

CS 487/519 Applied Machine Learning I

Project 2: Open ML project

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MOTIVATION:

The key motivation behind this project is that carbon emissions contribute to climate change, which can have serious consequences for humans and their environment. According to the U.S. Environmental Protection Agency, carbon emissions, in the form of carbon dioxide, make up more than 80 percent of the greenhouse gases emitted in the United States. The burning of fossil fuels releases carbon dioxide and other greenhouse gases. These carbon emissions raise global temperatures by trapping solar energy in the atmosphere. So in this project we analyze a data on carbon footprint of individual's and using this data and machine learning techniques develop an algorithm that minimizes the carbon footprint of each individual while maintaining their quality of life.

PROBLEM DEFINITION:

The problem of high carbon footprint in the environment is a major issue and has a great influence in the climatic changes in the world. So this problem is kept forth by Wells Fargo whose high priority is to promote environmental sustainability. As an initiative they have produced a data containing all the daily activities of individual customers. We are to analysis on the daily activities of individuals customers in a way to accelerate the transition to a low-carbon economy. This has to be achieved without compromising on their daily priorities and needs. They believe that taking individual actions can encourage the collective responsibility to achieve this goal. So using Machine Learning we are to develop a data product that would help in analyzing the data and help individuals to optimize the balance between their carbon footprint and the quality of life.

The ultimate goal would be to recommend an environment friendly change to the everyday actions without lessening the individuals' quality of life. The data gives a peak into the lives of 1,000 individuals who rated several everyday activities (taking a long shower, driving a car, etc.) on a scale of 1-100 based on how important those activities are to their daily lives. So at the end the data product should produce a computer data program to find quality substitutes for activities that are high carbon emitters without reducing the happiness and utility that the individuals in the data obtain from these activities.