The Inaugural Keystone Astronomy & AI (KAAI) Colloquium

SIMONS FOUNDATION

Prof. Joshua Bloom (U.C. Berkeley)

Time-Domain Astrophysics, Accelerated with AI

The growing corpora of streaming, multimodal astrophysical data taxes our ability to use traditional inference frameworks for discovery and insights. Identifying computational and human bottlenecks in such frameworks becomes an invitation to employ performant AI approaches instead. Yet despite successes in post-data collection analysis with AI, we are only beginning to realize its full potential across the broader scientific endeavor. From real-time control, to survey optimization, there is tremendous potential for AI to improve the upstream efficacy of data collection. Likewise, there are exciting opportunities downstream from data for AI-enabled hypothesis generation and human-centered exploration. I will ground this talk with specific examples of ongoing work in simulation based inference, self-supervised multi-modal foundation models, Rubin/LSST active optics, and a reinforcement-learning (RL) approach to optimizing LSST target of opportunity observations of gravitational wave events.

Monday April 27 3:30 pm Wean Hall 8330 CMU