

Problem One:

Description: As undergraduate students who are approaching our graduation and are ready to enter the workforce, the transition from academia to professional life brings with it financial independence and the potential for investment, especially in real estate. However, we face a significant challenge due to our lack of experience in real estate investment, particularly in estimating the true value of properties. The lack of knowledge might cost us overpaying for a property. A simple solution is to benchmark the prices around the area we intend to buy. However, the complexity increases when considering each property's unique attributes, which can significantly affect its value. Therefore, we need a model to help estimate and predict the house price based on not only the house location or area but also the different features of the house. As investors, the need for precise price evaluation is paramount, which helps make a positive return and maintain sustainable cash flow.

Solution: Develop a model that can predict house prices by incorporating a comprehensive set of features beyond just location and area.

Data Description: The ideal dataset for this investigation would include detailed property listings with a wide range of characteristics, such as type of road access to the property, the general shape of the property, proximity, heating quality and condition, electrical system, first-floor square feet, second-floor square feet, kitchen quality, etc.

Sources: Kaggle, UC Irvine Machine Learning Repository, Amazon's AWS datasets.

Problem Two:

Description: We have to admit that one of the highest priorities in a business is to satisfy customers, and customer service is what we need to pay attention to. Businesses aim to gauge the effectiveness of their customer service by monitoring surveillance cameras. However, it will cost a business to hire employees and resources to watch the camera surveillance to see if the customer is satisfied with their customer service, and it might not be effective if the employee is inattentive. It is unnecessary to see every customer interaction, and the priority should be identifying customers who are not satisfied. Therefore, we propose developing a model capable of detecting the satisfaction level through their facial emotion. This solution has the potential to save businesses both time and money by automating the monitoring process and focusing on situations that we are concerned about.

Solution: Develop a model for facial emotion detection by training enormous images of human emotion with labels included.

Data Description: Facial emotion images and label

Sources: Kaggle

Problem three:

Description: How do we determine whether a person is suitable for a position that a business is hiring for, and how do we assess our weaknesses and strengths to make decisions about the careers we should pursue? We can address these questions by assessing individuals' five traits based on their writing and their use of words in communication. By understanding an individual's traits, we can answer these questions and achieve much more. For instance, we can

personalize development programs, create effective educational plans, and devise marketing strategies, among other applications.

Solution: Develop a model to access five traits of personality based on text

Data Description: Text and score for each trait.

Sources: Kaggle