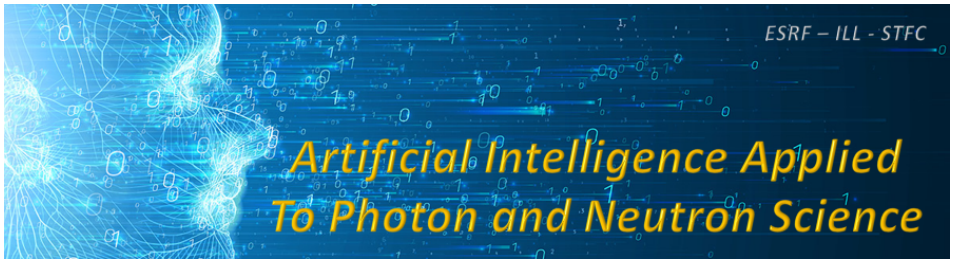

Contribution ID: **102** Type: **not specified**

DOE's Center for Advanced Mathematics for Energy Research Applications (CAMERA): Artificial Intelligence, Machine Learning, and Experimental Facilities: Present and Future

Tuesday, 12 November 2019 16:00 (50 minutes)

The Center for Advanced Mathematics for Energy Research Applications (CAMERA) is a US Department of Energy-wide institute focused on building and deploying mathematical algorithms to accelerate our ability to understand data coming out of synchrotron light sources. CAMERA, consisting of interdisciplinary teams of applied mathematicians, statisticians, signal processors, computer scientists, software engineers, physicists, chemists, biologists, and beam line scientists, works in a variety of areas, including ptychography, tomography, SAXS/WAXS/GISAXS, single particle imaging, fluctuation scattering, XPCS, real-time experimental feedback, computer vision and image processing, machine learning for materials analysis and image extraction, and real-time autonomous optimized experiments.

This talk with discuss some of those topics, as well as try to address the questions:
(1) "What will experimental facilities look like in the future?";
(2) What role will AI and machine learning play in accelerating our abilities to maximize experimental facilities"; and
(3) "What will we have to build to make this happen?"

Presenter: Dr SETHIAN, Jamie (LBNL/UC Berkeley)

Session Classification: Afternoon 2