



Aerial Imagery and OpenStreet Map Retrieval

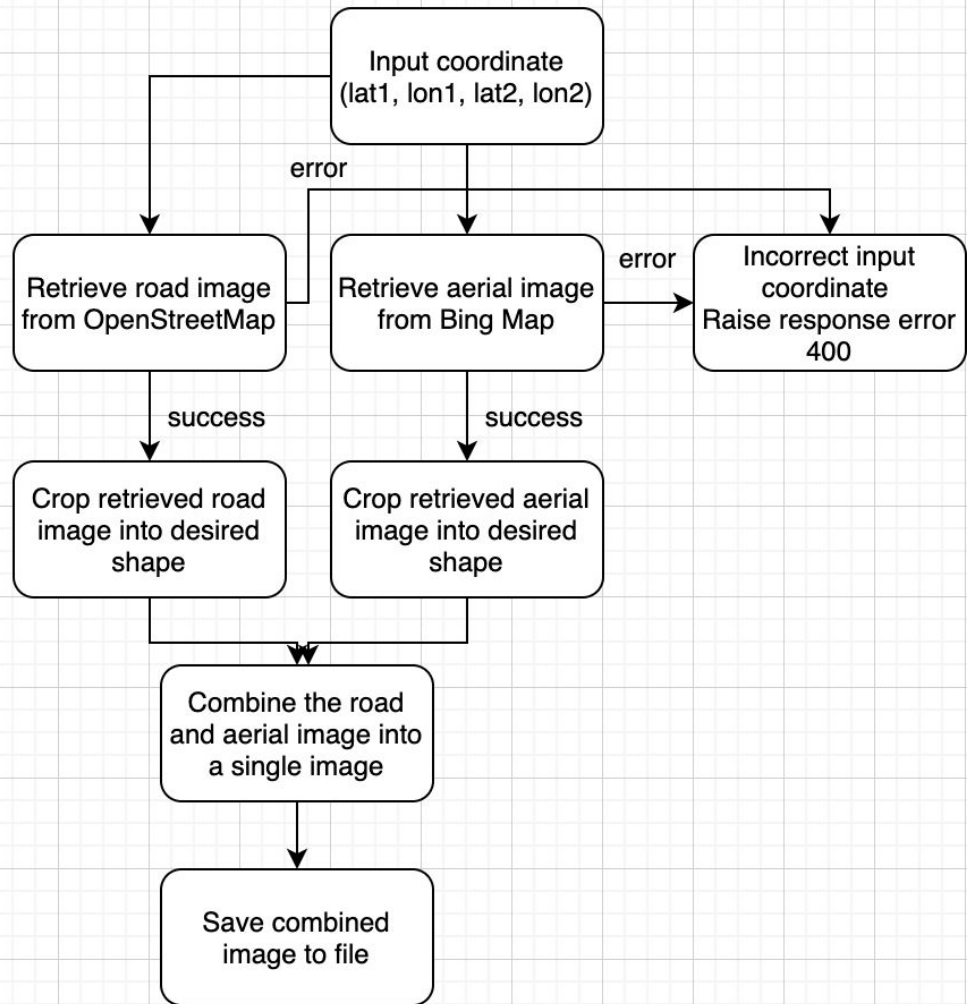
Boyu Wang
Jingya Xun



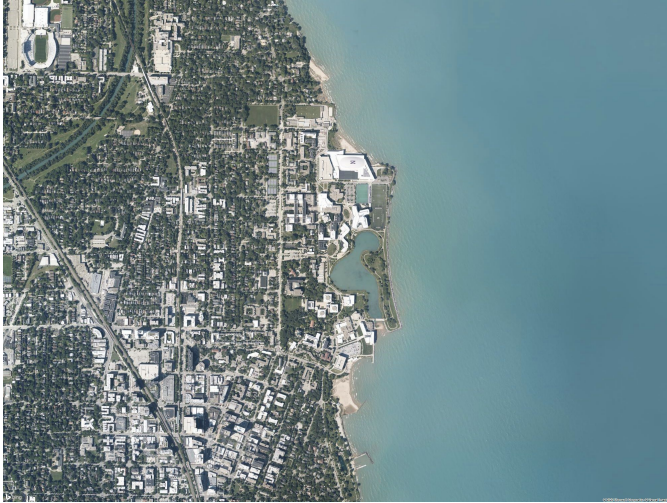
Introduction

- ❑ Bing Maps provides a world map at many different levels of detail and cuts them into tiles for quick retrieval and display.
- ❑ In this project we use [Bing Maps API](#) to retrieve high resolution images using predefined lat/lon bounding box.
- ❑ We use [OpenStreetMap API](#) to retrieve road network/map of the same bounding box.
- ❑ Finally, we combine the images retrieved from Bing Maps and OpenStreetMap to create overlays of satellite images with road labels.

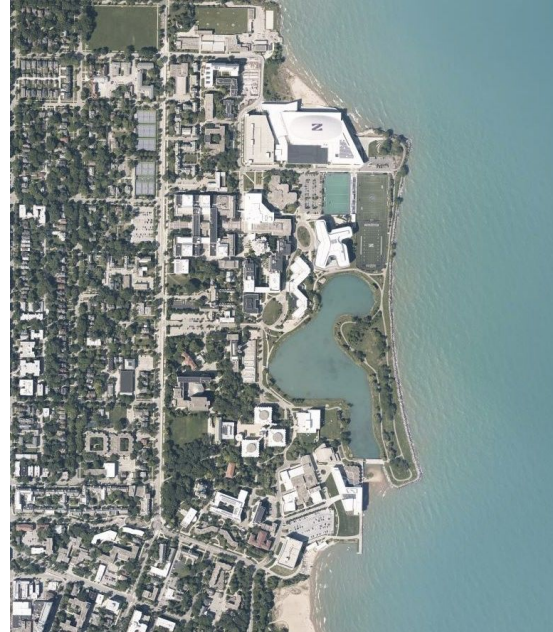
Flow Chart



NU Campus

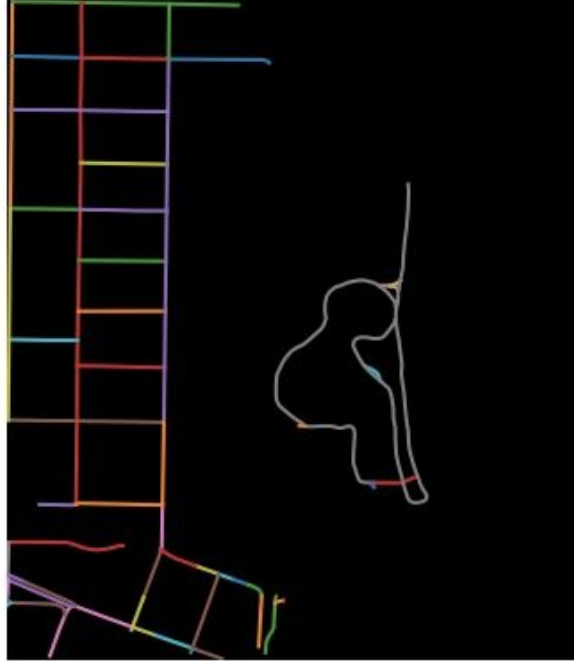


Original Image from Bing Map

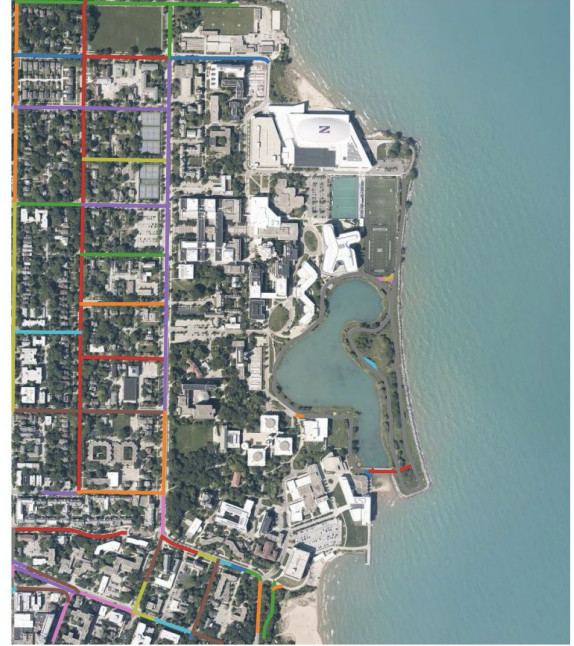


Cropped Image

NU Campus



Road Map from OpenStreetMap



Final Overlay

Cool Places - Adrian Park



Original Image from Bing Map



Cropped Image

Cool Places - Adrian Park



Road Map from OpenStreetMap

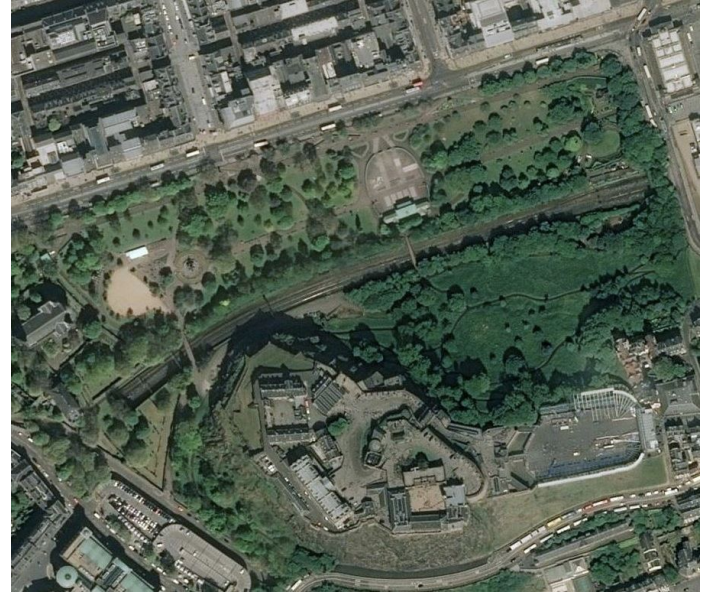


Final Overlay

Cool Places - Edinburgh Castle



Original Image from Bing Map



Cropped Image

Cool Places - Edinburgh Castle



Road Map from OpenStreetMap



Final Overlay

Problems & Findings

- ❑ Sometimes the coordinates might be invalid.
- ❑ The map size we requested might exceeds exceed the size of Bing Map.
We need to enlarge the area of requested latitude and longitude for larger map area.
- ❑ The channel of `matplotlib.imshow()` and `cv2.imshow()` is different.
Matplotlib uses RGB while cv2 uses BGR.
- ❑ The dpi of `matplotlib.savefig()` is not specified, to get high quality image we set `dpi=300`.