ML Challenge Report

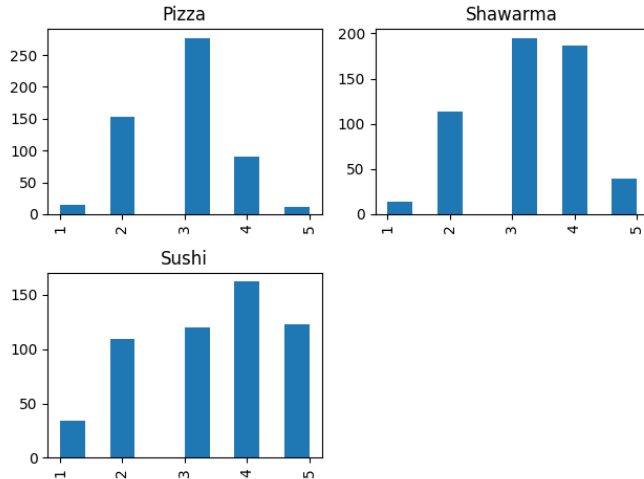Siqi Liu Rafay Usman Ryan Shiels Albert Li
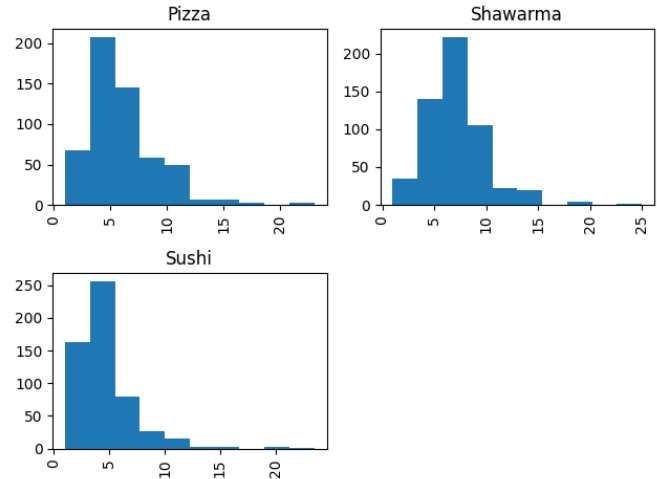

Fig. 1: Histogram for Q1

Fig. 2: Histogram for Q2

I. DATA

We used a variety of plots to explore the data depending on the data type.

For numerical features such as Q1: How complex is it to make the food Q4: How much would you pay for the food, we used box plots and histograms to see the distribution of data for each food class. Using boxplots allowed us to identify the median and outliers of the responses, allowing us to see whether some food correlates with the question more than others.

We see an interesting correlation between the number of ingredients and the food. For pizza, we have a normal distribution where the majority of the inputs labeled it as having a difficulty of 3. For sushi on the other hand, the distribution is more uniformed, with a peak of 4 but a wider spread.

For "how many ingredients would you expect this food item to contain", we see the following plots showing a right skewed distribution for all food items. For "How much would you expect to pay for one serving of this item", we see the median for pizza is lower than sushi, and we see sushi with more extreme outliers than the other food classes.

We used bar charts for categorical data and only explored the questions with interesting data here. Some questions allowed open-ended answers, such as what movie associates with the food class. To make analysis simpler, we only plotted the top 5 most popular responses. The following figure shows the results for Q5: What movie do you think of when thinking of this food item?. For both Pizza and Sushi, we saw "none" as the most popular input, and interestingly we saw "Avengers" to be by far the most popular response for Shawarma, suggesting a correlation between Avengers and Shawarma.
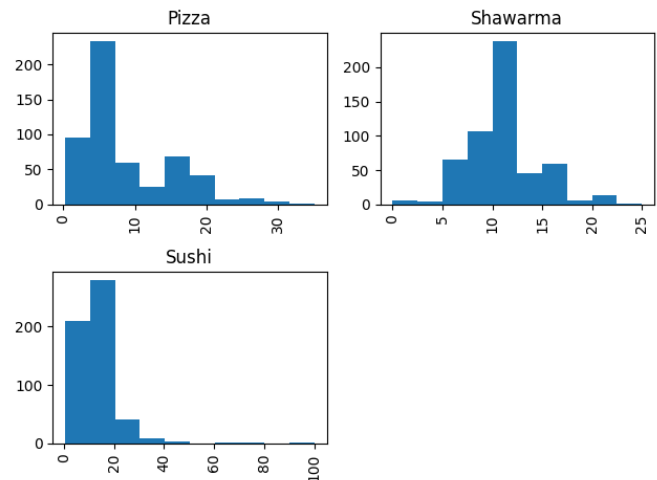

Fig. 3: Histogram for Q4

For Q3: "In what setting would you expect this food to be served?", we see a trend that Pizza is more appropriate for most situations, and shawarma and sushi are more specific in when they are expected to be served.

Although there are other features such as Q7: "when you think about this food item, who does this remind you of?", they show less differences for different food classes. For example, the most popular answer for Q7 was "Friends", making it less indicative of the food class.

We split the dataset into 3 sets: 60% training, 20% validation and 20% test. This allowed us sufficient data to train the model as well as data for testing that the models generalizes to unseen data

II. Model

III. Model Choice and Hyperparameters

IV. Prediction

V. Workload Distribution