Predicting Age from E-commerce clothing Reviews

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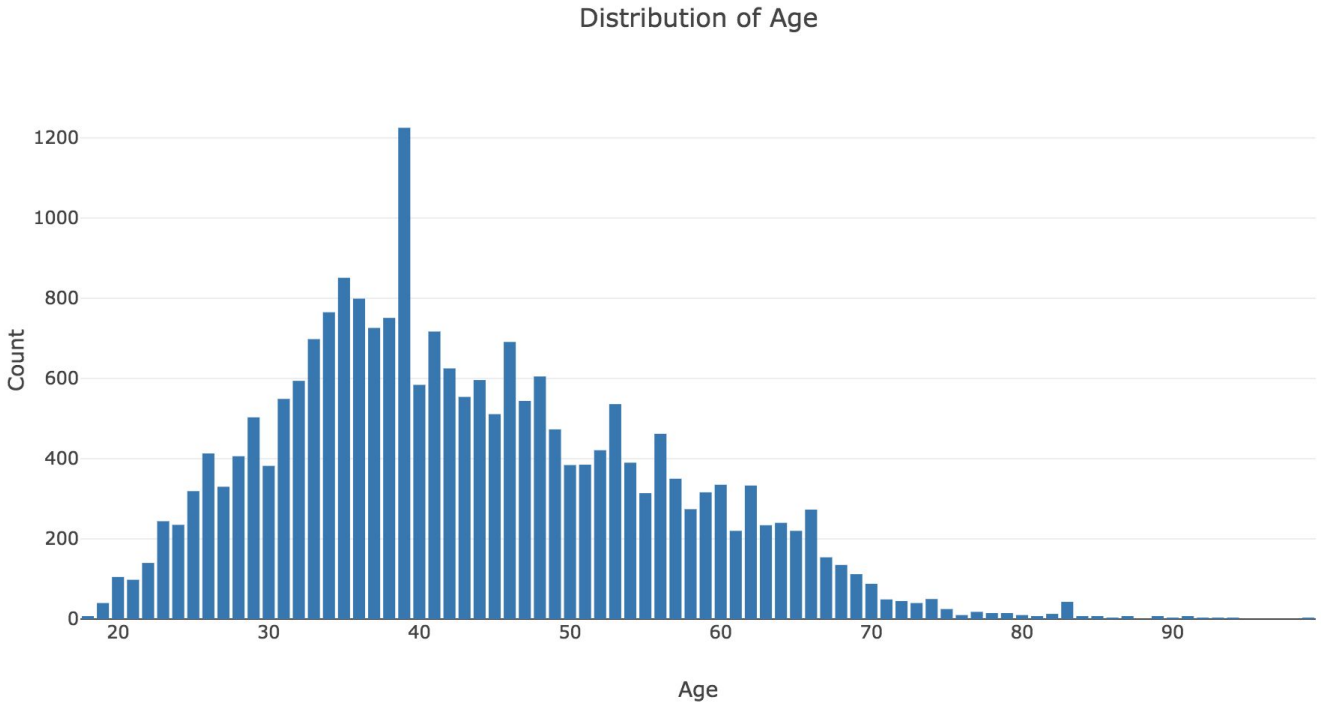
Data

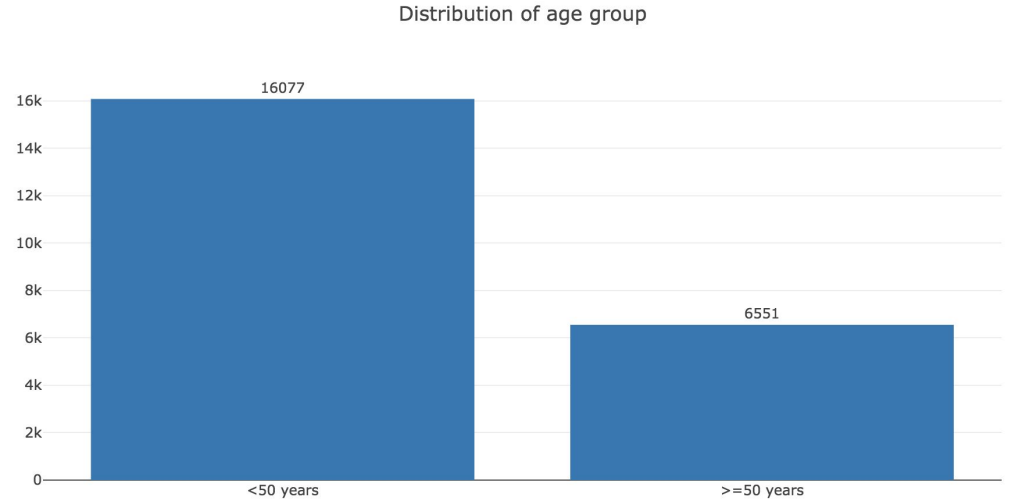
- 22,628 reviews and product information available
- 845 null rows were excluded



Age Bucketing

- Bucketed age into two groups: < 50 years and >= 50 years

	Age	Review Text
0	33	Absolutely wonderful - silky and sexy and comf...
1	34	Love this dress! it's sooo pretty. i happene...
2	60	I had such high hopes for this dress and reall...
3	50	I love, love, love this jumpsuit. it's fun, fl...
4	47	This shirt is very flattering to all due to th...



Age Group 1: < 50

Age Group 1: >= 50

Word Embeddings and Feature Engineering

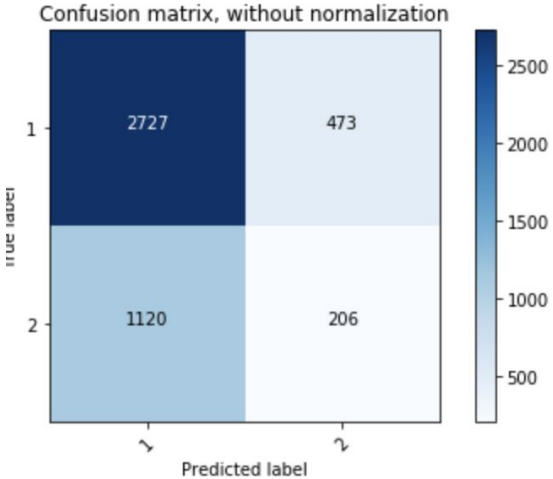
- Cleaned text:
    - Removed stop words and punctuations to remove randomness
    - Considered words of length > 2
- Used Glove embeddings of 200 dimensions to encode reviews
- Calculated mean embeddings of each review
- Feature Engineering: Added columns like Department Name, Division Name, Rating and Clothing ID

Classification Models

- Divided into 80-20 train and test set

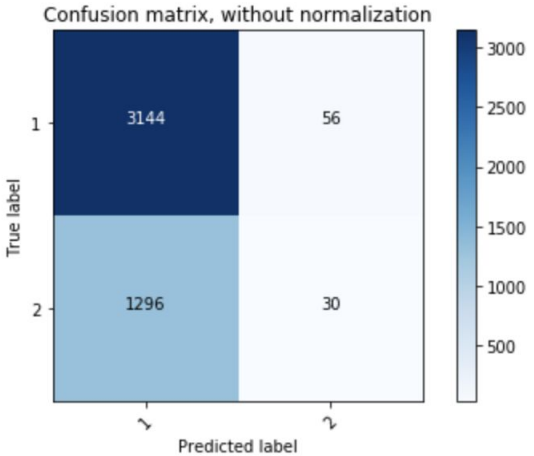
Random Forest

Accuracy: 64%



Logistic Regression

Accuracy: 70%



Classification Model 3: Neural Networks using Keras

```
model.add(Dense(input_dim=200, output_dim=100, activation='sigmoid'))

model.add(Dense(output_dim=6, activation='softmax'))
```

- Used only word embeddings of reviews
- Sequential model with two layers
- Batch size = 32, epochs = 5
- Metrics:
  - Accuracy: 0.80
  - Loss: 0.39