Project Goal
- Identify sarcasm in conversations
- Examine context and circumstances that provoke sarcastic responses
- Analyze linguistic cues and user attributes that correlate to high sarcastic behaviour

Motivation
- Help distinguish between incorrect information and sarcasm
- Help people prevent sarcastic responses in their comments
- Sarcasm can give the feeling being left out
- Sarcastic responses not normally desired (negativity)
- Prevent borderline cyber-bullying
- Gain a deeper understanding of human psychology and contribute to linguistic analysis

Methods
- Logistic Regression (Khodak), fine-tuned BERT model and BERT+CASCADE model on response, parent comments, and parent+response
- Analyzed data further in context and user based features subjectivity, number of special characters, word/sentence length, and profanity and user writing/personality style, subreddit
- Train feature based to determine which features most impact our results

Proposed Architecture - BERT+CASCADE
- BERT+CASCADE Construction
  - Original CASCADE (Hazarika) trained user embeddings utilizing user writing style and user personality interests
  - We utilize BERT model instead of CNN architecture

Conclusion and Future Goals
- BERT+CASCADE produces worse results with only response compared to BERT variant. For parent response, BERT+CASCADE was better than BERT
- User info properly complements parent comment context

Feature Model Results
- We train a XGBoost model to predict sarcasm utilizing context, background, and user related features
- We find most that the significant features are subreddit and sentimentality
- User history and writing style are major user related features

References