

CS-471 Course Project Proposal

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1 Research Problem

- Updates or changes to the problem and the reasons.
 - New recent work addressing the same problem.
 - Newly discovered related and intriguing problems.

2 Questions, Hypotheses and Test

- Current status of all questions and hypotheses, such as tested, planned, stuck, not related, or abandoned.
 - New questions, for instance, anomalies encountered during experiments or literature review.
 - New hypotheses
 - Methodology details, including machine configuration, software usage, and benchmarks to be conducted.

3 Progress, Result and Analysis

Results may vary with the type of research question. Below are suggestions for a given type of research question:

- Metric Modeling: Include your model, analysis steps, experimental validation results, and error analysis.
- Solution Proposal: Test results supporting your design decisions.
- Result Reproduction: Experimental findings and comparisons with previous studies.
- Workload Characterization: Measurements of metrics.
- Methodology Examination: Comparative measurements using different methodologies.

4 Challenges

- Difficulties encountered, whether in experimentation, data gathering, or literature review.
 - Assistance requests for your project.

5 Plan

- Updates on team composition (e.g., team member changes).
 - Reprioritization of questions, hypotheses, and tests.
 - Schedule adjustments (compared to the initial proposal).
 - Updates on the final goal (compared to the initial proposal).

References

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- [2] Y. Zhang, D. Meisner, J. Mars, and L. Tang, “Treadmill: Attributing the source of tail latency through precise load testing and statistical inference,” in *2016 ACM/IEEE 43rd Annual International Symposium on Computer Architecture (ISCA)*, 2016, pp. 456–468.
- [3] H. Kasture and D. Sanchez, “Tailbench: a benchmark suite and evaluation methodology for latency-critical applications,” in *2016 IEEE International Symposium on Workload Characterization (IISWC)*, 2016, pp. 1–10.
- [4] J. Li, N. K. Sharma, D. R. K. Ports, and S. D. Gribble, “Tales of the tail: Hardware, os, and application-level sources of tail latency,” in *Proceedings of the ACM Symposium on Cloud Computing*, ser. SOCC ’14. New York, NY, USA: Association for Computing Machinery, 2014, p. 1–14. [Online]. Available: <https://doi.org/10.1145/2670979.2670988>