2025 Cal State LA - STEM Core Summer Making, Academic prep, and Research for Transfer students (SMART) Internship Program

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Introduction:

- **Purpose: Motoneuron Reconstruction**
- Dataset: We had a large sample of images of the spine generated from micron-scale computed tomography
- Mission: Label around 2,000 slices of spinal cord
- Coding: We worked together to code something that would divide the work and send these photos to different folders
- Labeling: We had to look through these images and label the black spots with a white dot in the center

Key technologies and tools used:

- Curie: High-performance computing cluster at Cal State LA
- Python: Wrote code to separate photos into stacks and send different stacks to different folders
- Xpra: Used to remote into Curie from personal computers
- Paintera: Used to label the photos from the stacks and build the three-dimensional reconstruction

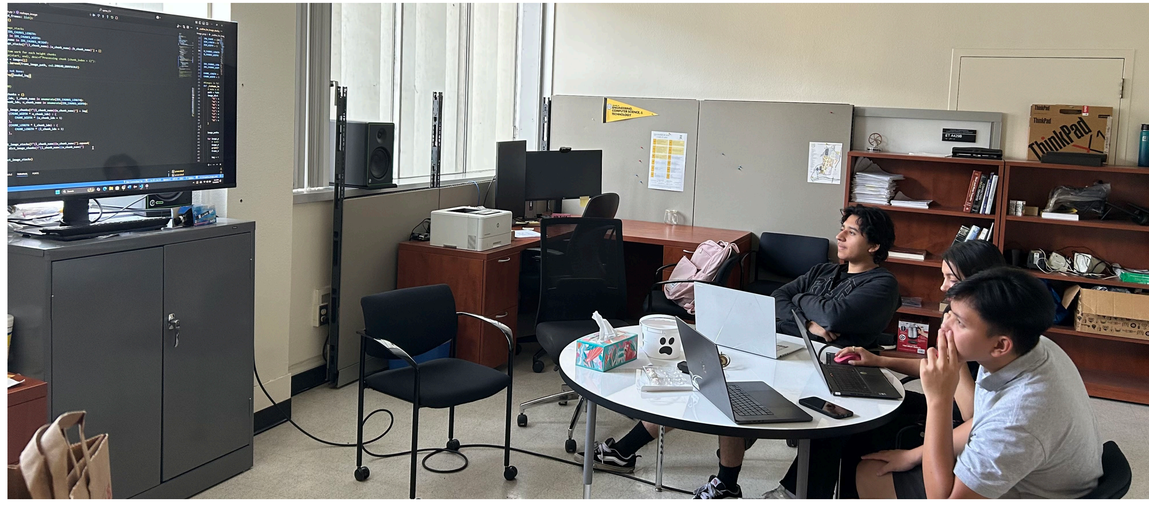

Figure 1: The team is working together to create code that will automatically divide the images into three-dimensional chunks.

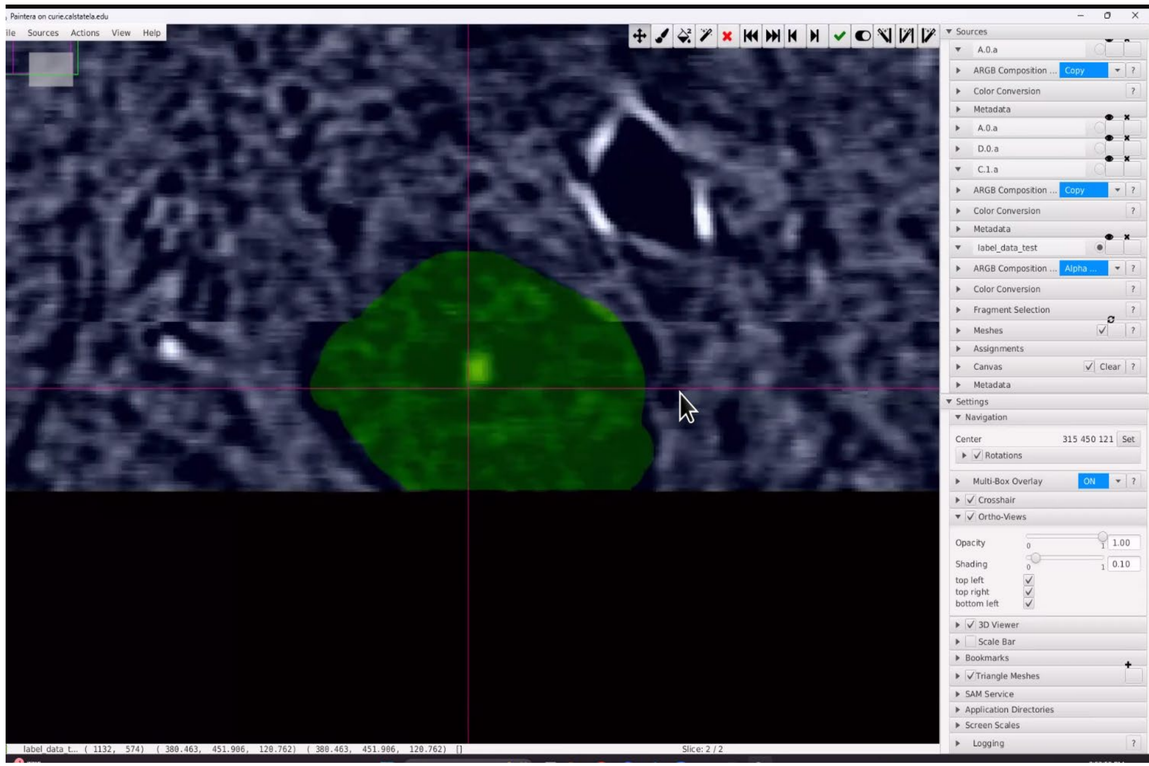

Figure 2: Labeling images of the spine using the Paintera software on Curie, the high-performance computing cluster at Cal State LA.