Course Syllabus

Data Mining the City: Session A

Violet Whitney Wednesday 7p-9p 114 Avery

From Yelp reviews directing people to preferred restaurants to Airbnb reprogramming homes into vacation rentals, the invisible code that powers a city's use may have more drastic influence than any physical invention in the last century. This course will focus on encoding spatial analytical processes that enable designers to speculate creatively about the urban environment. Students will develop a critical understanding of the social, economic, and political dynamics caused by these technologies as well as technical training in simulation, sorting and visualization techniques. We will hypothesize about the relationships of tools and space, as well as develop models and simulations so designers can gain a foothold in the changing landscape of a platform city.

Material:

The main technical language of this course will be Python in Processing. No prior coding knowledge is necessary, though the content of the course will require perseverance. This course is exceptionally difficult and time intensive. Students are expected to submit weekly coursework, attend classes and submit a final comprehensive project. Session A will be structured as lectures with in class exercises and weekly homework assignments that lead up to the project.

- Methods, tools and data

- Experimentation with code-driven workflows
- Critical understanding of simulation/data concepts (e.g. generalization, bias)
- How the underlying framework of a system determines its behavior over space and time

Project:

In the Session A project you will simulate a portion of a studio or thesis project i.e. movement and interaction of people playing different roles in a building, neighborhood, or city, assembly of parts through a factory, usage of portions of the city over time, environmental dynamics of a system, a cities' growth over

time, room or space reservations, purchasing or vacancy over time. Projects will be developed in pairs of 2 or 3.

Schedule:

Wk 1 - **What does AI have to do with spatial design?** Sep 5

Wk 2 - **Agent Based Modeling & Populations** Sep 12

Wk 3 - **Simulating Systems** Sep 19

Wk 4 - **Artificial Intelligence & Spatial Decision Trees** Sep 26

Wk 5 - **Patterns & Bias** Oct 3

Wk 6 - **Data Mining Fundamentals** Oct 10

Wk 7 - **FINAL REVIEW** Oct 17

Arch. Midterm Reviews Oct 22 - Nov 2

Grades:
Session A

30% - weekly quiz - Pass/Fail
    (first week won't count against attendance)

30% - weekly post on Medium - Pass/Fail
    must be posted by midnight Weds
    (10% off for each day its late)

40% - Session A Final Project

Session B

30% - weekly quiz - Pass/Fail

30% - weekly post on Medium - Pass/Fail
    must be posted by midnight Weds
    (10% off for each day its late)

40% - Session B Final Project