

TWITTER SENTIMENT ANALYSIS

PROOF OF CONCEPT MODEL

PREPARED FOR APPLE & GOOGLE

MAY 12, 2021

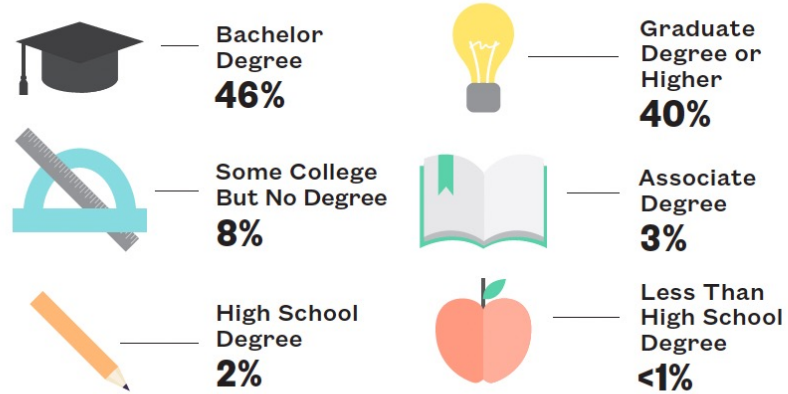
TODAY'S MODEL REVIEW

- SXSW Demographics
- Business Objective
- Tweet Word Cloud
- Sentiment Model Solution
- Next Steps

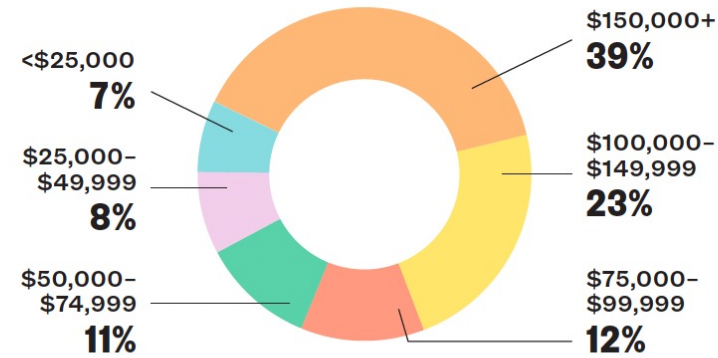
SXSW DEMOGRAPHICS SKEW COLLEGE-EDUCATED, UPPER INCOME & TRENDY

SXSW
Demographics

EDUCATION



HOUSEHOLD INCOME



ALL CONFERENCE REGISTRANTS

HOUSING SITUATION



SXSW 

=
Desirable Market

PREDICTING CONSUMER SENTIMENT

Business
Objective

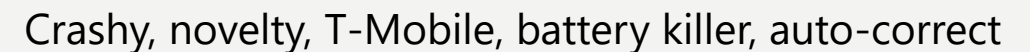
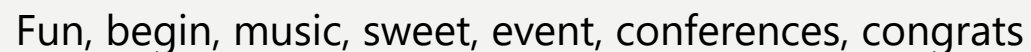
Business Objective: A smartphone consortium led by Apple and Google want to prove via a 2-week proof-of-concept whether Twitter data can be used to detect sentiment with the highly desirable consumers at SXSW.

Requirements

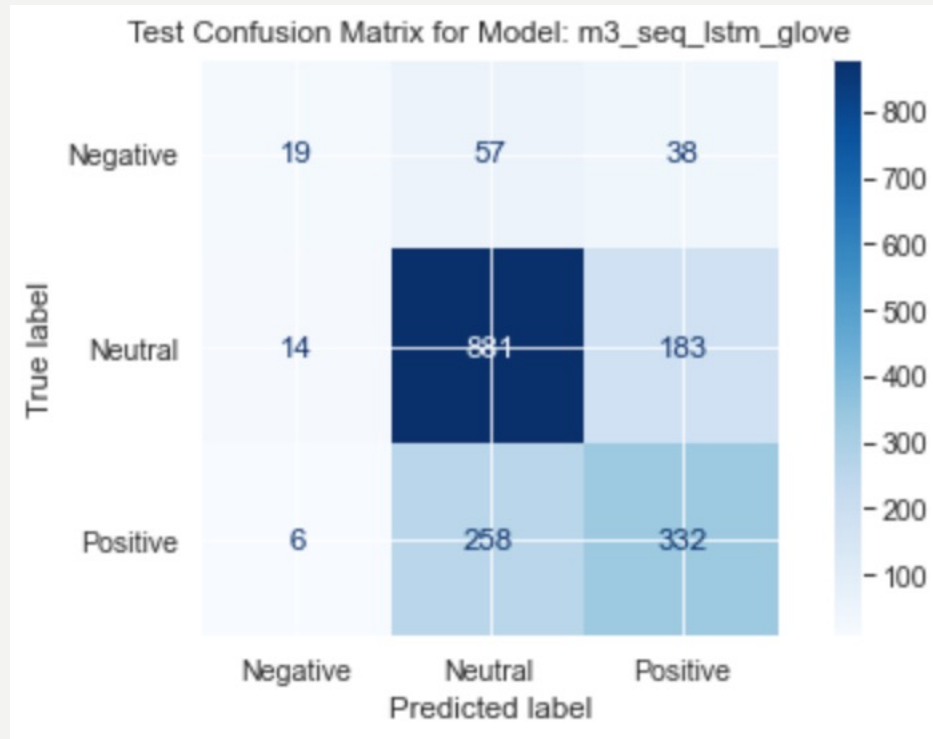
1. Develop predictive model to classify tweet sentiment
2. Explain performance and any limitations for positive and negative model predictions
3. Suggest potential solutions to evolve beyond a POC model



Word Clouds



PERFORMANCE OF OUR BEST (POC) MODEL IS NOT SUFFICIENT



Overall Accuracy

- Model predicted correctly 69% of time
- Best performance on neutral tweets

Negative Tweets

- When predicted, right only 49% of time
- Able to predict only 17% of true negatives

Positive Tweets

- When predicted, right 60% of time
- Able to predict 56% of true negatives

Conclusion: Proof-of-Concept effort shows promise but falls short of usability

PHASE 1 IMPROVEMENT IDEAS

Next Steps

We recommend investing in a Phase 1 project to improve predictive accuracy but addressing these shortcomings in the POC model:

- **Data** – Greatly increase tweet sample size from 9K (only 6% were negative)
- **Use Case** – Work backwards from specific use case goals (actions) to identify tweet patterns
- **Sentiment Scoring** – In addition to human labeling, automate word sentiment scoring
- **Improve Models** – Deeper exploration of parameter tuning in predictive models



Questions?

"In God we trust, all others bring data." – Edward Deming

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THANKS