Training an NLP on Habitual Be A First Step Towards an AAVE-literate Language Learning Model



Morgan Goode



- Degrees in photography + writing
- 15+ years digital marketing/comms for social justice nonprofits
- Data Science Bootcamp @ Flatiron

Fun Fact: Live Storyteller

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Who be eating cookies?



Source: Tense and Aspectual be in Child African American English. Janice E. Jackson & Lisa Green

Dialogue

Cookie Monster is sick and not eating cookies today. Elmo is eating cookies. Ernie only eats cookies on his birthday when his mom lets him. Cat has never had a cookie. Cats can't eat cookies.

Task Questions

- 1. Who be eating cookies?
- 2. Who is eating cookies?
- 3. Who eats cookies?
- 4. Who don't be eating cookies?
- 5. Who doesn't eat cookies?
- 6. Who isn't eating cookies?

Correct Responses

- 1. Cookie Monster
- 2. Elmo
- 3. Cookie Monster, Ernie, Elmo
- 4. Cat, Ernie, Elmo
- 5. Cat, Ernie
- 6. Cookie Monster, Ernie, Cat









Agenda





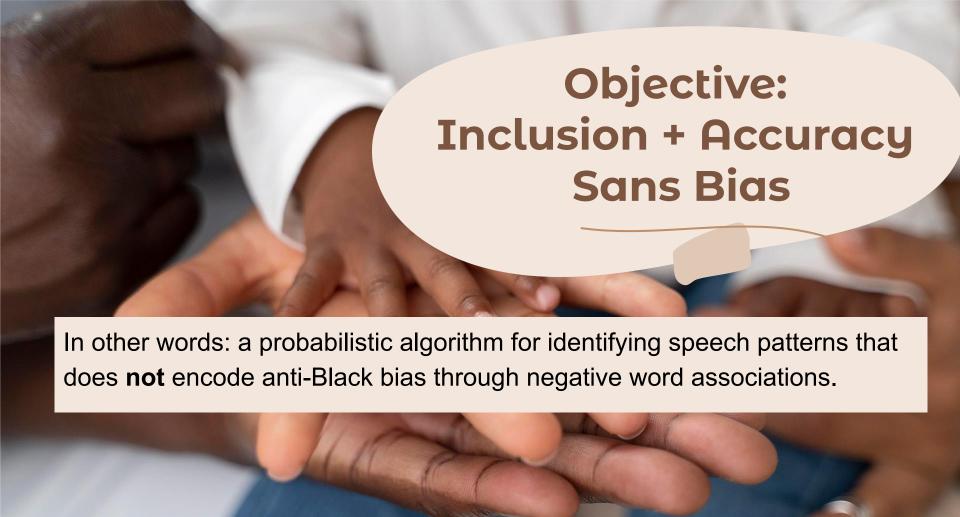
Data Overview

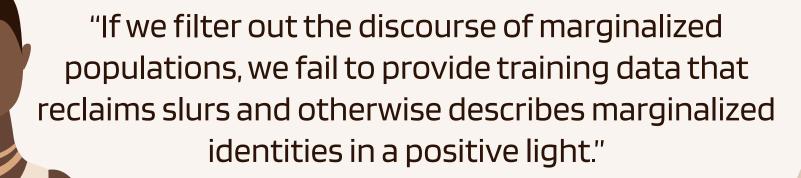






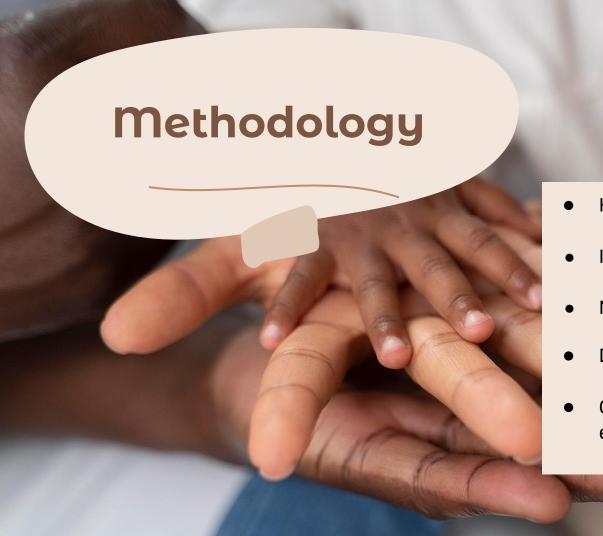






— On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?

Source: On the Dangers of Stochastic Parrots: Can Language Models Be Too Big? Emily M. Bender, Timnit Gebru, Angelina McMillan-Major, Shmargaret Shmitchell https://dl.acm.org/doi/pdf/10.1145/3442188.3445922



- Hand curated dataset
- Including 'stop words'
- No filtering of obscenities or slurs
- Data documentation
- Ongoing corpus edits/expansion to ensure balance and mitigate bias



Data Overview



2K Corpus

Manually Compiled + Tagged



Native AAVE speakers

In all habitual be records + most present be records

Data Limitations + Room for Improvement



Team of One

Collaboration with stakeholders is a must



No Sentiment Analysis (Yet!)

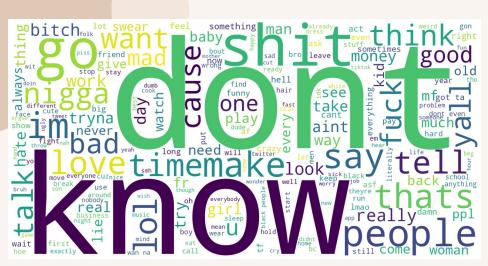
Imbalanced sentiment could contribute to bias



Speaker Diversity

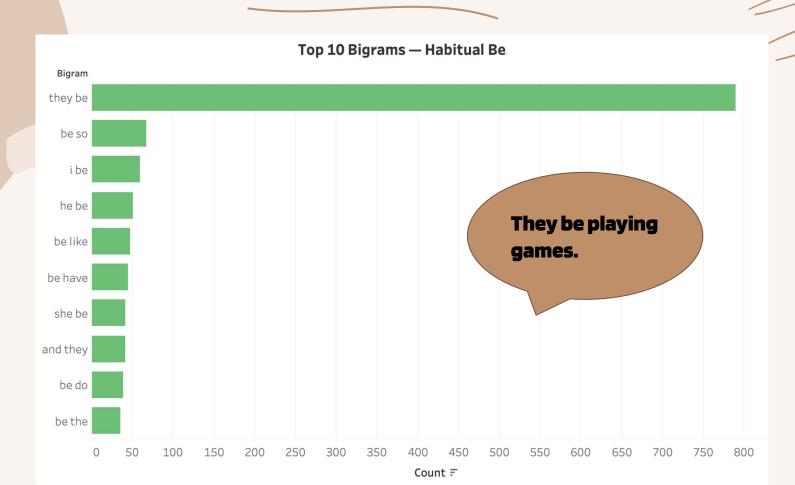
Curate and confirm balanced representation across age, class, gender, sexual orientation, location, and other demographics

Habitual Be Sentences Contain More Curse words

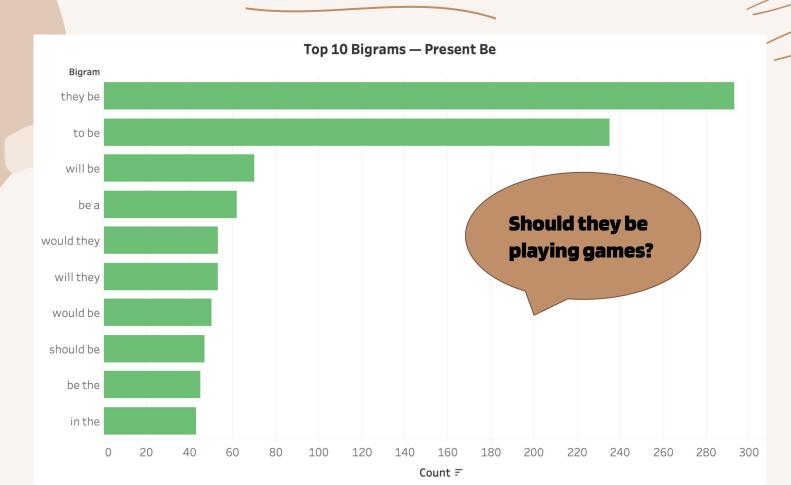


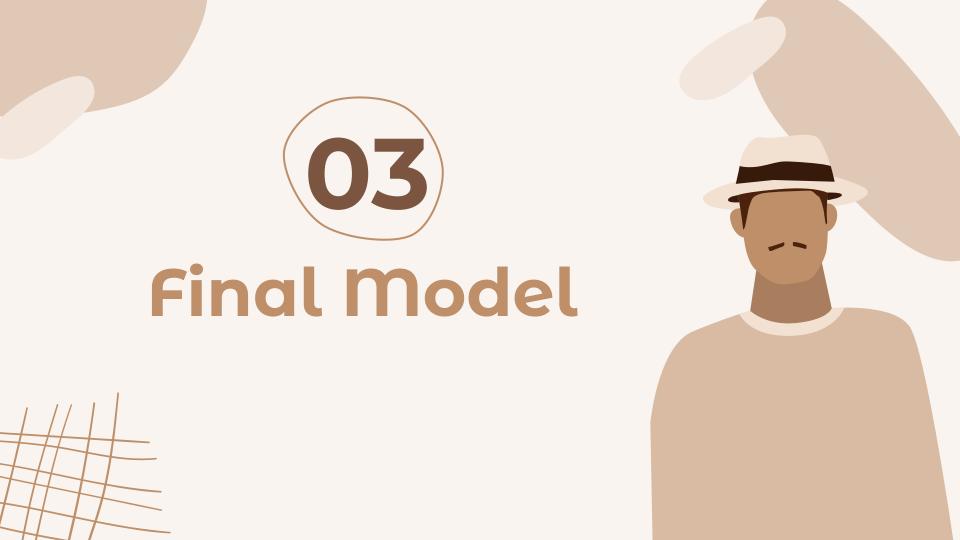


Bigrams are Key

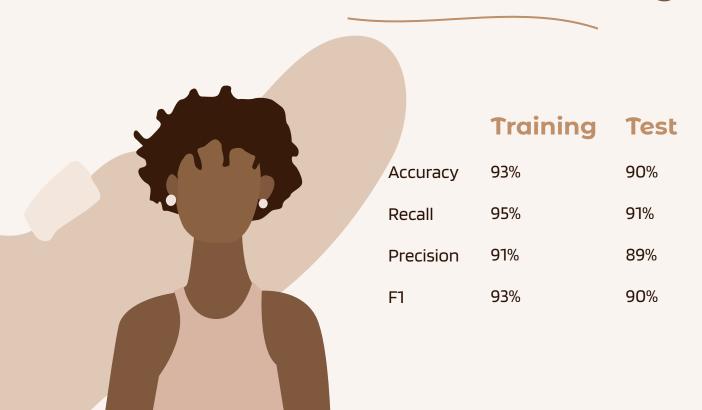


Bigrams are Key





Multinomial Naive Bayes







Edit + Expand Corpus

In collaboration with other AAVE speakers + linguists

Model **Iterations**

support vector machines + neural networks

Train models

Incorporate more features of AAVE







Thank you!

Any questions? Drop them in the Q & A!

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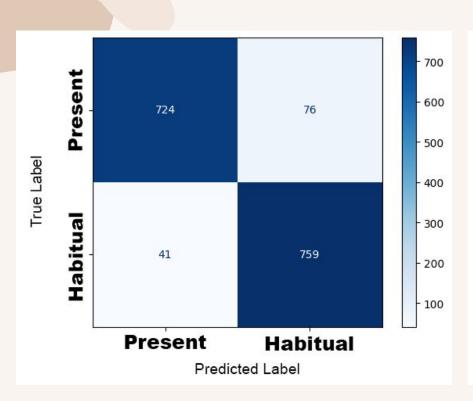
Appendix

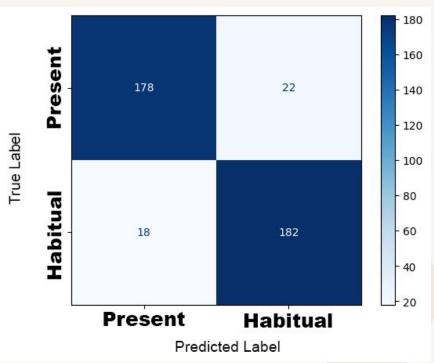


Confusion Matrices

Train

Test





Sources & Further Reading

- Emily M. Bender, Timnit Gebru, Angelina McMillan-Major, and Shmargaret Shmitchell. 2021. *On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?* In Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency (FAccT '21). Association for Computing Machinery, New York, NY, USA, 610–623. https://doi.org/10.1145/3442188.3445922
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