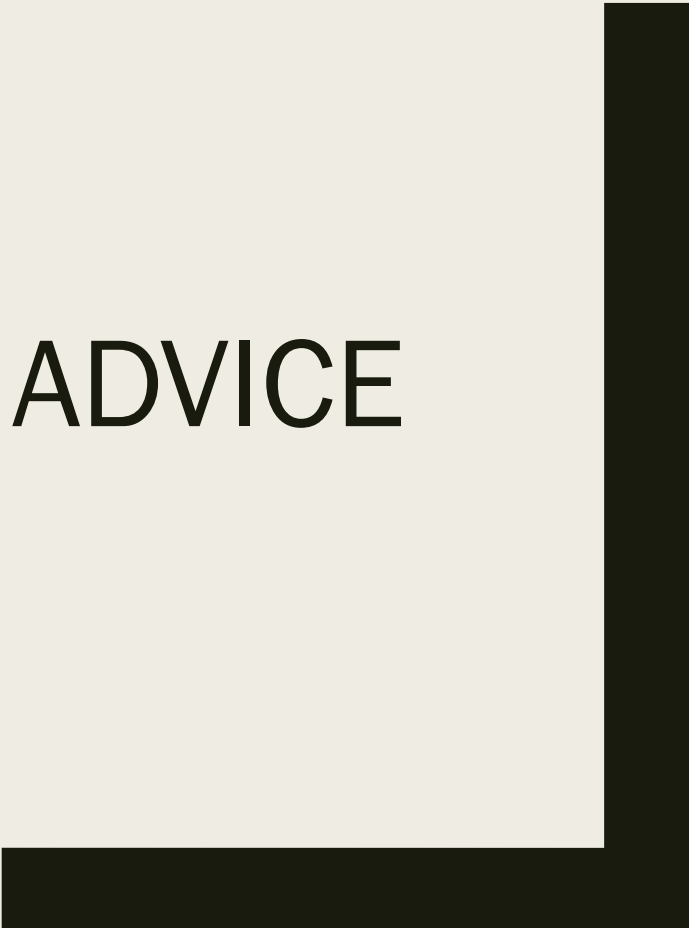




# GPT-2'S RELATIONSHIP ADVICE

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With thanks to mentors Ben Bell  
and DJ Sarkar, & to Max Woolf for  
making GPT-2 accessible!



# The Business Problem

- How can we use models such as GPT-2 (Transformers, LSTMs, RNNs, and others) to help with human issues (such as giving relationship advice) cheaply and accessibly?

# The Data

- Scraped from the relationship\_advice Subreddit on Reddit.com
- 1MM posts; 3MM comments
  - *For EDA, sampled 80k posts & 80k comments to do full analysis*
- GPT-2 model, after training, to be posted onto a streamlit.io site for others to ask and receive answers.

# Exploratory Data Analysis

- Wordclouds on Titles, Body of Posts, & Comments
- Polarity (using TextBlob) on the text
- Reading Level (Flesch-Kincaid scale)
- LDA (Latent Dirichlet Allocation) on both Titles & Comments
  - *Vectorized using Word2Vec*

# Title Wordcloud



# Post\_Body, Comments Wordclouds



# GPT-2 – Description & Results

- Open-source model developed by OpenAI.
- Able to ‘learn’ without training
- Can translate text, summarize passages, and answer questions.
- Trained for 8,000+ steps
- Kept creativity (‘temperature’) at 0.7
- GPT-2 generated text every 200 steps of training

# Notable Findings

- LDA emphasized a single cluster for both titles and comments.
- Occasionally cogent posts, but almost always the wrong advice.
- Where incoherent, still able to express a human-like arc in its “thinking” and approach to comments.
- Strong spelling and grammar
- Interesting punctuation decisions.



# Sample Generated Advice

## ■ Bad:

*the best thing to do is to do nothing: and just let it be. that way: you will be fine: and she will be better off as a person. be your own best friend: not her crush! good luck: and be ready to make that girl your friend!*

# Sample Generated Advice

- OK: [Prompt: help my girlfriend cheated on me with my best friend]

*she's already done it to you and you can't control her. it's not your fault: it's not your fault: and it's not your fault to deal with it. and even if you do it: you can never trust her to not cheat on you again.*

# Sample Generated Advice

- Surprising (two entries):

*it sounds like you need to live on your own. you are going to work yourself up for this: but you really can't take all that for granted with the constant fear of leaving. living on your own is a great way to build yourself up for the future.*

*also: this is a very bad time for relationships. we typically get stuck in the dating phase. it's not healthy for us to be in a relationship if we're expecting it to last.*

# Future Directions

- Use PSAW to pull scores and delete all comments beneath certain upvote count (e.g. 50).
- Train on more steps (30,000+?).
- Train on GPT-3.
- Include the body of the post in training as information for the prompt.

Thank you!