



Research Methods in Science in Engineering

Defending Your Research

Slide 1

Outline

- Introduction
- Ph.D. Dissertation Document
- Ph.D. Defense Presentation

Slide 2



Introduction

Purpose of the Dissertation

Your dissertation is a complete summary of your research. It will include background, methods, research, discussion of results, and future work. It should clearly justify that you deserve your degree.

Things your committee must ensure:

- Is your research new enough?
- Is your research significant enough?
- Is your research difficult enough?
- Is your topic well defined?
- Is your plan achievable?
- Can/will success be measured?

Ph.D. Dissertation Document

Dissertation Outline

- Introduction Chapter
 - Problem statement or hypothesis
 - Novelty and significance
 - Research summary
 - Outline of document (optional)
- Methods Chapters
 - Describe the methods and tools you used for your research
- Research Chapters
 - Describe your research methods and results.
 - Likely copy/paste from your publications.
- Conclusion
 - Summarize your research and results.
 - Describe what future work could be done.
- Appendix
 - Include any information or summaries that are helpful to your research or you want to have for later work.
 - Include any long and detailed derivations that would distract from the flow of the main document.



Ph.D. Defense Presentation

Defense Presentation Outline

- Introduction
 - Topic of Dissertation (1 slide)
 - Significance of the Research (1 slide)
 - Research Summary (1 slide)
 - Scientific Contributions (1 slide)
- Background
 - Provide 1-2 slide summaries of any background topics a person will need to understand your research.
 - State-of-the-Art. Summarize a comprehensive literature search.
- Research Summary
 - Scope & Objectives (1 slide)
 - Research Methods (1 slide per method)
 - Tell story of your procedures, experiments and results (10's of slides)
- Conclusion
 - Summary: topic, significance, novelty, results (1 slide)
 - Future Work
 - Acknowledgements: funding source, committee members, etc.
 - Publications, posters & presentations (include pending and in progress)
 - References (if not provided on each slide)
- Appendix (Optional)
 - Include anything you wish to have on you to help answer questions.

