2018 ALS User Meeting Workshop

Beamline Controls in Python with Xi-cam, Bluesky, and PyDM

October 4, 2018
8:30 AM - 12:00 PM

Workshop Organizers

Ronald J Pandolfi, CAMERA, LBNL
Guillaume Freychet, ALS, LBNL

Workshop Abstract

With increasing interest in beamline automation and reactive, data-driven acquisition, support software to complement the LabView environment at the ALS is in development. In collaboration with CAMERA, ALS, NSLS-II, and LCLS, a Python-based controls interface will be demonstrated that combines the capabilities of Xi-cam (LBNL), Ophyd/Bluesky (BNL), and PyDM/Typhon (LCLS). This suite of open-source tools provides a graphical, scriptable, and customizable environment for user-facing controls. Xi-cam is available for download online.

Agenda (Tentative)

Day 1 - Room 2-400F Thursday October 4, 2018

Chair: Guillaume Freychet

8:30 AM *Beamline Controls in Xi-cam*
Ronald J Pandolfi, CAMERA, LBNL

9:00 AM *Neural networks toward beam size prediction and control*
Shuai Liu, University of Berkeley

9:15 AM *Workflow development in Xi-CAM*
Harinarayan Krishnan, CAMERA, LBNL

9:30 AM *ALS Beamline Controls System*
Kevan Anderson, Advanced Light Source, LBNL

10:00 AM Break

Chair: Ronald J Pandolfi

10:30 AM *PYDM: Python User Interfaces and Applications*
Hugo Slepicka/Theodore Rendahl, LCLS, SLAC

11:00 AM *Autonomous X-Ray Scattering Experiments through Surrogate Models and Optimization*

Marcus Noack, CAMERA, LBNL

11:30 AM *Hackathon De-briefing and Demonstration with Hardware*
Ronald J Pandolfi, CAMERA, LBNL

12:00 PM Lunch at ALS Patio