ML Challenge Report

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I. DATA

We used histograms and boxplots to explore the data depending on the data type.

Figure 1 shows a histogram of responses for Q1: From a scale 1 to 5, how complex is it to make this food?. For Sushi, the difficulty is generally higher with more inputs of 4 and 5. For Pizza, we see medium complexity(3) being the highest choice. For Shwa
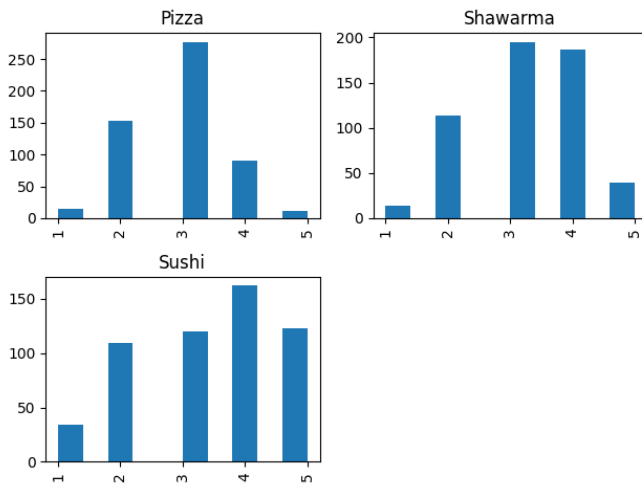

Fig. 1: Histogram for Q1 How complex is it to make the food

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.

For Q3: "In what setting would you expect this food to be served?", we see a trend that Pizza is more appropriate for
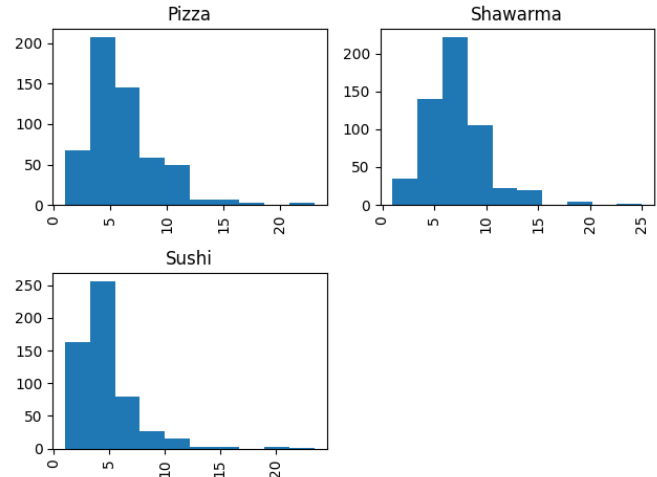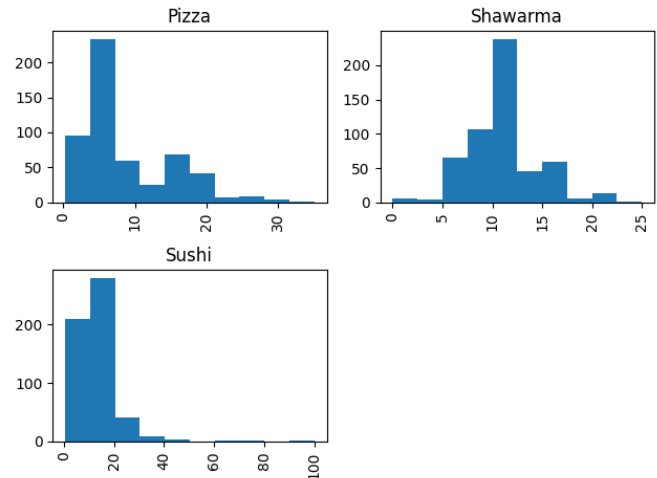

Fig. 2: Histogram for Q2

Fig. 3: Histogram for Q4

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