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Samantha L Tezak

Where I am coming from...

PhD in Physics, Built and programmed flight computer

Post-doc at CERN, Installed and calibrated trigger electronics

HEP Staff at ANL, Scaled HEP software on Mira and studied the use of semantic segmentation for detector-level outputs

ALCF Staff, Scaling and porting apps, studying containerized IO performance, Workflows, Building TF/PT/HVD from scratch on ALCF systems, scaling of AI apps, optimizing AI data pipelines, lots of training activities



Future Looking Interests

Portability will be very important for future science apps, I'm interested in working with researchers to use frameworks like Kokkos and SYCL to run everywhere. The more users for these frameworks, the better the support will be long term.

AI in Production is another interest of mine. At least in HEP, AI is still very much in the R&D phase with very few cases of it being used in production software. I'm interested in the challenges that come with this: periodic retraining with new data, workflows that integrate simulation & AI, characterizing systematic uncertainties related to AI methods.

AI in System Ops will simplify operating complex systems like accelerators, fusion reactors, and so much more. There are many components in HEP detectors that require analytical calibration to provide uniform responses, I'm interested in how AI can be used to do this in real-time. An ALCF example would be using this for system monitoring and failure prediction.

Diverse Pipeline Development through the offering of CV building opportunities for underserved communities in our area.