Elise Chavez

- *I am a 5th year graduate student at UW-Madison*
- *Mentors: Tulika Bose (UW-Madison), Burt Holzman (Fermilab), Maria Acostas-Fletchas (Fermilab)*

My TAC-HEP R&D project:

I work on the Elastic Analysis Facility (EAF) at Fermilab. The EAF is designed to make analysis faster through user friendly notebook interfaces that are configured for a researcher's experiment and supports distributed computing through HTCondor and dask. I work specifically on improving this HTCondor and dask communication through a dask gateway extension named HTCdaskgateway. I also work on benchmarking the EAF and ensuring EAF involvement in the IRIS-HEP AGC. I also generally work on other support and improvement of other EAF applications and testing the EAF's usability through various analysis pipelines.

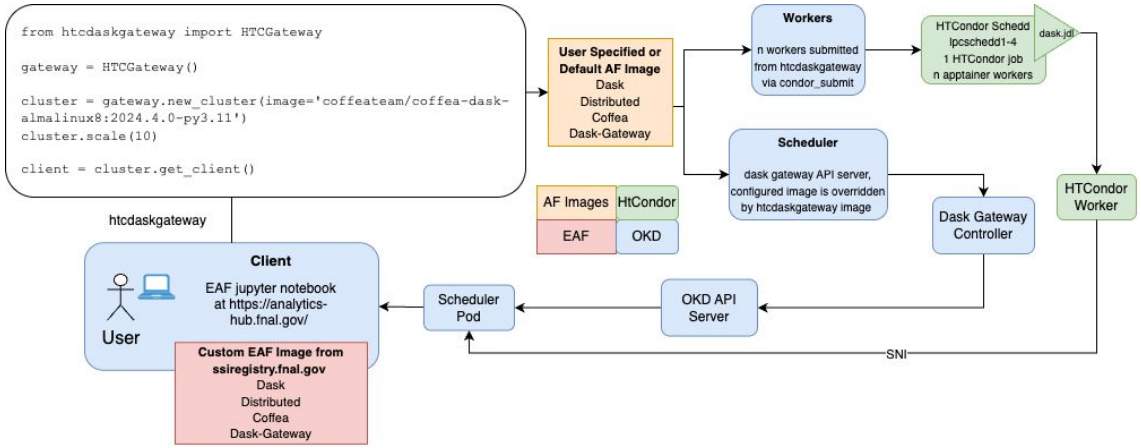
Accomplishments:

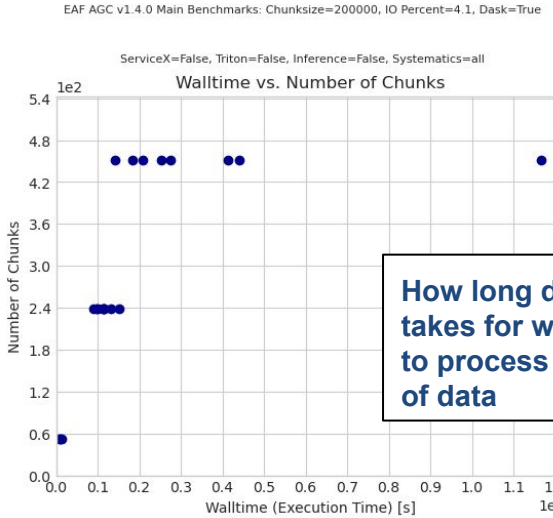
- Learned proper software development practices
- Improved skills in python, git, kubernetes (OKD)
- Successfully adapted AGC Notebook to EAF
- Added several features to HTCdaskgateway
- IRIS-HEP Demo Day Video
- European Strategy for Particle Physics 2026 update White Paper to be submitted March 31st
- Successfully completed first pass at benchmarking v1.4.0 AGC on EAF
    - US CMS AF Talk

Next steps:

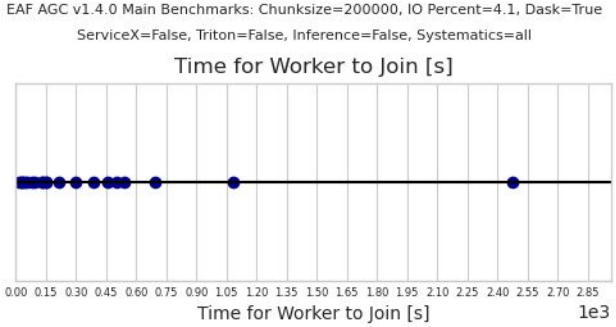
- Generalize HTCdaskgateway for other institutions
- Add better error checking to HTCdaskgateway
- Tutorials on the EAF to boost CMS user base
- Improve benchmarking plots
- High throughput test to find weak points and bottlenecks of EAF

Example Benchmark Plots and Diagram of HTCdaskgateway





How long does it takes for workers to process chunks of data



HTCdaskgateway Time for Workers to join

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CMS

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