



Hello Fresh

or is it?

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Business Understanding

Key stakeholder: **HelloFresh**

- HelloFresh - online ordering service
 - pick a food plan, deliver you food with recipe and ingredients measured out

Problems

- Streamlining quality assurance of beef through image classification
- Text classification to identify sentiment in reviews

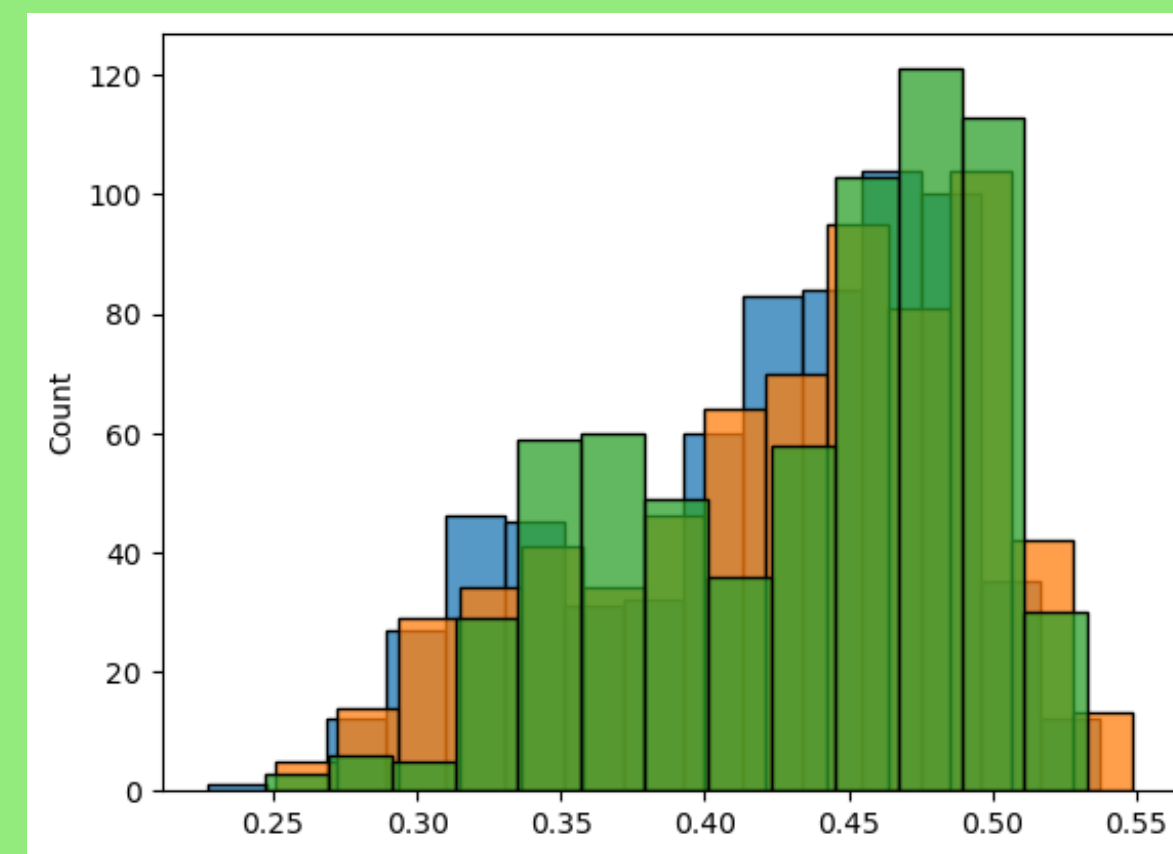
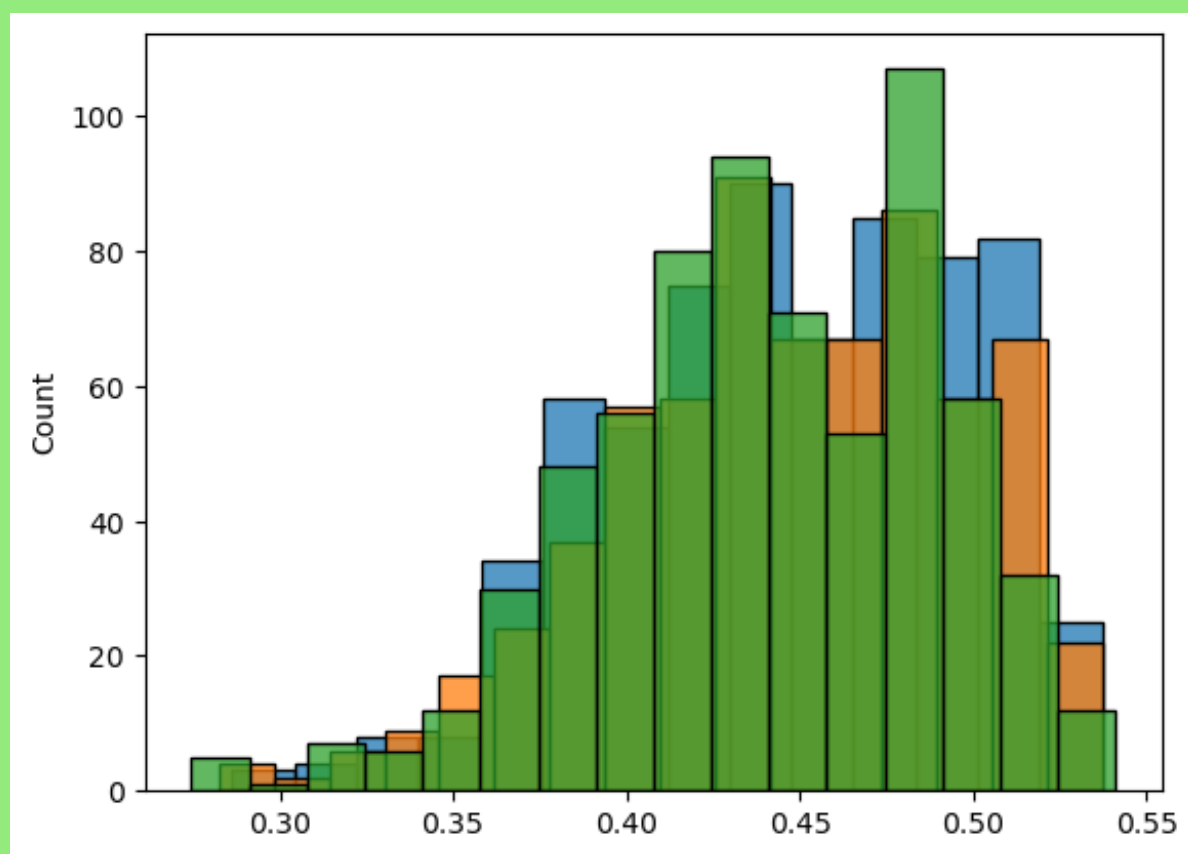
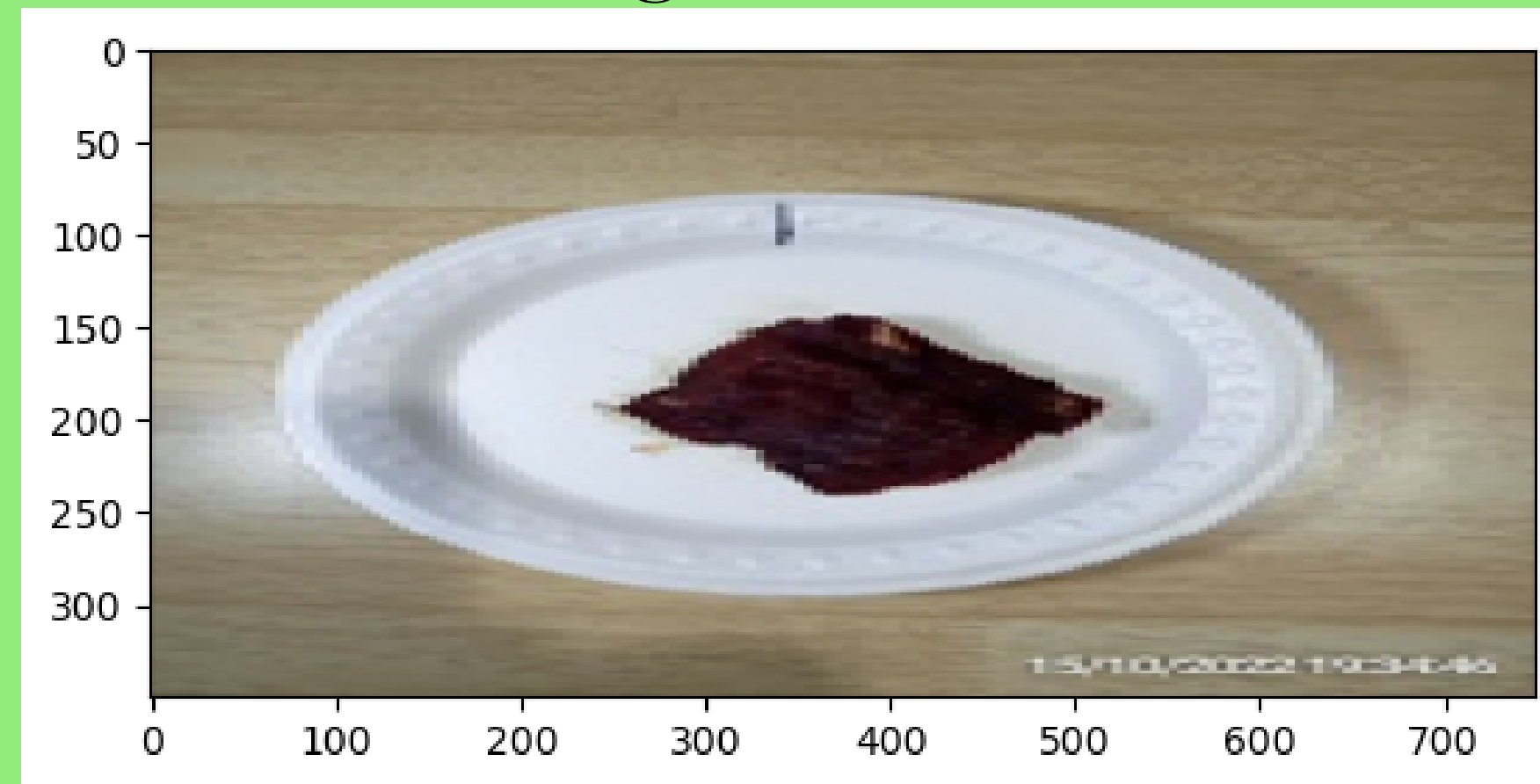
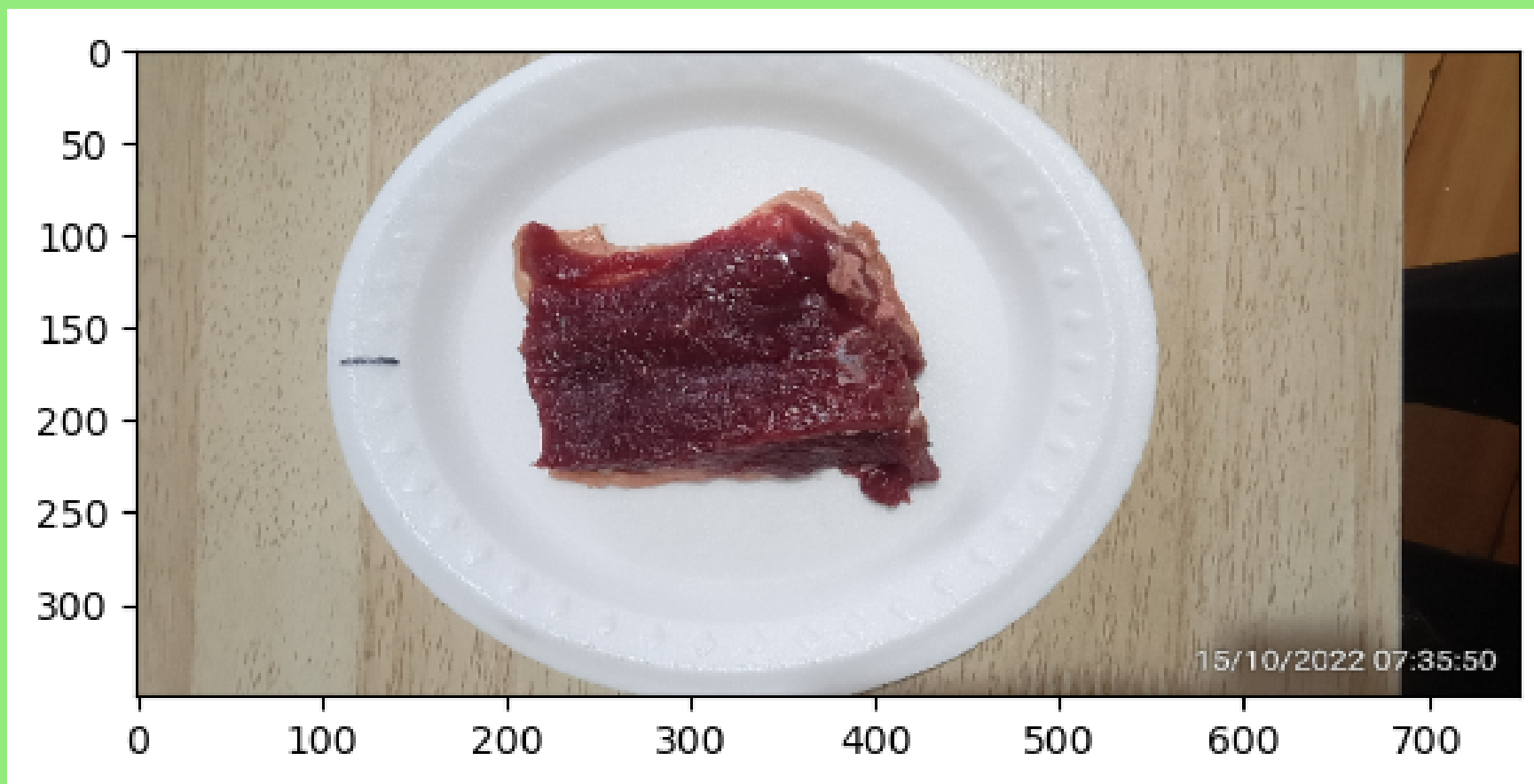
Value

- Save money not using warehouse workers and use image classifier instead
 - Great quality assurance upholds the reputation of the company
- Broadens the net outside of traditional reviews → greater sentimental analysis

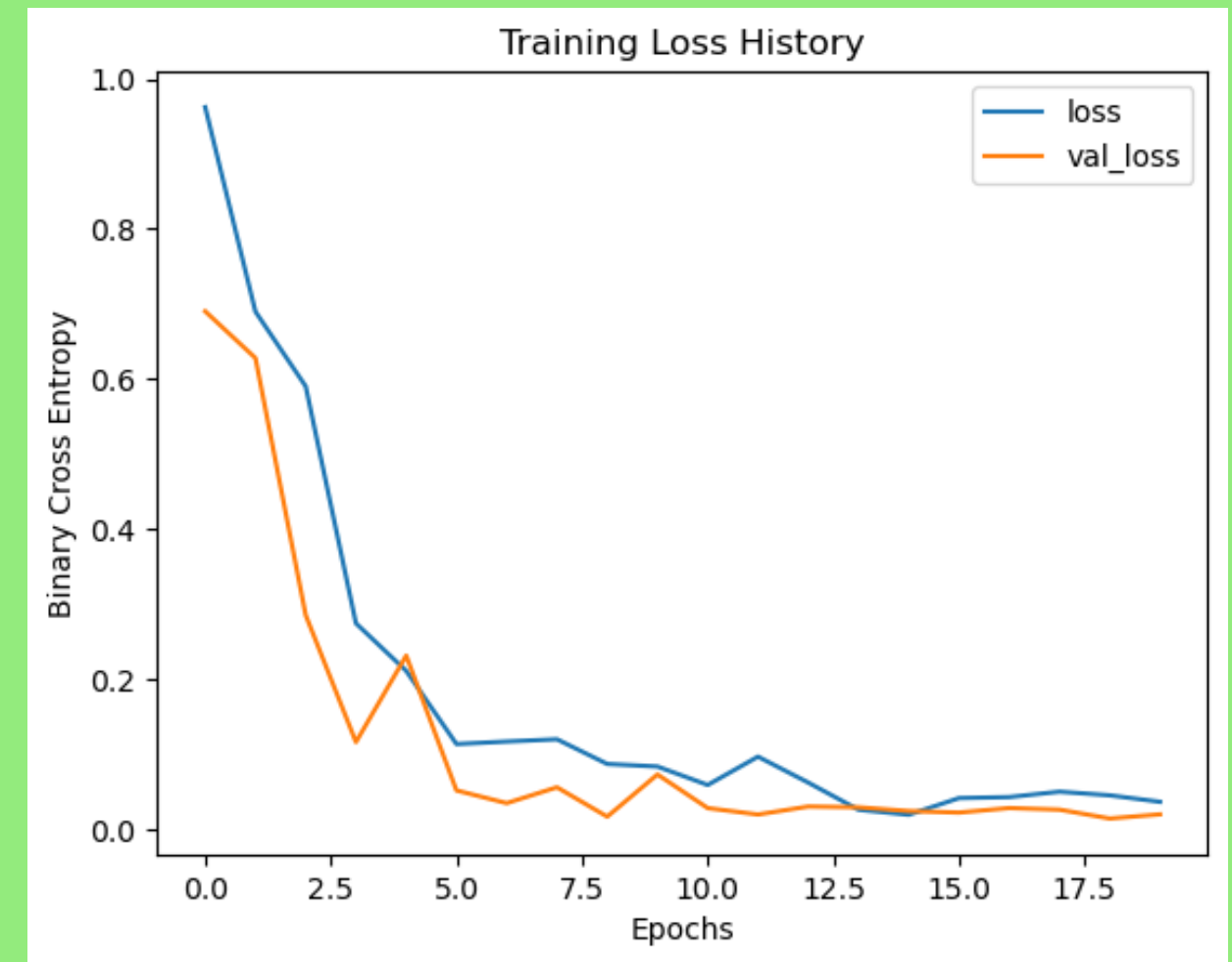
Data Understanding

- The image classification data came from Mendeley Data
 - 3,000 images of beef
 - Evenly balanced target class
-
- The text classification data was scraped from Trustpilot
 - Over 40,000 reviews
 - Imbalanced target class

Fresh and Rotten Images



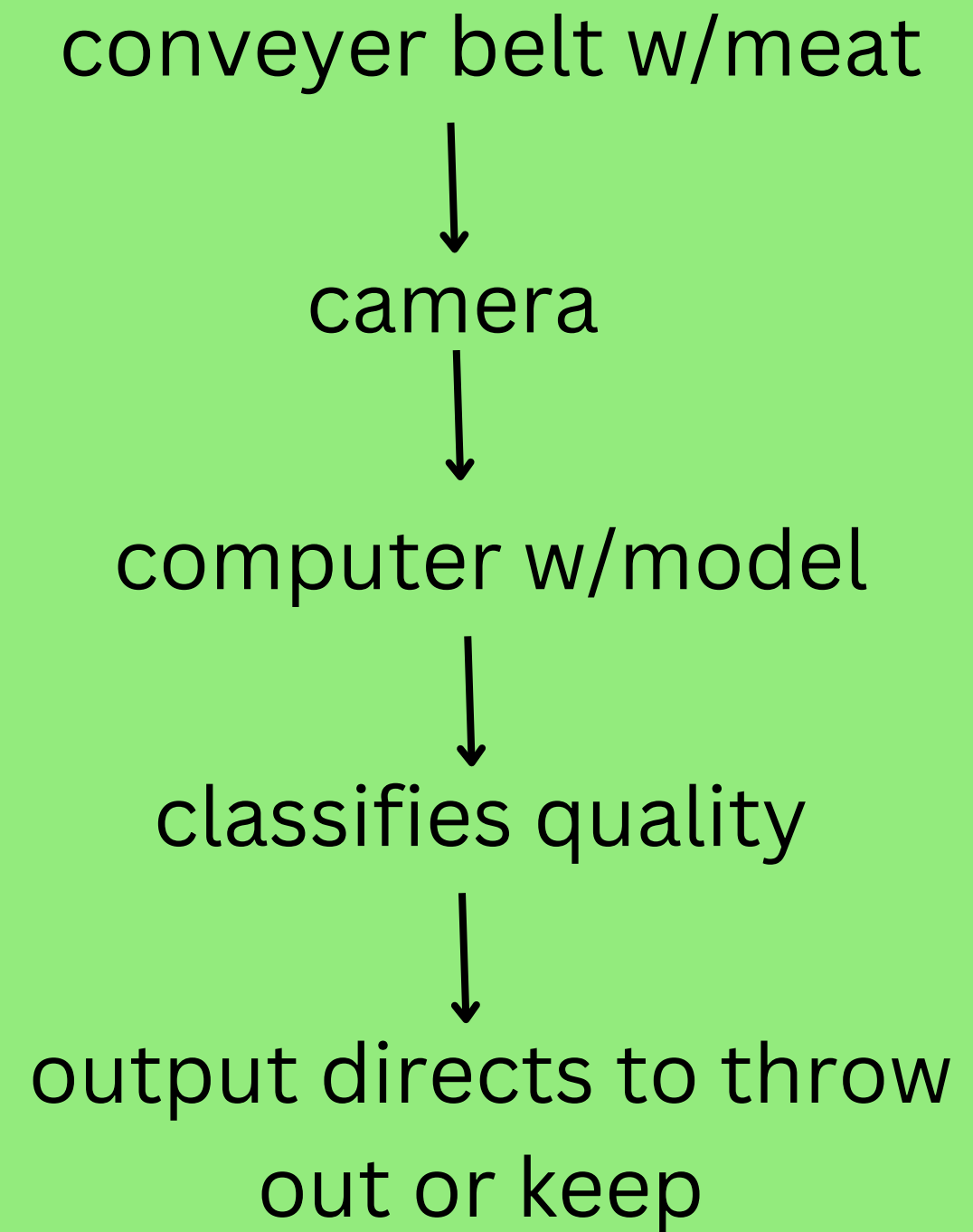
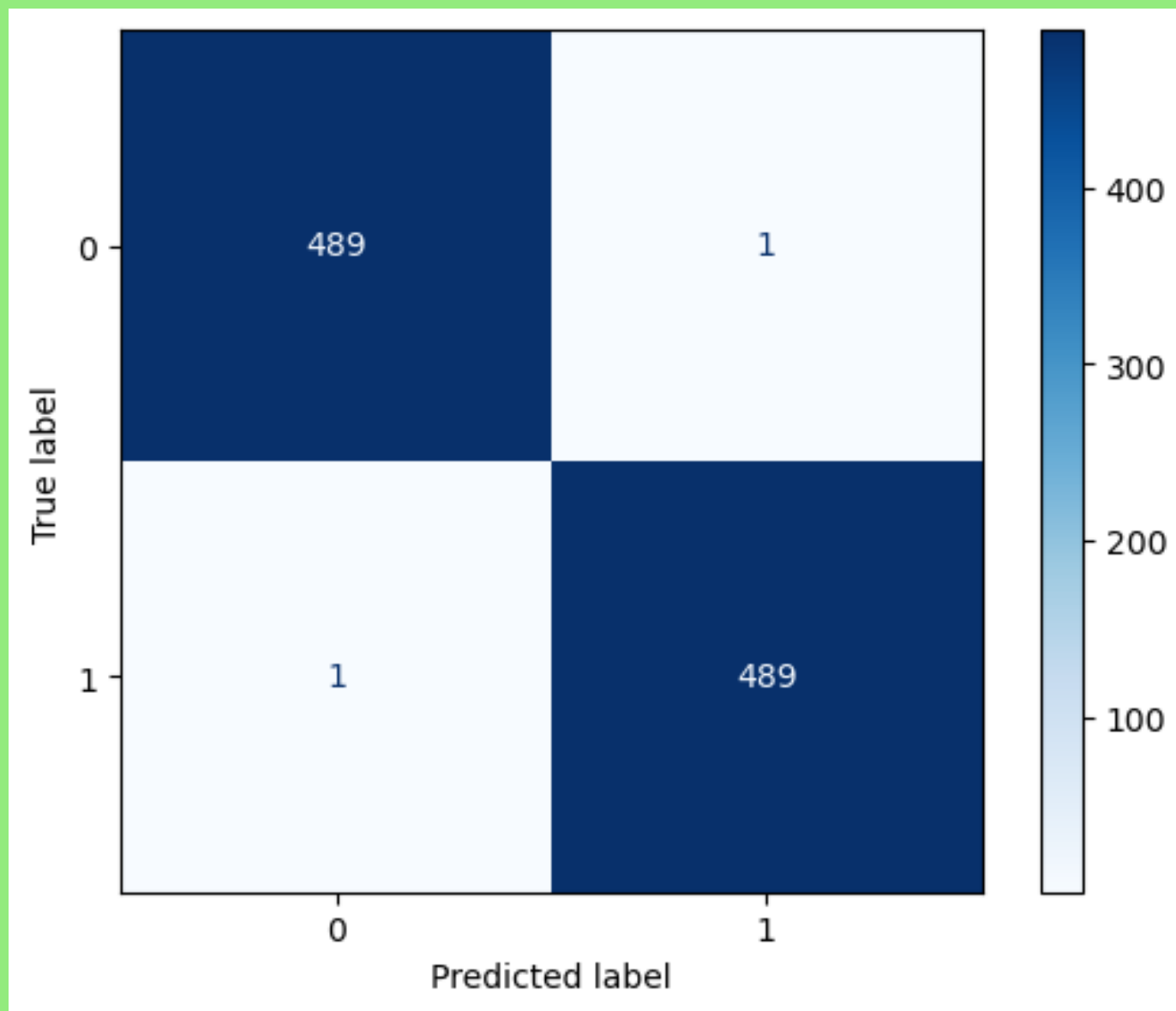
CNN Model Results



```
test_loss, test_acc = model3.evaluate(test_generator)
print('Test loss: {} Test Acc: {}'.format(test_loss, test_acc))
```

```
31/31 [=====] - 45s 1s/step - loss: 0.0061 - accuracy: 0.9980
Test loss: 0.006140260025858879 Test Acc: 0.9979591965675354
```

CNN Model Implementation





Where is reputation reflected?

Reviews!!!

Web Scraping

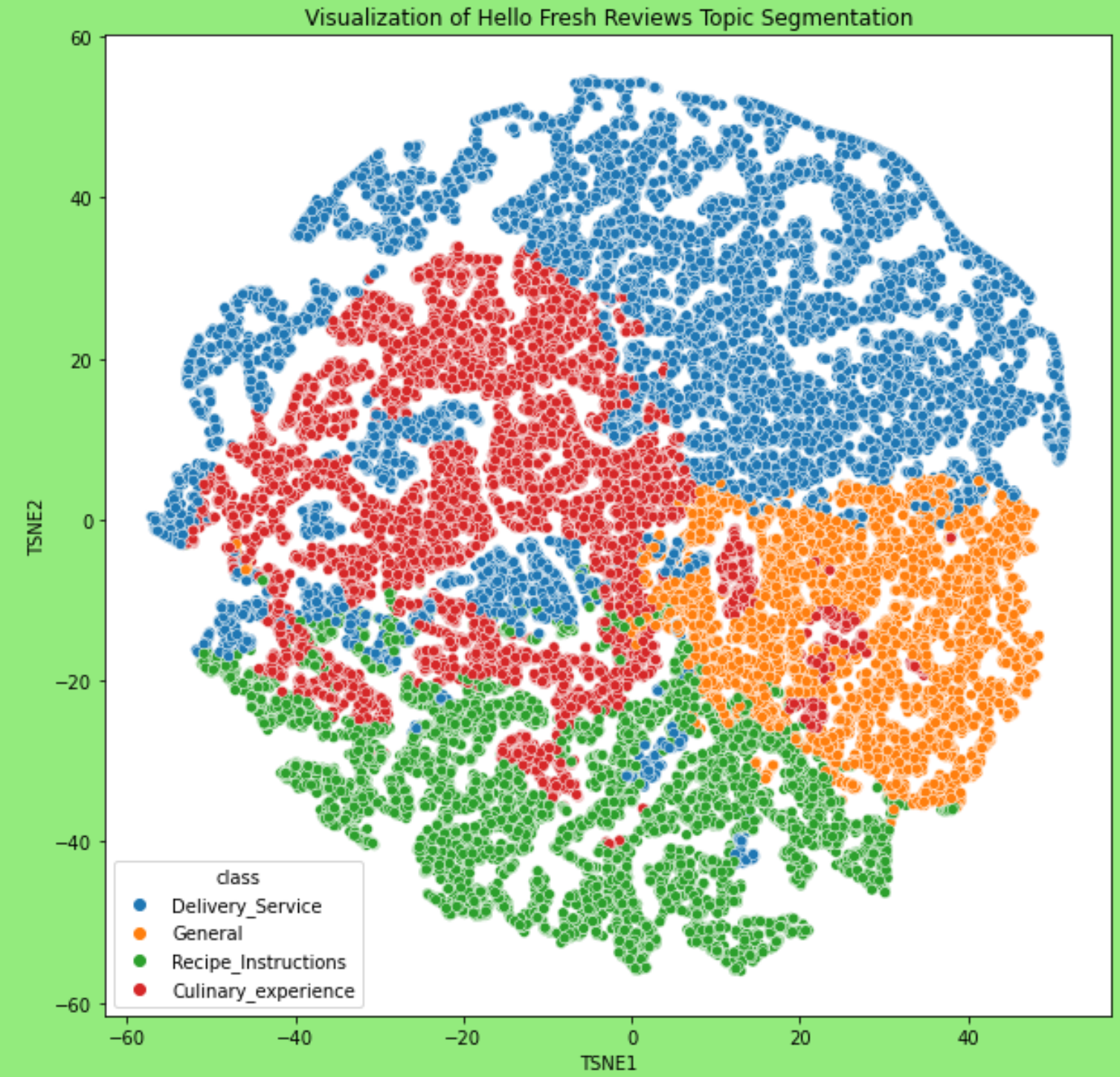
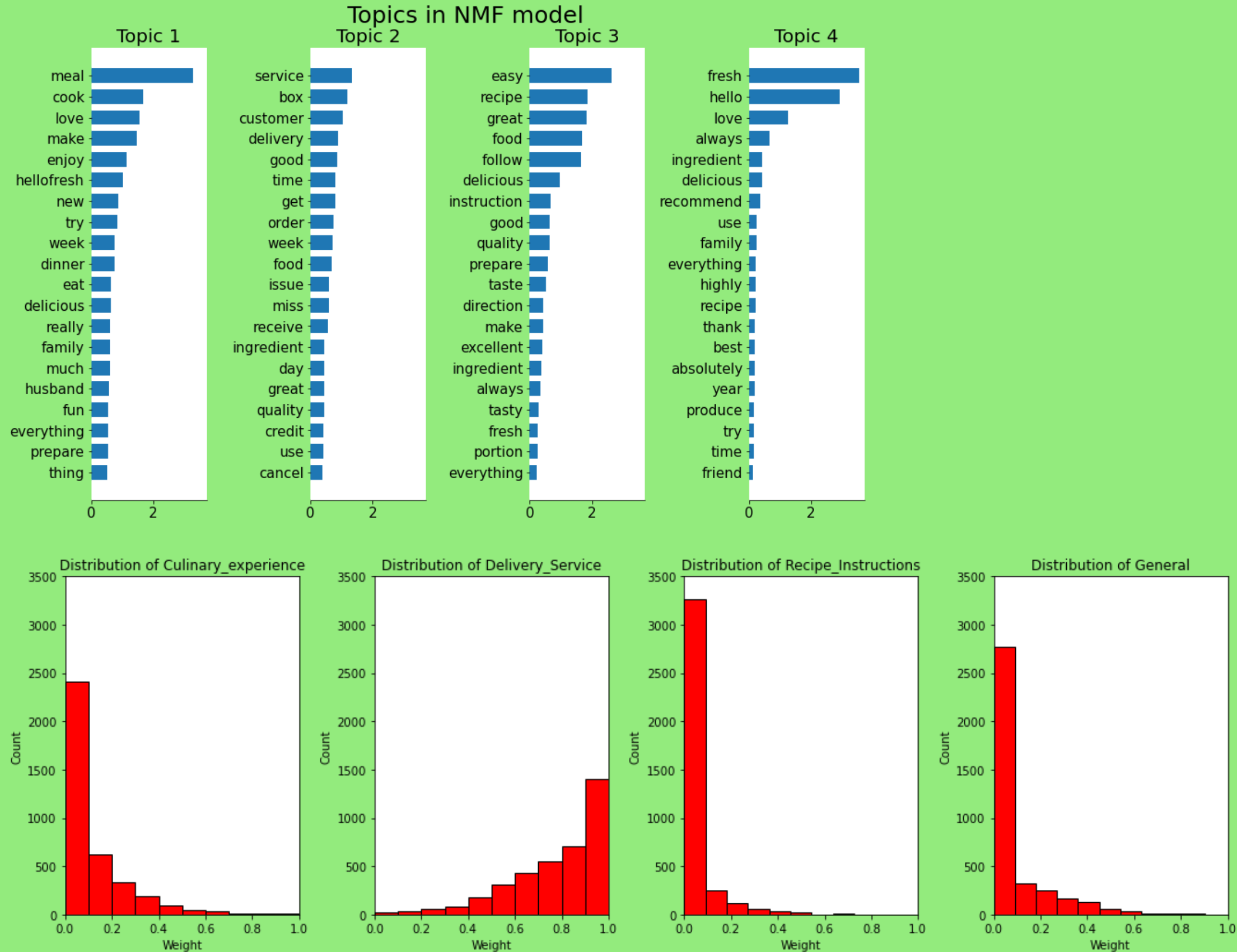
Where did I get my data?



Manipulated my data into
binary classification from 1-5
star reviews

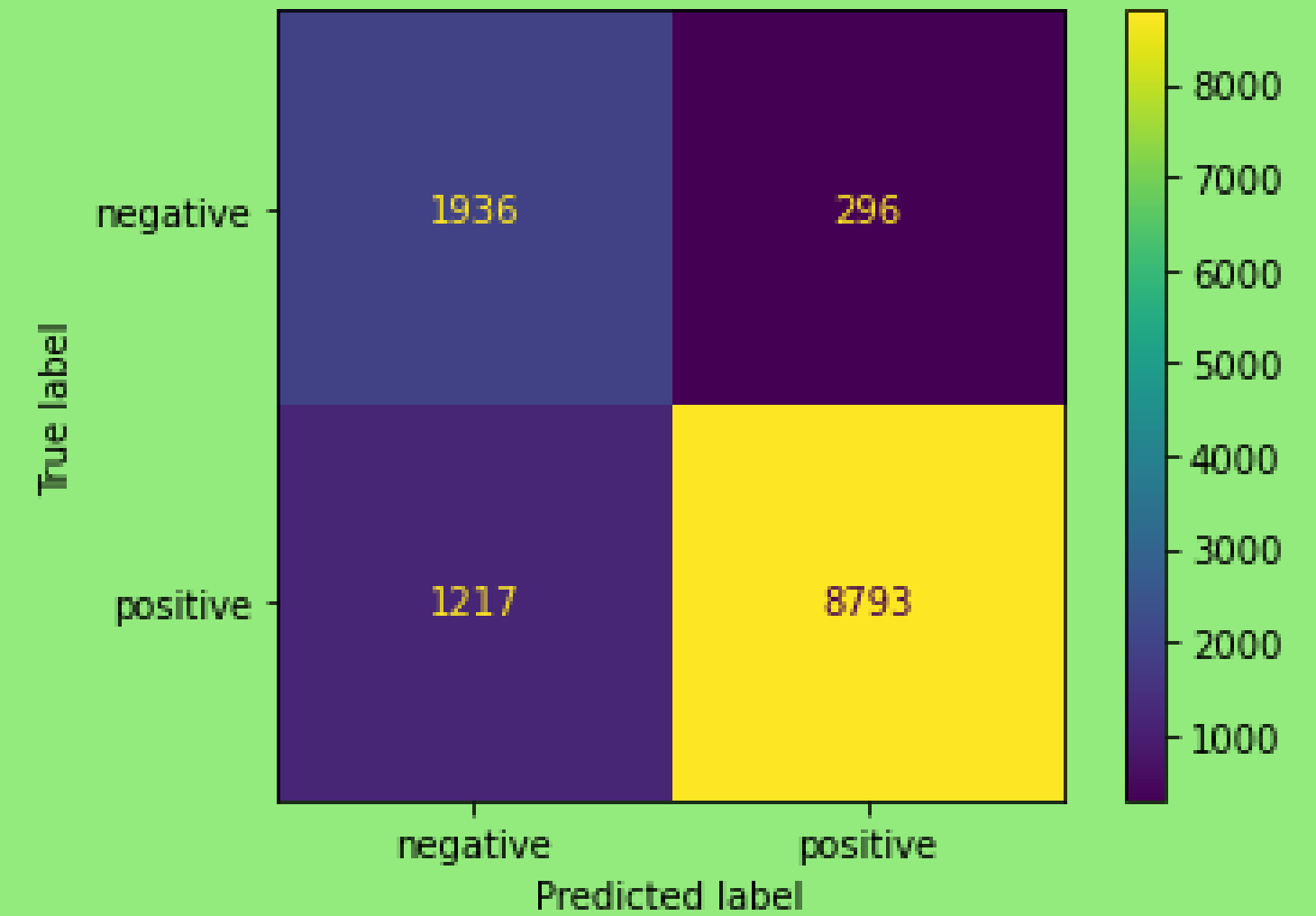
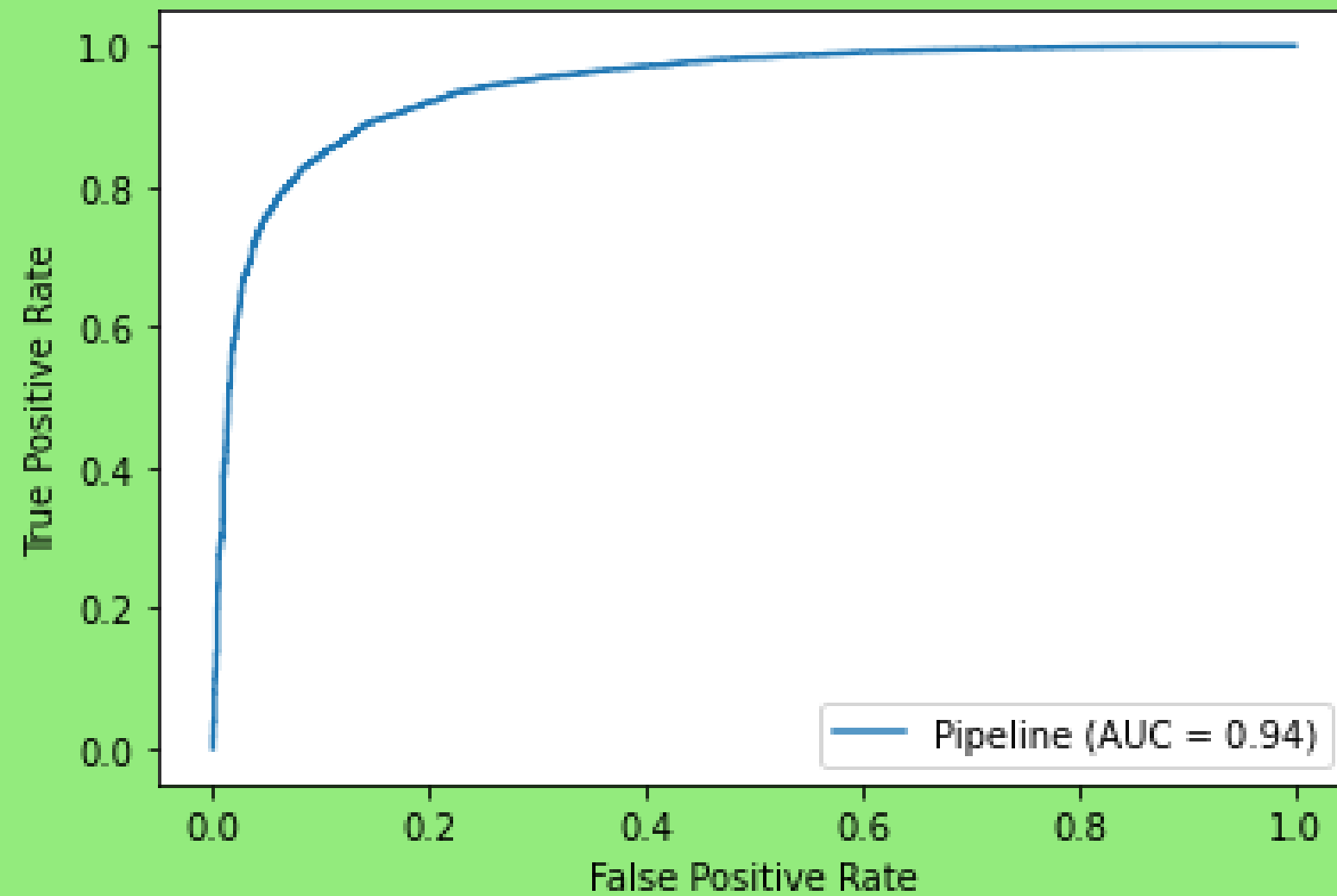
< 40,000 Reviews

Topic Modeling/ Feature Extraction



NLP Model

Logistic Regression - 88% Accuracy



NLP Model Implementation

Customer feedback/support



- No star ratings



- Email messages



- Phone call transcripts



- Brand perception



- Identifying trends

Recommendations/Next Steps

Recommendations

- Implement image classifier into warehouse
 - Saves time
 - Saves money
- Use text classifier to capture more accurate reviews and sentiment
 - Identify trends
 - Brand perception

Next steps

- Add more food types to image classifier
- Use more complex nlp to raise the accuracy of detecting neutral scores and ratings

Any Questions?