Sentiment Analysis of AI

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Problem Statement and Analysis

On average, many people have differing opinions on the topic of Artificial Intelligence. This leads to many different ideas on the ethical considerations that should be taken into account when building AI, the legal regulations that should surround AI, and implications of AI. Noting down the sentiment of the public can guide towards better ethical considerations, better legal regulations, and reduce the negative implications of AI, so it is being used to help the general public and therefore boosting the sentiment attached to it.

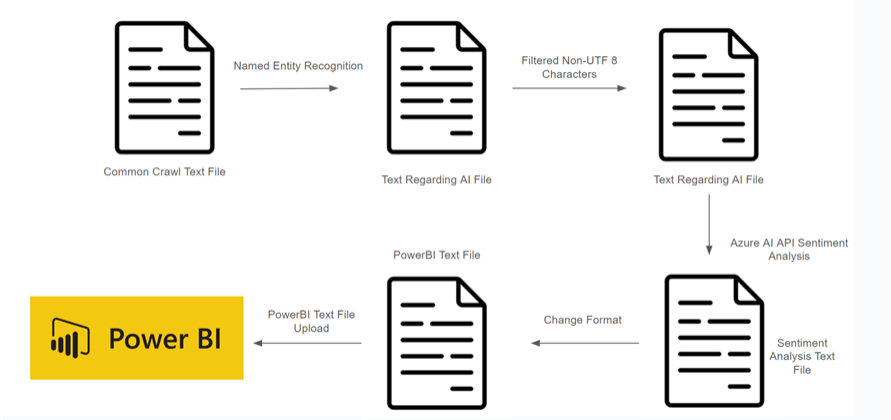
Use Case Scenarios

Sentiment analysis on the topic of AI can be used in a wide variety of ways:

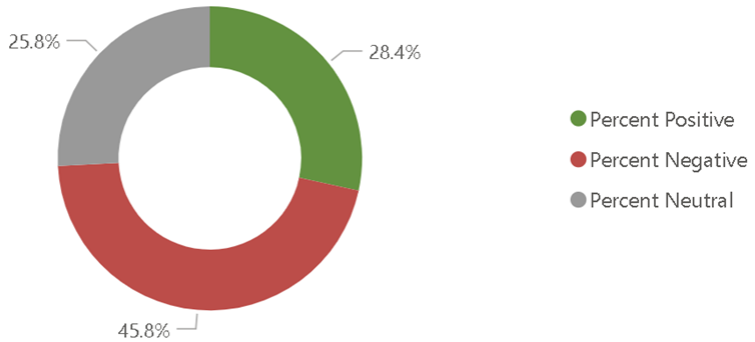
- Create more ethical decision boards
- Lead to legislative changes on the topic of AI
- Diagnose issues with recently established policies
- Prohibit or expedite growth of AI
- Monitor public opinion for irregularities

Methods - AI Algorithm and Model

- The AI Algorithm utilized in this sentiment analysis model was an Long Short Term Memory (LSTM) model
- Model was trained on 8 million lines of text from Common Crawl API
- Used Microsoft Azure Named Entity Recognition (NER) to label categories of “positive” and “negative”
- Used NER to find and extract portions of text relating to the topic of AI
- Built PowerBI Dashboard to represent and monitor the results of the model



Results



- For NER model:
  - F1 score, precision, and recall were all 91.16%
  - Some discrepancies between the labels we generated and the labels that the model generated (false positives and false negatives)
- Sentiment Analysis:
  - Overall, model did decent but sentence by sentence evaluation of sentiments was sometimes inaccurate
  - 45.8% of sentiment towards AI was negative, 28.4% of sentiment towards AI was positive, and 25.8% of sentiment towards AI was neutral
- PowerBI Dashboard:
  - Constructed dashboard to monitor public opinion on AI at a very general level and at a much more granular level

Lessons Learned

- Learned a lot of different technical skills
  - Common Crawl API
  - Azure Named Entity Recognition
- Learned that Named Entity Recognition is hard especially when the topic is AI
- Learned that the general public dislikes AI

Questions?