

Final Project Information Due: December 11, 2024

I. Introduction

In lieu of a final exam, all students taking the GEOL-1460 course will work on a final project. You have the choice of five different datasets (*see the following pages*). These files are now in a folder in the same location that you find the lab data files.

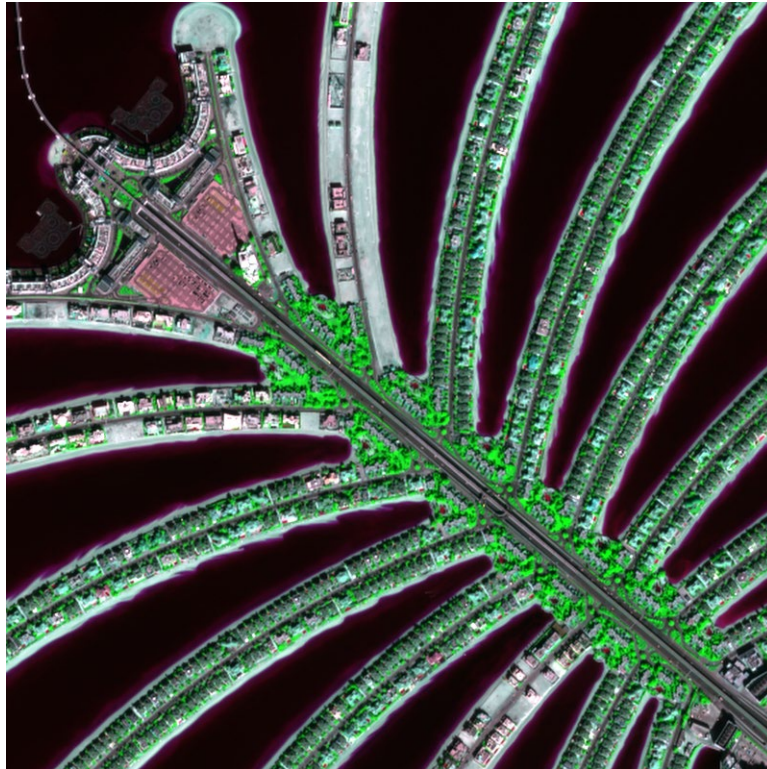
Some of these data are similar to what you have seen in the labs, whereas others are quite different in their spatial or spectral resolution, for example. All relevant information about the image (e.g., sensor type, spatial resolution, etc.) is in file name and the header files, so refer to the lab documents to retrieve that info. From these five, you should pick one based on your interests, something that looks interesting about the data, and/or most importantly, a scientific question/goal that you have based on one of those datasets. You may have this question in mind already, or it may come to you after looking at the data, or after reviewing scientific papers that deal with a topic. This scientific question should guide your image processing and the results that you hope to produce. It should also be featured prominently in your final document and presentation file. Once you have decided on your question and chosen a dataset, you should process the data using the skills that you've learned in the labs or class to answer your question/goal. It will be important that you give this some thought before starting. Don't simply download a file and try to do everything that was done in each of the labs. Be logical on how you explore the data, which algorithms you use to process the data, and how you capture your results. On the other hand, don't download the data, perform one band ratio like an NDVI, and think that you are done! Again, think about some of the steps that are done in the labs. Finally, nothing precludes you from using other/outside datasets to help answer your question.

You are expected to hand in the project by Wednesday of final exam week. It will consist of a 5-slide PowerPoint file and 1-page Executive Summary Word document. If you are in the Mac ecosystem, please save out your files as PowerPoint and Word documents. The written document should incorporate all that you learned from writing lab reports as well as any feedback you were given on those lab reports. The PowerPoint file should be professional, clear, easy to read, and contain no animations. There should be a title slide with your name and your project title, which **does not** count toward the 5-slide limit. You can also have a slide at the end with references if you cite them in your presentation. The five report slides should have your scientific question, the steps performed on the data, as well as the findings and examples of your image results.

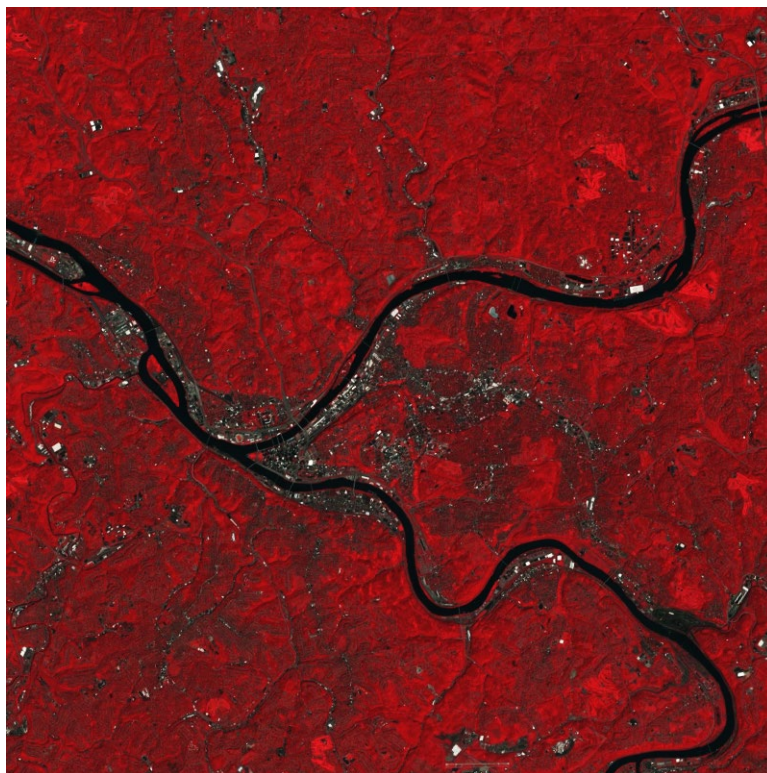
Both will be due on the official last day of class: **December 11, 2024 by 6:00pm.**

Good Luck!

II. Available Datasets



Dataset #1 (*high spatial resolution multispectral VNIR orbital data of The UAE*)

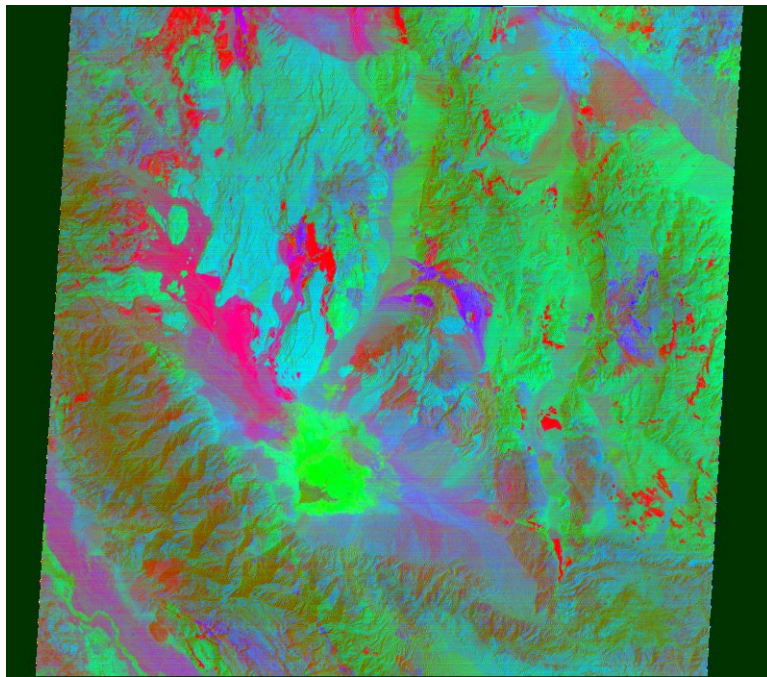


Dataset #2 (*multispectral VSWIR orbital data of Western PA*)

II. Available Datasets (*continued*)

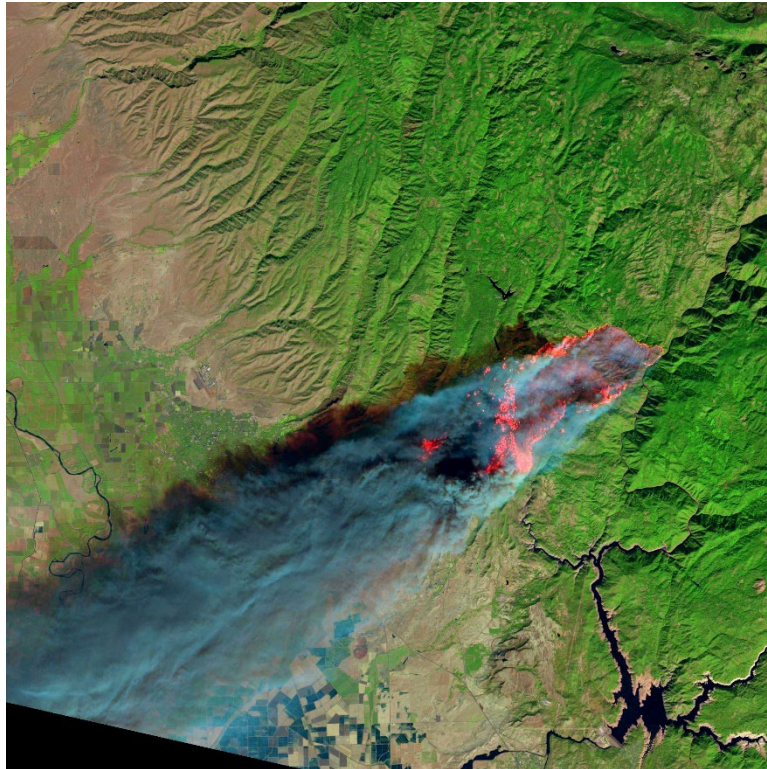


Dataset #3 (*hyperspectral VSWIR airborne data of coastal CA*)



Dataset #4 (*multispectral TIR orbital data of Saline Valley, CA*)

II. Available Datasets (*continued*)



Dataset #5 (*multispectral VSWIR + TIR orbital data of Paradise, CA*)