

Request for One-Page Submissions on the Dedicated AI/ML Test Facilities Workshop

SLAC National Accelerator Laboratory, CA July 15-17th, 2026

The goal of the upcoming workshop is for participants to develop a community-driven understanding of what would be needed to create a fully AI/ML integrated accelerator test facility and what the benefits of such a facility would be to the broader scientific community (spanning accelerator/beam physics, photon science, robotics, AI/ML and advanced computing research, and beyond). The findings will be summarized in a community white paper.

To help prime the conversation in July, as well as offer an opportunity for those unable to attend to contribute, we kindly request submissions of up to one page in length prior to the start of the workshop. As a guide, we provide here a list of topics for you to think about and provide your thoughts on. Brevity is encouraged, and bullet points are acceptable. We do not request that you limit your responses to only these topics.

- What is needed for a dedicated AI/ML test facility?
 - Hardware and/or software infrastructure
 - What barriers are there (if any) to AI/ML research at accelerators? What would it take to lower them?
 - What are the staffing needs to support AI/ML, in terms of both skills and availability?
 - Are there technical capabilities or schedule capabilities that would enable more effective testing and R&D of AI/ML at accelerators?
 - Are there modes of operation that would facilitate AI/ML research? How should it be organized? User facility or test facility? Kaggle-like competitions? Campaigns defined by the community?
 - What capabilities are the end users of the beam asking for?
 - Are there experiments that users would like to do but are challenging from a technical or schedule perspective that AI/ML can address?
- What challenges do you face when trying to implement AI/ML at your facility?
- What non-AI/ML science (e.g. accelerator, photon, detector science) can (best) be tackled with AI/ML?
- What is the intersection between accelerators and AI/ML research more broadly?
 - What are the challenges of testing AI/ML methods in real world physical systems?
 - Where do you see opportunities for accelerators to help impact AI/ML research? (e.g. *high-dimensional, partially observable, continuous state/action spaces, availability for invasive testing, physics models available to integrate, time-varying + need for UQ*)
 - Where could accelerators help with large scale robust AI/ML for complex system control and similar topics? What would be needed for accelerators to be effective test beds in practice for this?
 - Is there value in terms of educational outreach? (e.g. making accelerators more accessible to CS/AI/EE students)