

Significance of Tree Density in NYC

DS 4002 – Spring 2023 – Ann Sofo

Resource: <https://github.com/annsofo/CS2>

General Description: Submit to canvas a link to your assignment repository

Preparatory Assignments – Everything included in the github link above.

Why am I doing this? Trees have a large impact on their local communities, from improving air quality, providing shade and lowering the temperature, improving water quality, providing a natural habitat, reducing noise pollution, lowering crime rates, and more. However, these effects are not equally distributed — according to Scientific American, neighborhoods with high poverty and communities of color have 41% less tree canopy than neighborhoods with low poverty or a majority white population. This disparity in tree coverage leads to an unequal distribution of the associated benefits, exacerbating social and environmental inequalities in cities. New York City in particular was identified as one of 20 US cities significantly lacking in tree equity, American Forests reported, highlighting the need for targeted urban forestry efforts to address these disparities. By looking at what socioeconomic variables correspond to disparities in tree distribution, policymakers, urban planners, and organizations can identify significant inequalities and strategically target the most disadvantaged communities to promote more equitable access to the numerous benefits of urban trees. In 2007, NYC Parks started the ‘MillionTreesNYC’ initiative to substantially increase the tree population; this program has led to a host of valuable research regarding the urban forest and has transformed acres of parkland and streets into ecologically healthy forests that provide benefits to all New Yorkers.

What am I going to do? In this assignment, you will use the dataset provided (or any additional data you believe to be relevant) to develop a supervised machine learning model to find out what the relationship is between socioeconomic variables and tree density in NYC. You will need to conclude whether you believe there is a true disparity of tree density in the city between communities of differing social and economic statuses. Deliverables:

- A draft of an email to NYC Parks explaining whether you believe the MillionTreesNYC initiative should or should not focus on planting more trees in low-income communities
- A slide that shows your model results and how it correlates with your initial hypothesis

All of this will be submitted electronically via a link to a github repository.

How will I know I have Succeeded? You will meet expectations when you follow the criteria in the rubric provided.