



Guidelines for Proposal Defense:

The purpose is to provide general guidelines for students and advisors to prepare a successful proposal. Specifics are left to individual advisors to maintain standards and quality of the research.

In general, it is expected that at this stage, students have completed about 60% to 65% of their research which should have produced one or more peer reviewed quality publications related to their dissertation as first author with their research advisors. Students should always consult with their advisor regarding adequate progress and preparation for the proposal defense. Individual advisors may have customized requirements based on the nature of the work; the field of research; and other expectations.

Prepare the proposal under the supervision of your advisor. Once the dissertation proposal has been read and approved by your advisor, the student can then provide copies to the dissertation committee members and schedule the dissertation proposal presentation (at least two weeks' notice).

A well-prepared proposal consists of the following sections. The exact contents and structure of the proposal may depend on the specific topic and should be prepared in consultation with the student's advisor. The following is derived/borrowed from [CS-BYU Handbook](#):

Abstract – *This section provides a short summary of the proposal.*

Introduction - *This section provides the reader with enough information to understand and appreciate the thesis statement. This includes giving the motivation for the research, defining terms and formulating the problem. Often, subsections labeled "Background" and "Motivation" will be included in this section. This section typically provides answers to the questions "What problem do you want to solve?" and "Who cares about this problem and why?" The Background subsection could contain the area overview discussing the broader research area.*

Related Work – *This section contains a survey of the literature directly related to the problem you are trying to solve (i.e., thesis statement) and should demonstrate to your readers that you understand the context of your work. This is a place for you to position your contribution to your specific research area relative to other work that has been done, and to state how your work builds on the previous work. In most cases there will be only a small overlap between the papers discussed in this section and the papers related to the broader research area. This section answers the question "What have others done to solve the problem and why is this inadequate?" The area overview could be included in the Related Work section, but, in this case, add subsections (e.g., "Research-Related Work" and "Research Area Overview") to distinguish the type of related work.*

Thesis statement – *A clear and concise statement of what is to be demonstrated or developed in your dissertation work. A good thesis statement makes a specific claim that your readers care about. Ideally, your introduction will give your readers the background they need to understand your thesis statement and to conclude that it matters.*

The following are examples of good thesis statements from proposals in the BYU Computer Science department:

- *Extending neural networks through classification-based training will provide more accurate solutions, while at the same time avoiding the main pitfalls of back propagation networks.*

- *It is possible to build a semantic annotation system that is resilient to variety in web page layouts, has a faster execution speed, and has better accuracy on a large number of web pages than current semantic annotation standards.*
- *Machine learning techniques can be used in a behavioral animation system to produce cognitive models that are quick to execute, that allow virtual characters to adapt due to interaction with human users, and that can be programmed in significantly less time than current systems.*

Project Description – *This section describes the work you have accomplished toward your goal so far and your preliminary ideas on how you might solve the remaining problem and the anticipated contribution your research will make to the field of Computer Science. This section should convince your committee that you are qualified to pursue the research and are on track to eventually be able to objectively and convincingly defend your thesis statement. This section answers the question “What is your proposed solution to this problem?”; “what have you done toward the solution so far?”; “what remains to do to accomplish your proposed solution?”*

Validation – *This section describes the methods you have and will use to validate your proposed solution. This section answers the question “How can you demonstrate that this is a good solution?”*

Dissertation Schedule – *This section contains a proposed schedule for the completion of your dissertation work. In addition, this section may contain the (proposed) titles of the additional papers that will be published from this work, along with potential submission dates and venues. You may also include other appropriate research milestones.*

Bibliography - *This section contains references for cited work. References should be complete and written in a uniform style, consistent with your particular sub-area of computer science. Current journals in the student’s area can be consulted to determine appropriate reference styles.*