



# Predicting Comment Sentiment

Jillian Clark

# Agenda

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Next Steps/Conclusion

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# Understanding the Problem



Triage Comments  
to Appropriate  
Response Team

...



Protect Brand's  
Reputation

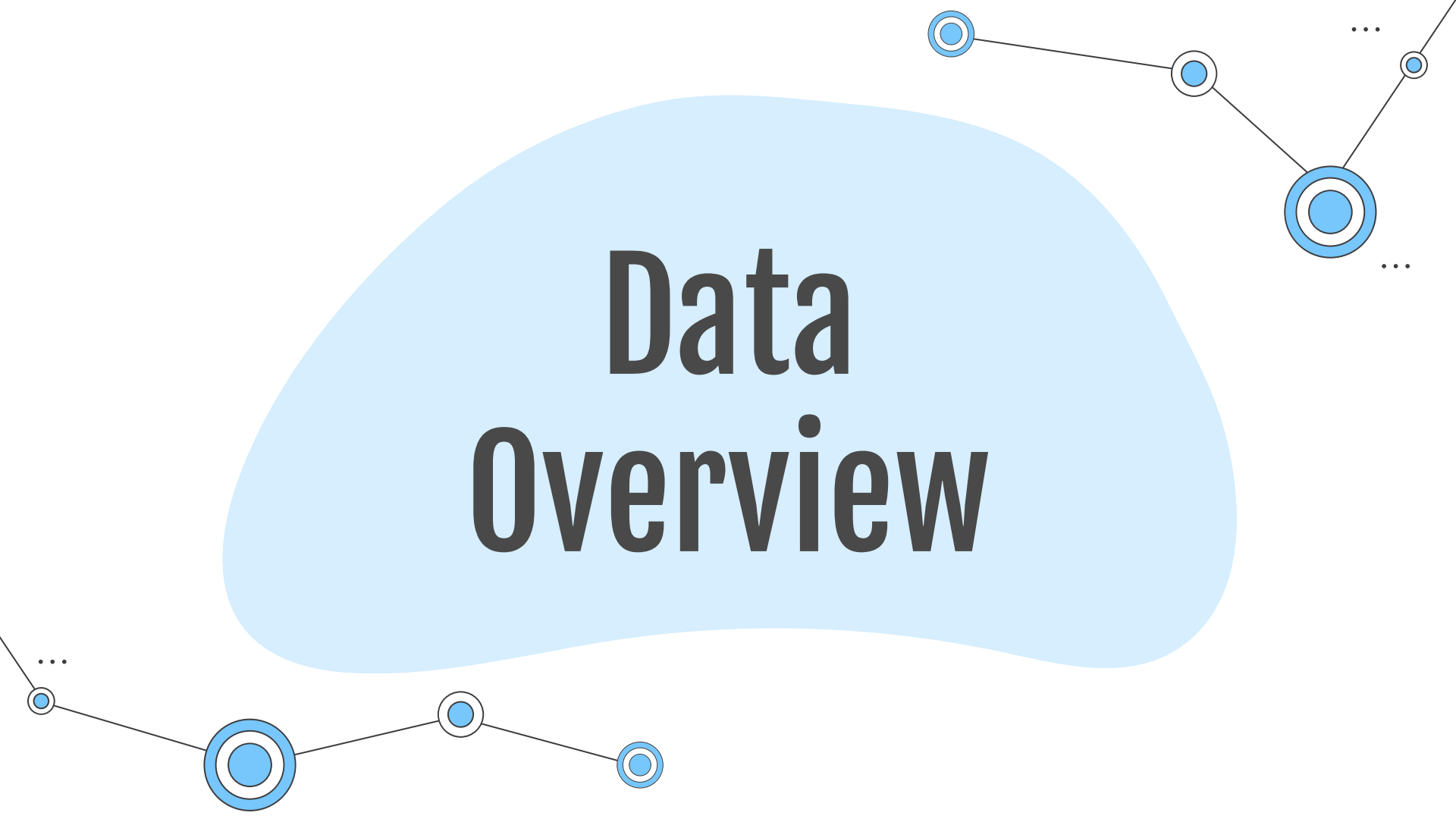
...



Improve  
Customer Loyalty

...

# Data Overview





**23,486 Reviews**

from a Women's E-Commerce Clothing brand

**1,205 Clothing IDs**

of unique products that were reviewed

**Rating Scale 1-5**



# Common Words in Reviews

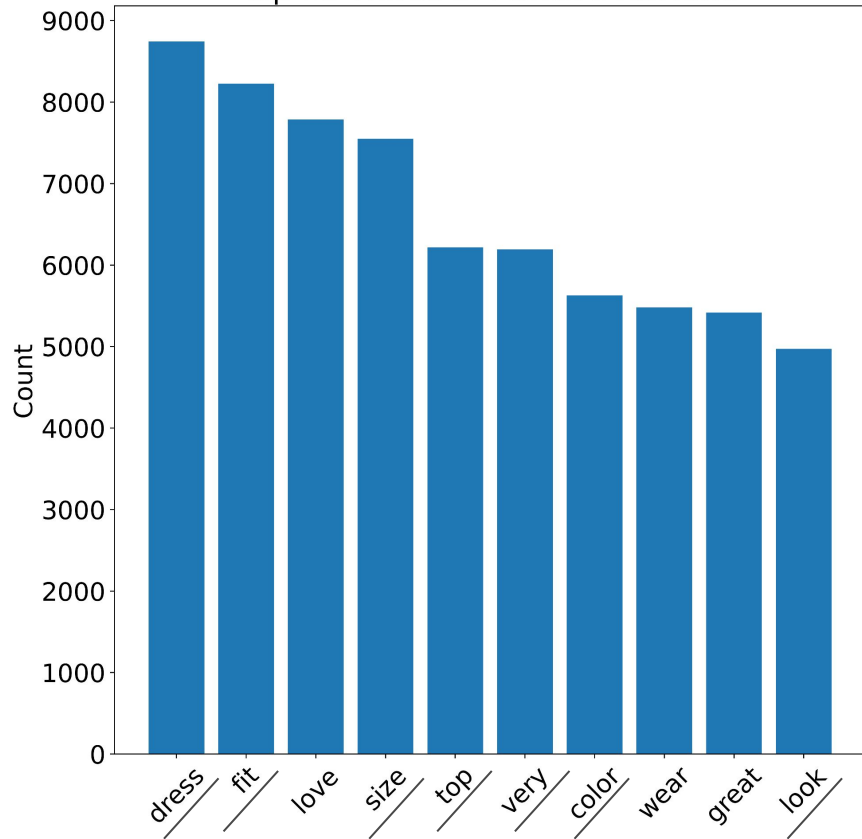




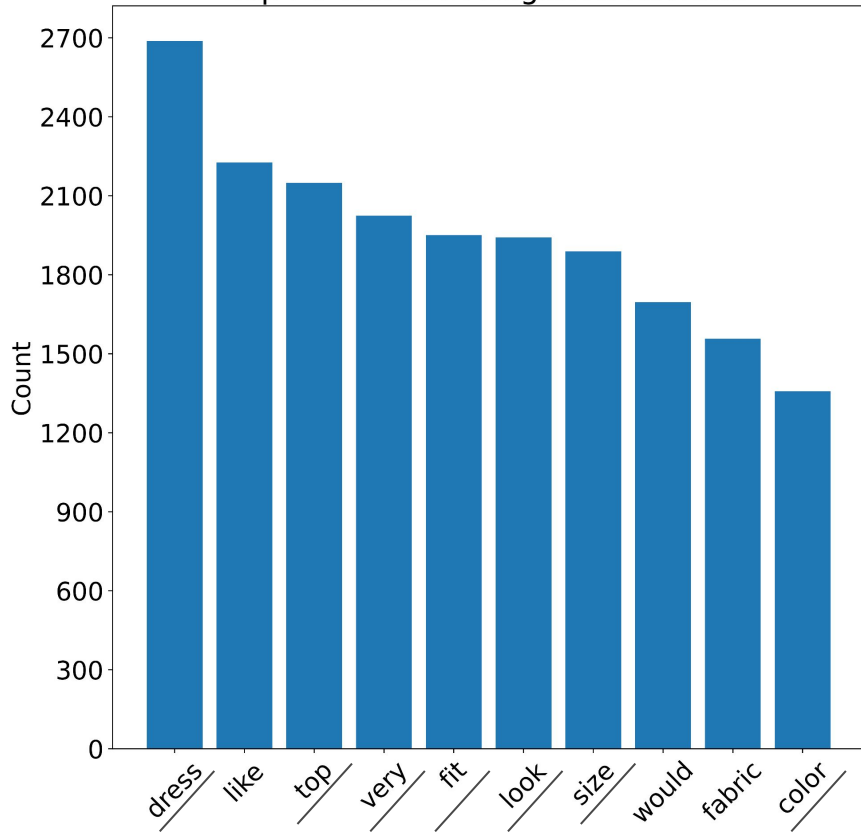
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Top 10 Words in Positive Reviews

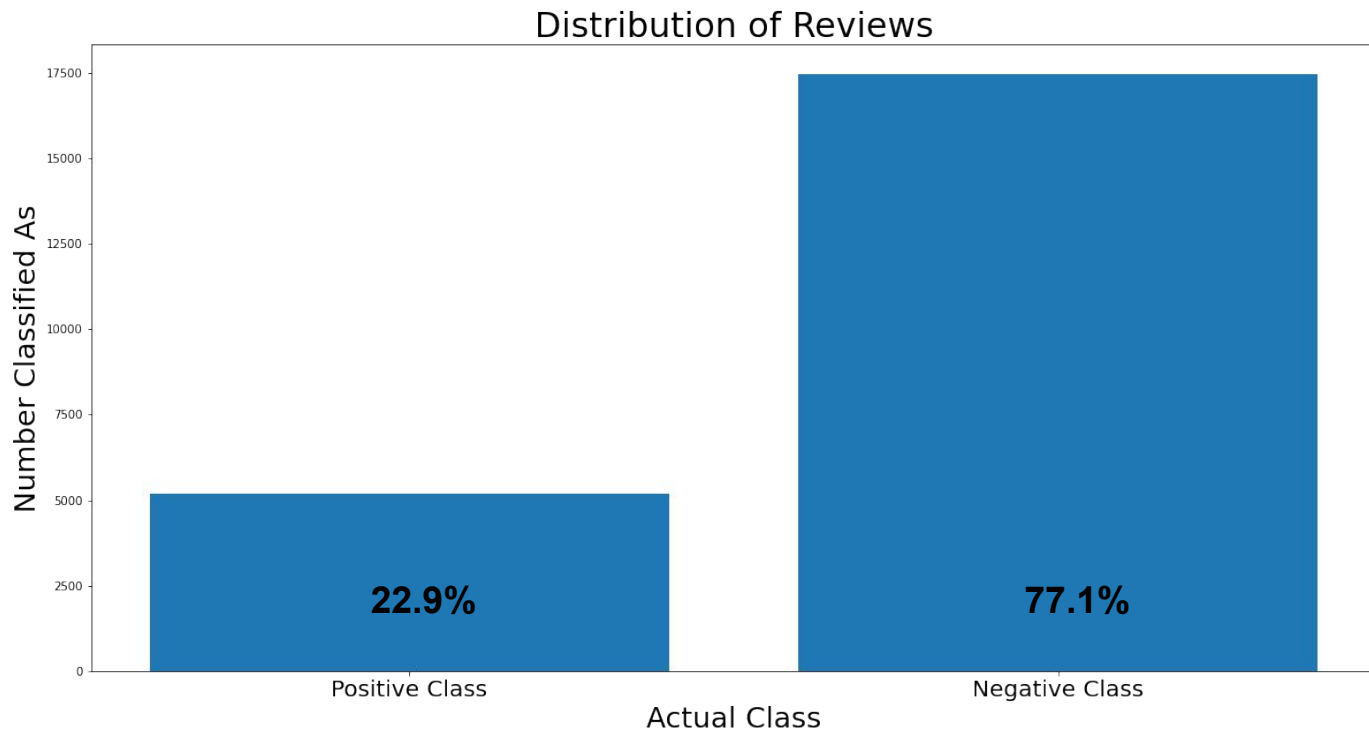


Top 10 Words in Negative Reviews



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# Target

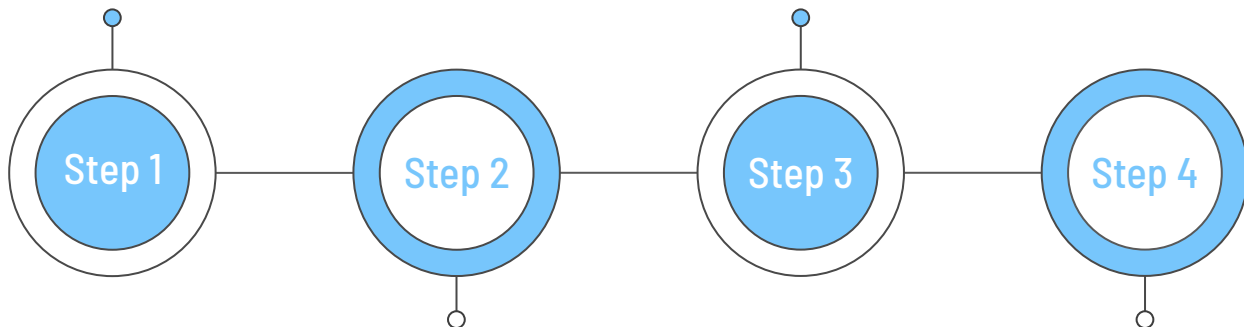




# The Process

Text Preprocessing

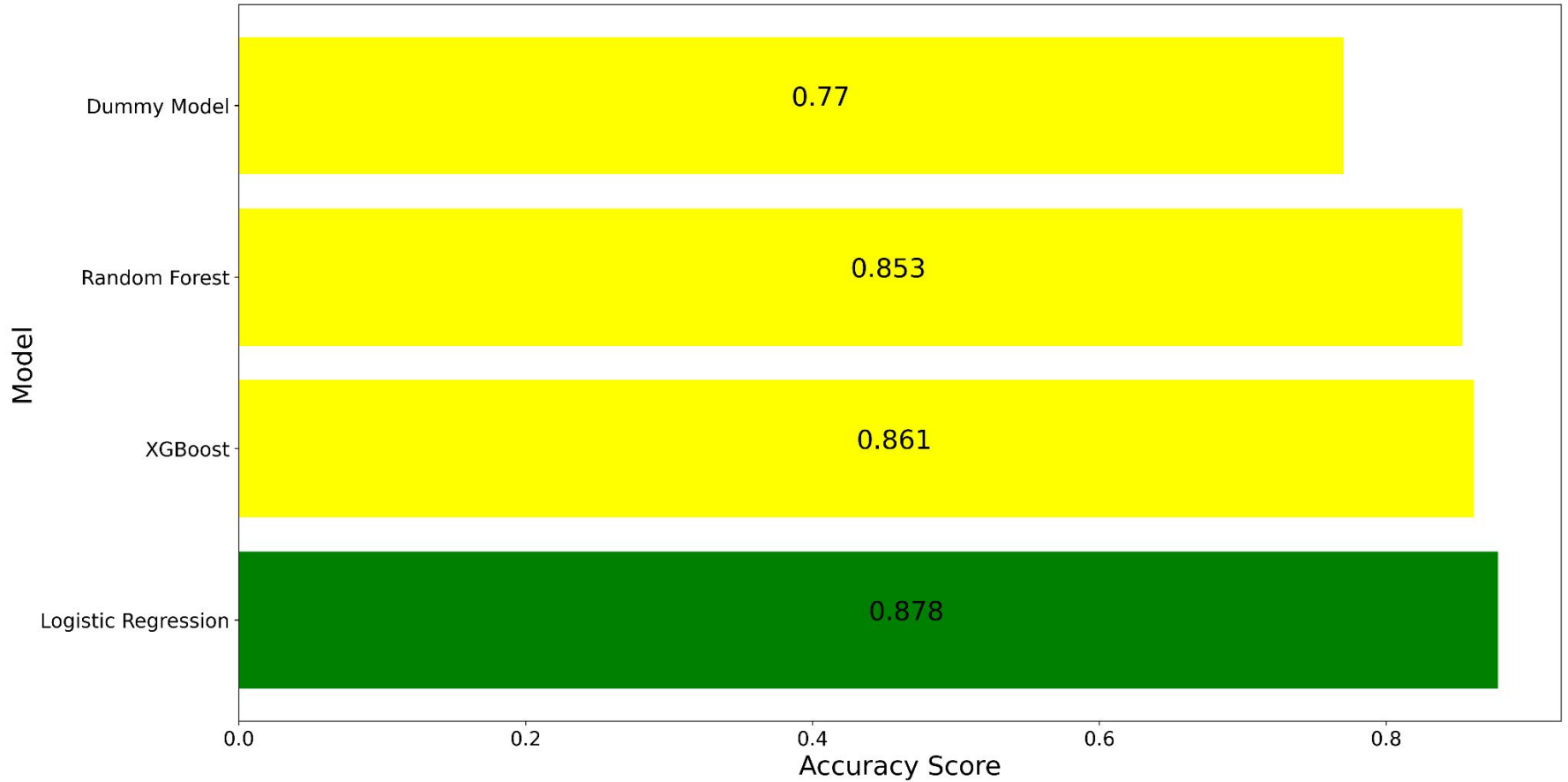
Tuning hyperparameters  
for Logistic Regression,  
XGBoost, Random Forest



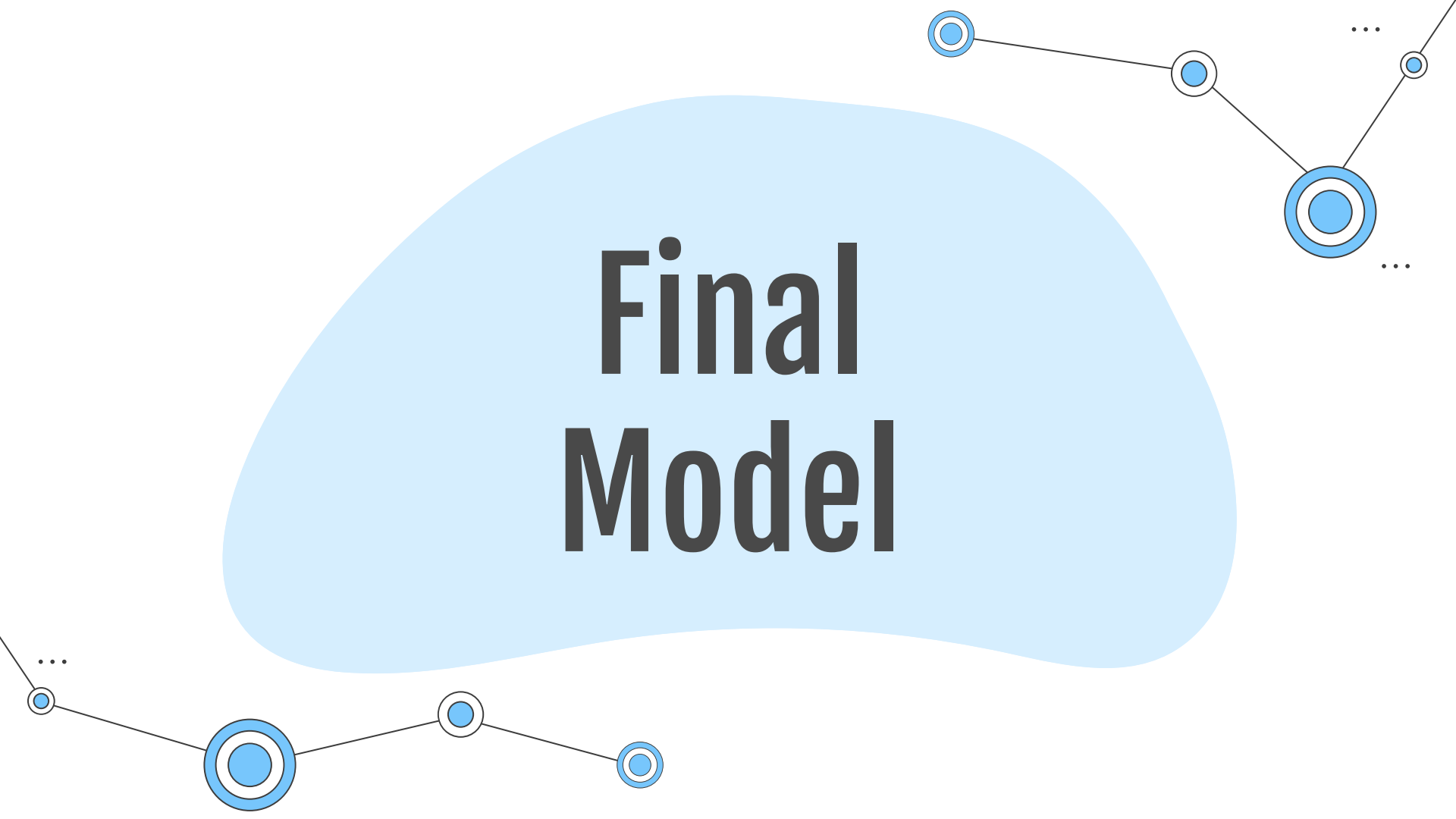
Iterating through many  
models with default  
hyperparameters

Selecting best model  
based on CV scores

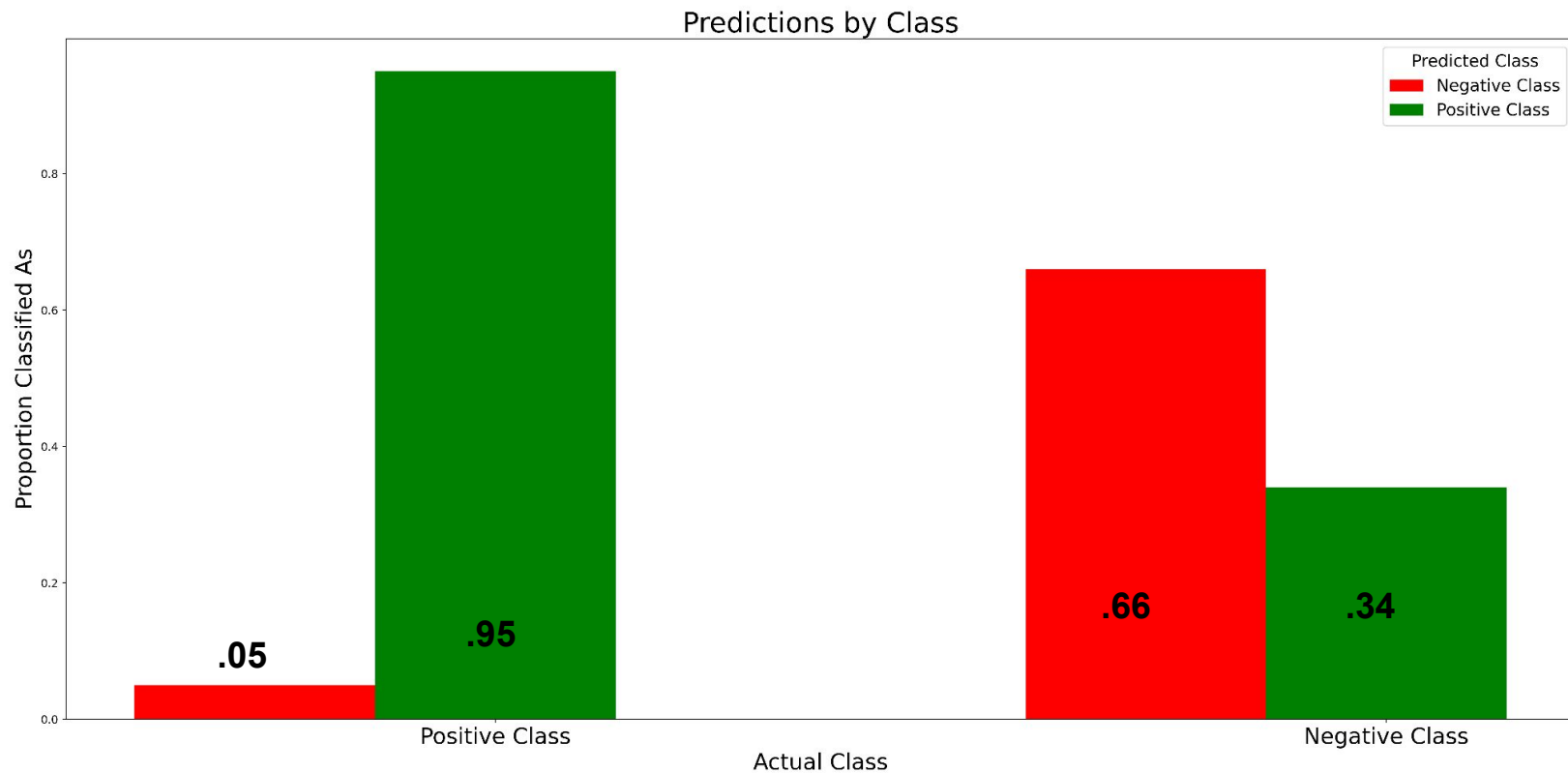
Cross Validation Scores for Models



# Final Model



# Final Logistic Regression Model



# Classifying New Comments

## Positive Tweet

Tweet Predicted\_Class

Queen B said it best 🍷✨ Dress is from @zara Heels @express Watch is @mvmtforher #grwmreel #fashionstyle #zaradress #pinkoutfit #goingoutoutfit #datenightoutfit <https://t.co/t0klk5Ofyi>

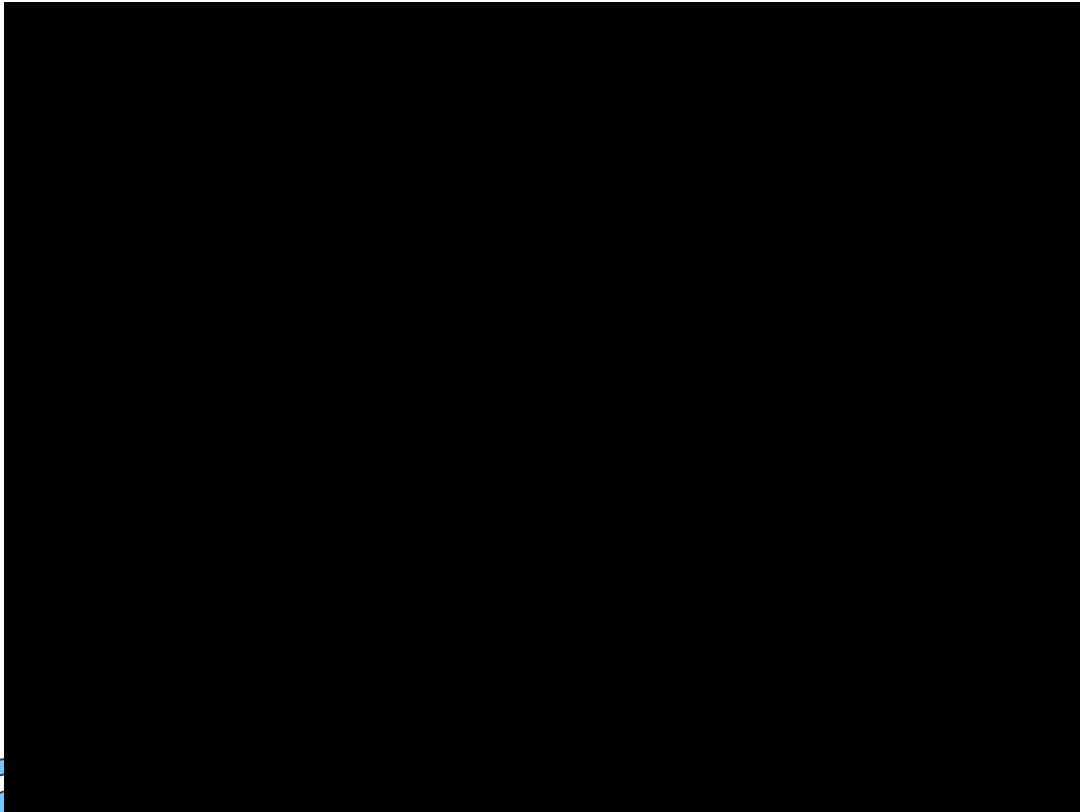
1

## Negative Tweet

Disappointing service from @ZARA. \nOrdered a pair of trousers online and a pair of cargo pants showed up at my door 🙄. Same barcode, so clearly issues at warehousing process. \nPlease sort ASAP. <https://t.co/vMe4JIT5Hf>

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# App Demonstration



# Limitations and Next Steps

- Class Imbalance
- User Error with Initial Ratings
- Create dual classification system-filter out spam first
- Add in “Neutral” classification
- Create custom stopwords list
- Test with more platforms (TikTok comments, blogs, etc.)
- Upgrade and deploy App to perform Twitter API calls based on user inputted query terms

# Conclusion

- Model is generalizable to any platform
- Triage comments quickly
- Capitalize on “free” marketing
- Protect brand reputation with responses
- Improve customer loyalty



# Thanks!

Do you have any questions?

jlc0512@gmail.com

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