project Committee:

NAME, Committee Chair

NAME, Committee Member

NAME, Committee Member