

Summary

I propose to commission a data acquisition system for the $\text{NO}\nu\text{A}$ test beam program during the summer of 2018, in preparation for data-taking the following winter. The DAQ for the $\text{NO}\nu\text{A}$ test beam will have substantive differences with the existing $\text{NO}\nu\text{A}$ DAQ. Events collected with the $\text{NO}\nu\text{A}$ test beam will require external information such as digitized time-of-flight and wire chamber information of incoming particles such that particle identification and momenta can be matched with corresponding hits in the $\text{NO}\nu\text{A}$ modules. As the $\text{NO}\nu\text{A}$ DAQ is unable to handle these data fragments without major modification, we have created a new artdaq instance to handle beamline detectors. These data streams are merged with $\text{NO}\nu\text{A}$ module data offline using GPS timestamps. This beamline detector DAQ greatly benefits from the experience of LArIAT by making similar hardware decisions and cloning various software modules.

This fellowship would also support my new role as the leader of the $\text{NO}\nu\text{A}$ detector control systems group, maximizing time spent with Fermilab-based experts.