Assignment 2 – GGS416 Satellite Image Analysis (SAI)

Due February 15th 2026

Using the same NAIP workflow demonstrated in Week 3, you will apply this to new geographic areas of your choosing. You will download NAIP imagery, crop, and create various visualizations.

For new locations, utilize the Microsoft Planetary Computer code from Week 3 to retrieve five cloud-free NAIP images, **using a for loop**.

You must use the packages we covered in class to do this, but you will need to update the bounding boxes.

Crop images to a smaller bounding box area (e.g., 2x2 km in size), using the code covered in class.

Apply 1 new spectral indices to each map, which we have not covered already in the course (e.g., in the week 2 assignment).

Create a panel plot visualization (1 row, 2 columns) for each image, showing the original image on the left, and the spectral index of your choice next to it on the right. Ensure you add appropriate subtitles.

The processing of each image is worth 20 points.

Submission format

Please write your analysis in either (i) a Google Colab notebook and then use the print function to save it to a .pdf file, or (ii) copying the contents into a word document which you then convert to a .pdf, for submission on Canvas. Without submitting your files like this, you will receive a 50-point penalty to your overall grade (as you need to provide both the code and the answers/maps). Please make sure your printed code outputs and maps are clearly visible for grading.

Please properly number your work, so it can be easily graded.

The Mason Honor code applies. Please also remember to follow Mason AI Use Policy.