

Final Report: Crowdsourced Data and Geology

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Abstract

The goal of this work is to develop a semi-automated workflow to locate exfoliation domes in the landscape. North Carolina was used as the study region because it is known to have an abundance of such landforms, mostly in the western region of the state. This work locates exfoliation domes in the landscape by integrating geotagged social media images, machine learning, and spatial analysis. Platforms with publicly available geotagged content were surveyed to determine which will best fit the needs of a project. Then a Python script was developed to mine images and metadata from platforms based on a set of curated, dome-related keywords. Next, an AI filtering method or machine learning method was implemented to clean and filter the data collected through the keyword search. The final product is a database of validated exfoliation dome points from location data pulled from geotags. The broader goal of the work is to highlight the value of public data as an avenue for database development and as a means to improve geospatial research