Stanford FLAME AI Workshop

Future Learning Approaches for Modeling and Engineering

Dates: Summer 2023 | Venue: Hybrid/Virtual [**https://flame-ai-workshop.github.io/**]
Contact: **flame.ai.workshop@gmail.com**

Mission

To foster a dynamic forum for exchanging ideas, data, methods, and models related to ML techniques for combustion, turbulence, and fluid dynamics - fields crucial to the development of energy, propulsion, climate, and safety systems.

Agenda

1. Lectures and talks will be given by AI/ML experts within Stanford and industry partners from the Greater Silicon Valley area.
2. Practical exercises* and tutorial sessions will be held to tackle generative modeling challenges in combustion, turbulence, and fluid dynamics .

* The outcomes of these practical exercises will be compiled towards a collaborative publication.

Eligibility Criteria

We invite Combustion, Fluid dynamics, Computational, or AI/ML researchers worldwide to join us at this virtual/hybrid workshop. Sign up at **https://flame-ai-workshop.github.io/** for future info on dates and technical program.

Fundamentals of data-driven tools

What are the modern ML tools (Torch, Tensorflow)?
How do I train on multi-GPU systems?
How do I load data efficiently?

Generative Machine Learning

What are the popular generative ML models?
How do I train and test generative ML for combustion, turbulence, and fluid dynamics?

Physics-informed Machine Learning

How do I improve ML with my domain expertise?
Can I manipulate data, models, and optimization schemes with this expertise?

Benchmarking AI for Science

How do I systematically test my AI/ML ideas?
How do I ensure fair evaluation of my ML models?

Apply here:

FLab | Stanford ENGINEERING

HAI Stanford University Human-Centered Artificial Intelligence

Lead organizers
Prof. Matthias Ihme (Stanford University, SLAC National Accelerator Laboratory), Wai Tong Chung (Stanford University, Stanford Institute for Human-Centered AI)