**Project Status Report**

**Northrop Grumman – Quantum AI AT The Edge**

**As Of: 03/06/2022**

**Project Status Summary**  Percent Complete: 45%

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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

The classical team continued working on improving the accuracy of the classical MLP. The quantum team has mostly finished implementing their quantum SVM. However, they have some model tuning that they are still currently working on. The MLP on the classical side is now finished and ready for export.

# Work Completed Last Week

The classical team completed their implementations of the MLP and SVM machine learning models. The SVM is now hitting 95% accuracy with the MLP hitting ~90%. The quantum team has nearly completed their quantum SVM; however, they expressed that they would like some additional time to fine tune the model so that it gets a higher accuracy.

# Work Planned For Next Week

The classic MLP model will be exported and then imported into Vitis to be used for inference on the Vitis embedded emulator. Since our sponsor has expressed their primary interest is quantum, we have redelegated two members of the classical team to the quantum side. The classical team is now a skeleton crew until the model is successfully running on the emulator. Once we achieve this, we will have met out baseline deliverable with our sponsor. After we can run the classical MLP on the emulator the entire team will be working on the quantum models for the rest of the semester per the expressed interests of the sponsor.

# 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 | 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