PROJECT STATUS REPORT
NORTHROP GRUMMAN – QUANTUM AI AT THE EDGE
AS OF: 02/20/2022

PROJECT STATUS SUMMARY

Percent Complete: 25%

Scope	Schedule	Cost	Risks	Quality

Risks

The sponsor has communicated that this project is fully R&D and exploratory by nature. There is a high probability that the project will not actually work. However, we will certainly be doing our best. If the quantum piece fails to show improvements over traditional models, then traditional models will be used for inference on the emulator.

WORK PLANNED FOR LAST WEEK

We began researching quantum and classical algorithms to run on the Vitis Emulator. We started coding and began our implementation for the project. The quantum team has been researching quantum algorithms that are best suited for running for inference on the emulator. The classical ML has been researching SVM's and MLP's using TensorFlow and other standard python machine learning tools.

WORK COMPLETED LAST WEEK

We have now split into two teams of four, the classical ML team and the quantum ML team. The quantum ML team has been diligently researching quantum algorithms best suited to this problem. They have also been doing tutorials with Qiskit and Cirq to better understand their development tools. We reached out the sponsor seeking further information about what they are looking for on the quantum side of things and what our threshold of failure should be on the quantum side because there is a high probability that the quantum side would not work to begin with. The classical ML team began researching how to implement SVM's and MLP's in TensorFlow because that is the library that will most easily translate to the Vitis emulator.

WORK PLANNED FOR NEXT WEEK

We also plan to continue our research, coding, our implementation for the project. The teams are beginning to hit their respective strides as they become more familiar with the data and their development tools. Both teams will implement a primitive SVM. Additionally, we will be using models from the Vitis Model Zoo to figure out how to deploy models onto the emulation platform. Two team members have also volunteered to undertake some dataset creation as well.

OPEN ISSUES

- They are currently no open issues.

DELIVERABLES AND MILESTONES

Milestone	WBS	Planned	Forecasted	Actual	Status
Initial development environments	002	10/11/2021	10/11/2021	10/12/2021	Complete
Supplemental development environments	004	10/30/2021	10/30/2021	10/31/2021	Complete
Setup Vitas	006	10/21/2021	1/15/2021	1/14/2021	Complete
Solution Design	008	01/31/2022	02/18/2022	TBD	Incomplete
Deliverable	WBS	Planned	Forecasted	Actual	Status
Setup git branches	003	10/3/2021	10/3/2021	10/3/2021	Complete
Project Charter Updates	001	10/14/2021	10/15/2021	10/14/2021	Complete
Requirements Document	005	10/21/2021	11/08/2021	11/15/2021	Complete
First Use Case	007	10/21/2021	10/24/2021	10/24/2021	Complete

OPEN CHANGE REQUESTS

Change Request Name	Change Request Number	Request Date	Current Status
NA			
NA			

KEY PERFORMANCE INDICATORS (KPI'S)

Schedule - Project is on schedule
Schedule Variance (SV): +/- 2 days

Cost - Project is on budget
Cost Variance (CV): $0