PhD Proposal Document Guidelines

Computer Science and Engineering University of North Texas

May 2025

This document provides general guidelines for preparing a PhD proposal in the Computer Science and Engineering PhD program. The expected length is 15-40 pages, but the requirements of the committee take precedence.

Abstract: Summarizes the entire proposal concisely within one page and should be understood by the general public. It typically includes a brief background and motivation, a clear statement of the research problem, an overview of the proposed approach, key contributions, and the anticipated impact of the work.

1. Introduction

Introduces the research topic, motivates the problem, and outlines objectives of the research. This chapter may include the following content:

- A clear articulation of the problem being addressed
- Motivation for the work: Why is this problem important?
- High-level objectives or research questions (i.e., thesis statement)
- A summary of the proposed solution
- An outline of the structure of the remaining document

2. Background and Related Work

Provides context for the research and demonstrates awareness of the existing research landscape.

This chapter may include the following content:

- Theoretical foundations, models, or frameworks relevant to the research
- A review of key literature and existing approaches
- Identification of gaps, limitations, or open problems in current work
- A discussion of how your work relates to and differs from prior research

3. Research Methodology (or Proposed Approach)

Describes in detail how the research problem will be addressed. This chapter may include the following content:

- The overall approach, design, or hypothesis
- Methods, models, or algorithms to be developed or applied
- Data sources, tools, or experimental environments
- Justification for the chosen methodology

• Evaluation criteria and metrics

4. Preliminary Work

Demonstrates initial feasibility and understanding--typically through a description of published or in-progress work. Depending on the number of publications and their thematic coherence, this section may be divided into multiple subsections.

This chapter may include the following content:

- A summary of any initial results, proofs-of-concept, prototypes, or experiments
- Challenges encountered and how they were addressed
- Lessons learned and how they inform the remaining work

5. Remaining Work

Outlines the remaining tasks required to complete the dissertation. This chapter may include the following content:

- Planned research activities and major milestones
- A timeline for completion (e.g., Gantt chart)
- Potential risks or dependencies and their mitigation strategies

6. Merit and Impact

Justifies the significance and value of the proposed research. This chapter may include the following content:

- Expected contributions to theory, tools, systems, or practices
- Potential applications and beneficiaries of the research
- Broader impacts (e.g., on science, technology, industry, or society at large)

7. References

Provides academic grounding and credit to prior work. This chapter should include:

- A complete and properly formatted bibliography
- A consistent citation style (e.g., IEEE, ACM)
- References that support claims made throughout the document