

# PROJECT STATUS REPORT

## NORTHROP GRUMMAN – QUANTUM AI AT THE EDGE

AS OF: 04/010/2022

### PROJECT STATUS SUMMARY

Percent Complete: 65%

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 planned to figure out how to run our quantum models on a physical quantum computer. Thankfully, IBM lets engineers to this for free via IBM's Quantum Lab. We were able to successfully create a shared account for the group as well as get our API token. We did some refactoring to ensure the model can run on the quantum computer as opposed to the simulator we have been working with up until now.

### WORK COMPLETED LAST WEEK

The two groups have now merged back into a single team. The classical SVM and MLP are done, we are finishing our analysis of the classical models and then they will be fully done. The quantum SVM is done, and the MLP is close to being finished. We also acquired an API key for IBM's quantum lab which will allow us to run our quantum models on a legitimate quantum computer.

### WORK PLANNED FOR NEXT WEEK

The team will start refactoring the code so that our quantum models can run on one of IBM's actual quantum computers. Additionally, we are working on wrapping up our analysis of the classical models. Once the models are all tidied up, we will have a comparison and analysis of the classical model's vs the quantum simulated models, and the actual quantum models.

**OPEN ISSUES**

- There are currently no longer any 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	2/24/2022	Complete
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