

ShortTitle: CoreGeo

Title: Co-registration of Minalyze geoscience datasets

Project lead and contact details:

Zane Jobe, Colorado School of Mines zanejobe@mines.edu

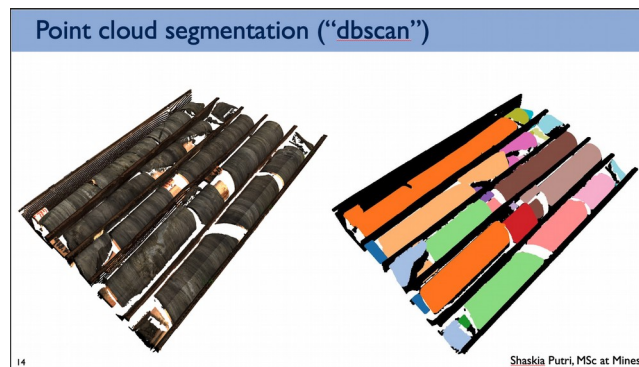
Suggested team size: 2-4

Logistics: Can work from anywhere, and free lunch on Thursdays in Berthoud!

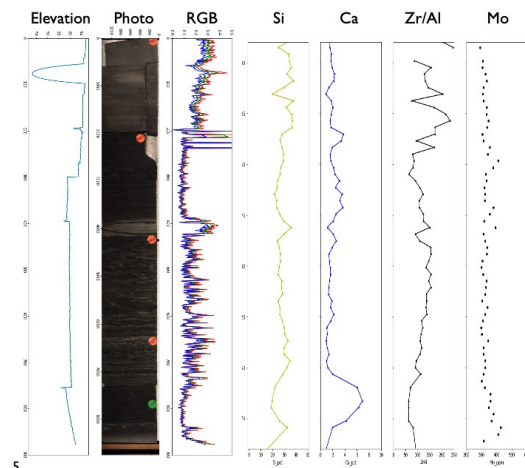
Project description: Images and quantitative measurements (e.g., elemental concentrations, mineral abundance) of “core” (a cylinder of rock extracted from the subsurface using a drill rig) can tell geologists about the amount and quality of critical minerals (e.g., lithium for batteries), hydrocarbons, and water in the subsurface. Mines has a “Minalyze” core scanner <https://minalyze.com> that automatically scans the core, producing several datasets (x-ray fluorescence, lidar, and photography). Using python, you would help build capability to coregister the different datasets from this instrument in order to enable predictions of rock ‘quality’ using machine learning.



The core scanner



segmentation of lidar point cloud data



Our first attempts at dataset co-registration in python