A Representative Thesis Outline

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Declaration of Academic Honesty
Zusammenfassung
Abstract
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1. Introduction
... should include the following:
  • motivation (why is this problem interesting? offer examples)
  • research challenge (what is the obstacle to be overcome?)
  • novelty (was this problem already solved?)
  • anticipated impact (how does solving this problem impact our world?)

2. Scientific Background
... should include the following:
  • definitions / technical terms
  • theoretical foundations / principles
  • descriptions of algorithms, hardware, software, and/or systems employed

3. Research Problem
... should include the following:
  • a succinct, precise, and unambiguous statement of the research problem or question to be solved
  • goals and subproblems that will be explored, including the scope of the thesis (i.e., what is in and out of scope)

1 Note: Chapters 3-5 are the core of the thesis, whereas Chapters 1, 2, 6, and 7 provide context. The major contributions of the scientific work should be in Chapters 4 and 5. Please note that this structure solely serves as a guideline and should be customized accordingly. In particular, the generic chapter titles should be replaced with more specific ones, where appropriate (e.g., Chapter 4).
4. The Specific Solution Approach
... should include the following:
   • research methodology (e.g., prototype and experiments, case study, literature survey, theoretical analysis)
   • derivations and descriptions of algorithms, hardware, software, and/or systems developed

5. Experimental (and/or Analytical) Evaluation
5.1 Experimental Setup
... should include the following:
   • define experimental data and workload(s)
   • discussion about the selection and interpretation of the evaluation metrics
   • discussion about the computing environment, including hardware, software, tools

5.X For each Experiment Class X: Design and an Interpretation of the Results
... should include the following:
   • which experiments will be conducted and why?
   • for each experiment, what are objectives, baselines, and expected results?
   • description and an interpretation of the experimental results
   • explain any anomalies or any unexpected behavior

6. Related Work
... should include the following:
   • state-of-the-art solutions to the problem
   • related work and a differentiation of your contributions to the related work

7. Conclusion
... should include the following:
   • problem restated and a brief summary of the methodology
   • student contributions (e.g., survey, open-source software, journal publication)
   • a brief summary of the findings and results
   • limitations and generalizability of the findings and results
   • lessons learned
   • recommendations for future research

Bibliography
Use the ACM Bibliography Style (https://www.bibtex.com/s/bibliography-style-base-acm/) to list the set of reference sources.

Appendix A. Further Details on the Solution Approach

Appendix B. Extended Version of the Experimental Results