

Tracking of Orthopaedic Instruments in 3D Camera Views

- Surgeons require dozens of X-ray images to establish the relationship between the instruments they introduce and the complex anatomy. This project will focus on tracking the instruments relative to the interventional imaging using machine learning techniques to identify the tools in 3D views.
- **What Students Will Do:**
 - Use deep learning to segment guide wires in 3D camera views, and
 - Determine the orientation relative to interventional imaging devices.
 - Participate in CAMP CISII meetings.
- **Deliverables:**
 - Project problem statement and proposal
 - Ground truth training data
 - Trained CNN (build and train CNN)
 - Evaluation on phantom
 - Report and presentations
- **Size group:** 1-3
- **Skills:** programming and basics of machine learning
- **Mentors:** Bernhard Fuerst, Sing Chun Lee, Javad Fotouhi
camp@jhu.edu

