

ORIE 4741 Project Proposal

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October 2021

1 Question

Can we accurately predict the price of housing properties based on a variety of covariates (ie. Square Footage, Zip Code, Year, Number of bedrooms), and if so identify the most pressing features that drive the housing market?

2 Datasets

1. Housing Prices dataset from Kaggle - data on house prices in Ames, IA
2. Land cost data from fhfa.gov (may or may not use) - data on average cost of land by different splits (zip-code, county, etc...)

3 Proposal Memo

Dear Mrs. Jones,

My associate and I would like to work on a project for improving our method of price estimation for properties. While our current method may be adequate, we are missing out on potential profits and customer satisfaction that could be achieved with improved price prediction. We believe we can build a machine learning model to better estimate the prices of homes. Improving our price estimation will help us in many ways. First, when working with clients buying homes, we will be able to offer a more competitive bid and have a better idea of whether a counter offer is favorable for our client. Additionally, when working with clients selling homes, we will be able to post more competitive, yet favorable, listings for our clients allowing us to make them more money while also having a high likelihood of selling the house in a short period of time. We are both qualified to take on such a project as we both majored in Computer Science with experience in machine learning and data science as undergraduates. This project is likely to succeed due to the large amount of data we have on properties in our city, as well as some creative ideas we have to build our model. We hope you will consider allowing us to complete this project.

Sincerely,

Philip Ayoub and Kevin Cushing