URP 610 Final Project Proposal

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GitHub Source: https://github.com/HumblePasty/urban-networks

Data & Research Question

For the final project, I seek to build the scope based on the SSN assignment to do more exploration and analysis on Ann Arbor's bus stop and bus route system.

Research Questions

For the SSN assignment, I answered the following questions:

- What is the network structure of Ann Arbor's bus stop network? (for example, degree distribution, centrality, etc)
- Which stops are important in the network? How are they distributed?
- Which areas have relatively higher density of bus stops? Are they aligned with the busy areas of Ann Arbor?

Further Analysis and Methods

For the final project, I hope to extent the scope and try to answer the following answers:

- **Do the serving density (indicated by the trip schedules) match with the population density?**
- **What is the percentage of population/households that cannot find a bus stop in Ann Arbor in 15min?**
- Apply more **SSN analysis metrics** to analyze the spatial social network, for example:
    - Conduct **Edge/ND scan** to the network and find the network hotspot of the bus network

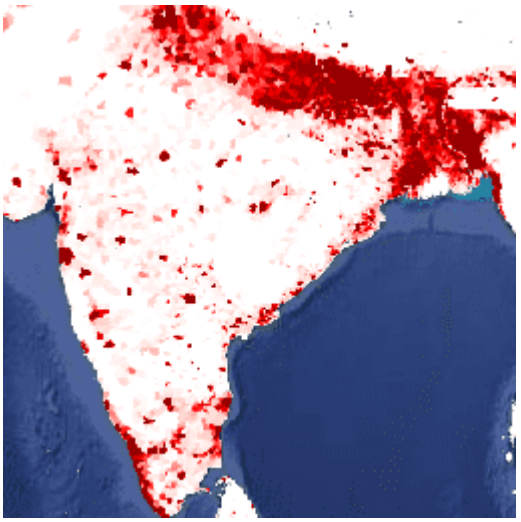
      Note: do I have existing lib to rely on?
    - Calculate the **global flattening ratio** of the bus network and comment on the spatial efficiency of the network

      Note: Also, potential issue in coding - are there existing lib?

Potential Data Sources

- Population density data (ideally raster data with enough spatial resolution)

  For example GPWv411: Population Density (Gridded Population of the World Version 4.11)



- US household data

  This can be a point or polygon shapefile indicating the location of the households. For example FCC broadband household data: