Intro to the AI Infrastructure Workshop

Nhan Tran, Burt Holzman
coordinating with CSAID and AI Project Office

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Fermilab Community standards

Please comply with the [Fermilab Statement of Community Standards](#)

1. **Build trust and credibility:** Fermilab's success depends on the trust and confidence we develop with one another, and with our stakeholders and partners, including the U.S. Department of Energy, the public, and the global scientific community. As we engage in business on behalf of the Laboratory, we are each ambassadors of Fermilab. Our reputation is determined by our words and our actions. We gain credibility by fulfilling our commitments and, when appropriate, acknowledging when we will not and taking responsibility for the consequences.

2. **Communicate openly and honestly:** Every member of the Fermilab community is welcome, and each is encouraged, to communicate their ideas and/or concerns. We seek to promote open communication, which emphasizes, listening, creativity, growth and development, collaboration, and inclusivity. This culture encourages respectful discussion and debate for mutual benefit.

3. **Respect one another:** Members of the Fermilab community shall be able to work in a safe and welcoming environment where everyone is treated with dignity and respect. Peer-to-peer or supervisory relationships that interfere with an individual's research or work performance, limit access to educational experiences and career opportunities, or adversely impact an individual's well-being are unacceptable.

Vision for this workshop

- Exploration and deployment of AI at Fermilab is growing at a rapid rate

- How do we:
  - Give folks the resources to develop AI algorithms more easily/rapidly
  - Transition next generation algorithms from R&D to production to science
  - Develop standards and common methods across experiments & efforts

- Goal for this (series of mini-)workshop:
  The principal goal of this workshop is to bring stakeholders (experiments, divisions) and service/facility providers together and understand what AI for production/operation workflows will look like in the near term for both training and inference. In particular, stakeholders should discuss their software and hardware needs, including resource requirements if possible. CSAID will use the product of this mini-workshop to plan resource acquisition, deployment, and developer effort.

  - Practically, we should figure out how/where to deploy new GPUs :)

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Today

- This is Part 1, implying at least one more part…
  - Practically, we should meet semi-regularly to present findings, collect feedback, and course-correct

9:00 AM → 9:10 AM **Intro, scope, goals**
Speakers: James Amundson (Fermilab), Nhan Tran (FNAL)

9:10 AM → 9:25 AM **Fermilab facilities and infrastructure**
Speaker: Kenneth Herner (Fermilab)

9:25 AM → 9:45 AM **CMS needs**
Speaker: Kevin Pedro (Fermilab)

9:45 AM → 10:00 AM **Accelerator Directorate AI/ML Resource Estimates**
Speaker: Tia Miceli (Fermilab)

10:00 AM → 10:15 AM **Intensity frontier experiments (except DUNE) needs**
Speaker: Lisa Goodenough (Fermilab)

10:15 AM → 10:30 AM Coffee Break

10:30 AM → 10:45 AM **DUNE needs**
Speaker: Tingjun Yang (Fermilab)

10:45 AM → 11:00 AM **Cosmic Frontier needs**
Speaker: Brian Nord (Fermilab)

11:00 AM → 11:15 AM **Theory needs**
Speaker: George Fleming

11:15 AM → 11:30 AM **Emerging Technology Directorate needs**
Speaker: Gabriel Perdue (Fermilab)

11:30 AM → 11:50 AM **Experiment Software**
Speakers: Chris Green (FNAL), Kyle Knoepfel (Fermilab)

11:50 AM → 12:10 PM **Discussion**

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