ECE 225A Project Report - California Housing Prices

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Abstract

1 Introduction

The California housing market has long been a subject of interest for economists, policymakers, and residents alike. Its complexity, driven by factors ranging from economic conditions to geographical desirability, presents a rich field for data analysis. This paper presents an exploratory data analysis of the California Housing Prices dataset, a comprehensive collection of housing-related statistics from the 1990 California census. For this project, I focus on uncovering insights into patterns within the data, especially in relation to median house values across different census areas in California. Through data preprocessing, statistical modeling, and visualization techniques, I explore key factors such as room count, population, median income, and geographical location. I also develop and present a predictive model for median house values based such factors, which provides further insight into the complex dynamics of California's housing market.

2 Dataset

The dataset, provided by the US Census and available on Kaggle, comprises housing-related statistics for different blocks in California. Each entry represents statistics for a group of homes in a given block.

2.1 Dataset Description

These variables include the following:

- Latitude and longitude
- Median house age within block
- Total rooms, total bedrooms
- Total population
- Number of households in block

- Median income for households in block
- Median house value for households in block
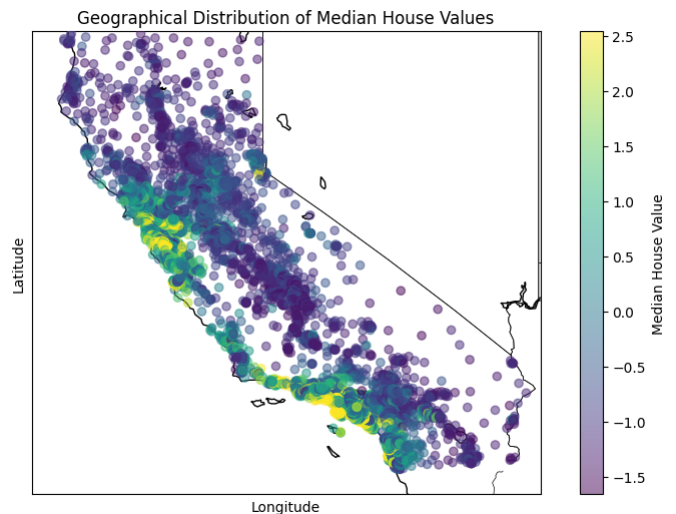- Ocean proximity (<1H OCEAN, INLAND, ISLAND, NEAR BAY, NEAR OCEAN)

Figure 1: Visualization of California median house values

The dataset contains 20640 entries corresponding to a different census block, each with the features described above.

2.2 Exploratory Data Analysis

Here it comes [1].

3 Code

The code for this project is attached in the form of a Jupyter notebook in the Appendix.

References

[1] EINSTEIN, A. Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]. *Annalen der Physik 322*, 10 (1905), 891–921.

Appendix