

## Final Project Proposal

Leonardo Harth and John Michael LaSalle

We will use cluster analysis to classify different types of water risk using physical attributes from the WRI Aqueduct dataset,<sup>1</sup> population data from the European Commission's Global Human Settlements Layer,<sup>2</sup> Poverty Indicators from NASA's Socioeconomic Data and Applications Center,<sup>3</sup> and NOAA's DMSP OLS Night Time Lights Timeseries.<sup>4</sup>

Our analysis will combine datasets using spatial joining and aggregation, standardizing variables, and cluster analysis. We are unsure whether we will use k-means or BDSCAN.

We will satisfy the project requirements by using data from 3 or more sources, use complex analysis, including geospatial joins and aggregating rasters to polygons. We will also use clustering analysis.

---

<sup>1</sup> <https://www.wri.org/aqueduct/data>

<sup>2</sup> <https://ghsl.jrc.ec.europa.eu/data.php>

<sup>3</sup> <https://sedac.ciesin.columbia.edu/data/sets/browse?facets=theme:poverty>

<sup>4</sup>

<https://data.noaa.gov/metaview/page?xml=NOAA/NESDIS/NGDC/STP/DMSP/iso/xml/4393.xml&view=getDataView&header=none>