

ShortTitle: Segment-Every-Grain

Title: Segment-Anything-Model for grains

Project leads and contact details:

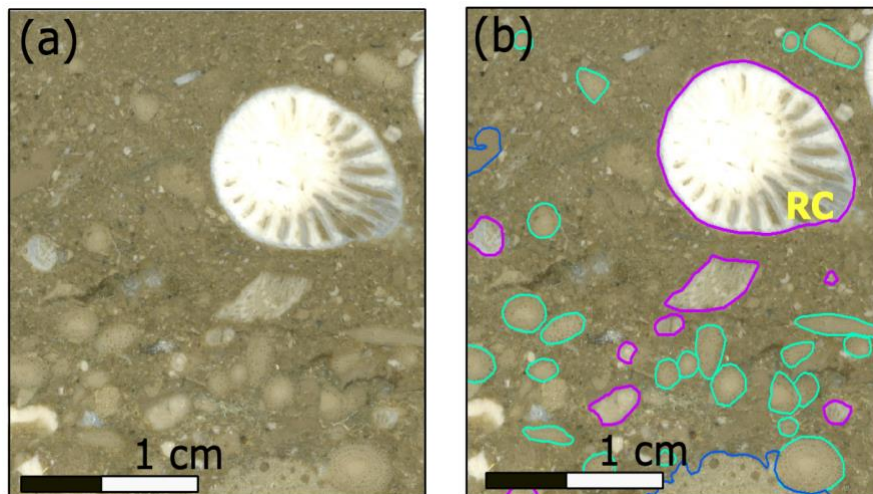
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Suggested team size: 2-4

Logistics: Can work from anywhere, with periodic meetings (and free lunch) in Berthoud 143

Project description: Understanding the size and shape of ‘grains’, or sediment particles (i.e., sand, gravel) are key factors for interpreting earth-surface processes and resources –think about using the size of boulders in Clear Creek to understand recent and ancient flood history. This project aims to collect large datasets of grain size and shape from rocks in order to reconstruct ancient earth-surface processes.

You will help utilize “segment-every-grain”, a geology-specific extension of Meta’s “segment-anything-model” to aid in the automated extraction of grain size and shape from high-resolution images of polished rocks. You will also help to create a new pre-trained U-net model that is flexible and accurate for ancient rocks, using a large existing training dataset.



Example of a training dataset (Viska Dewi, MSc student)



Example of an output from *segmenteverygrain* <https://github.com/zsylvester/segmenteverygrain>