

Individual Meeting
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1 What is the current status?

1.1 What has been done?

I have developed a simple example and workflow for getting started using a quantum computer. The paper has a demonstration of how to build a quantum circuit and how a quantum circuit can modeled with an intermediate representation (QASM). It is shown how to use the quantum framework in a well known programming language (python). Finally I have mapped out the workflow that takes you through the execution of a quantum code.

1.2 What has been partially done?

A comparison of quantum and classical programming. This is difficult because everything you do with quantum code looks like classical code, but the fundamentals are completely different.

Additionally I have started on the references, but need to spend more time formatting the references correctly.

1.3 What has not been done yet and why?

Benchmarking has not been done and will probably be abandoned. The initial scope of the project was too broad and the timeline was too optimistic. It will require learning a good deal more about quantum computers to be able to implement benchmarks.

2 What is your plan to complete the term paper?

2.1 What are the steps for completing the term paper?

Complete writing the examples. Complete comparison of classical and quantum computing.

2.2 What is the timeline?

Week of April 10: Draft a comparison of digital computation and quantum computing.

Week of April 17: Complete references.

Week of April 24: Revise the paper and slides.

2.3 What is the plan B?

No plan B because the paper only needs to be completed and no additional research will be done.

3 What are the constraints or limitations you are currently facing in finishing up the term paper?

3.1 What are the resources you are still looking for?

None

3.2 What are the problems you are not sure whether solutions can be found in 2 to 3 weeks?

Create a coherent explanation of the similarities and differences between quantum computation.

3.3 What are the assumptions for the conclusions you made in your term paper?

Current software engineers will need a way to anchor their understandings of quantum computing using classical computing.