



Drug Reviews Analysis

By
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A photograph of a doctor in a white lab coat holding a pair of glasses, engaged in a conversation with a patient wearing a blue shirt. The scene is set in a clinical environment, with the doctor's hands and the patient's torso visible. A semi-transparent white box is overlaid on the left side of the image, containing the title and a list of bullet points.

Problem Statement

- Predict condition based on patient review
- Predict sentiment based on patient review

Business Value

Classifying patients conditions and sentiment of the review can be used as a foundation for recommending system.

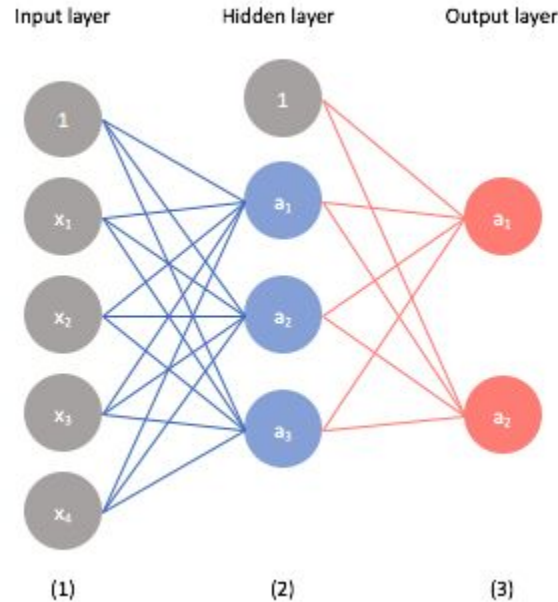


Methodology

Deep Neural Networks:

- Dense
- Convolutional

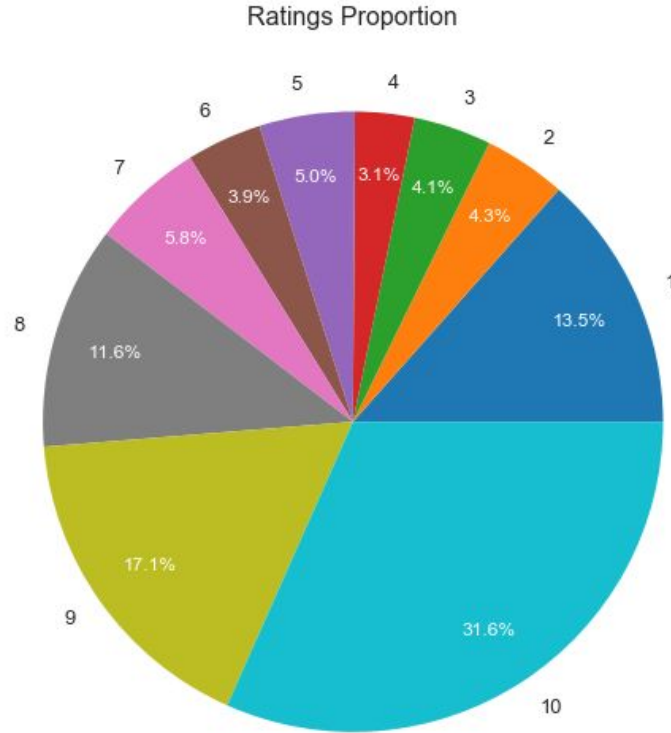
with hyperparameters tuning



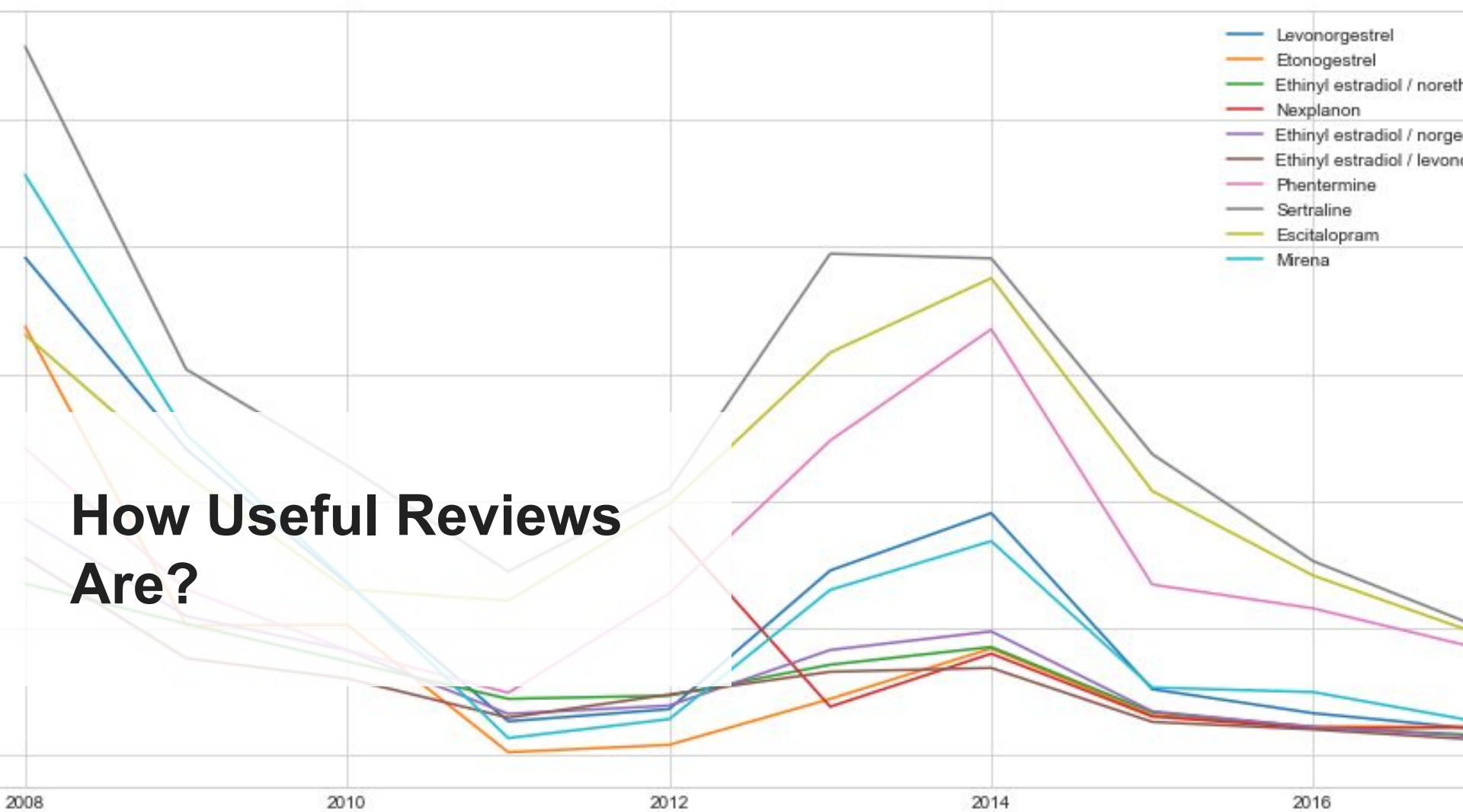
Drugs Satisfaction

Patients tend to write a review when they have very good or very bad experience with medication.

Approximately 60% of reviews have positive sentiment



How Useful Reviews Are?





Condition Prediction

Model predicts patient condition with 85% accuracy

Sentiment Prediction

Model predicts sentiment with 82% accuracy

Patient satisfaction survey
In thinking about your most recent experience with us,
was the quality of the medical service you received:

☒ Excellent!

☐ Very satisfactory

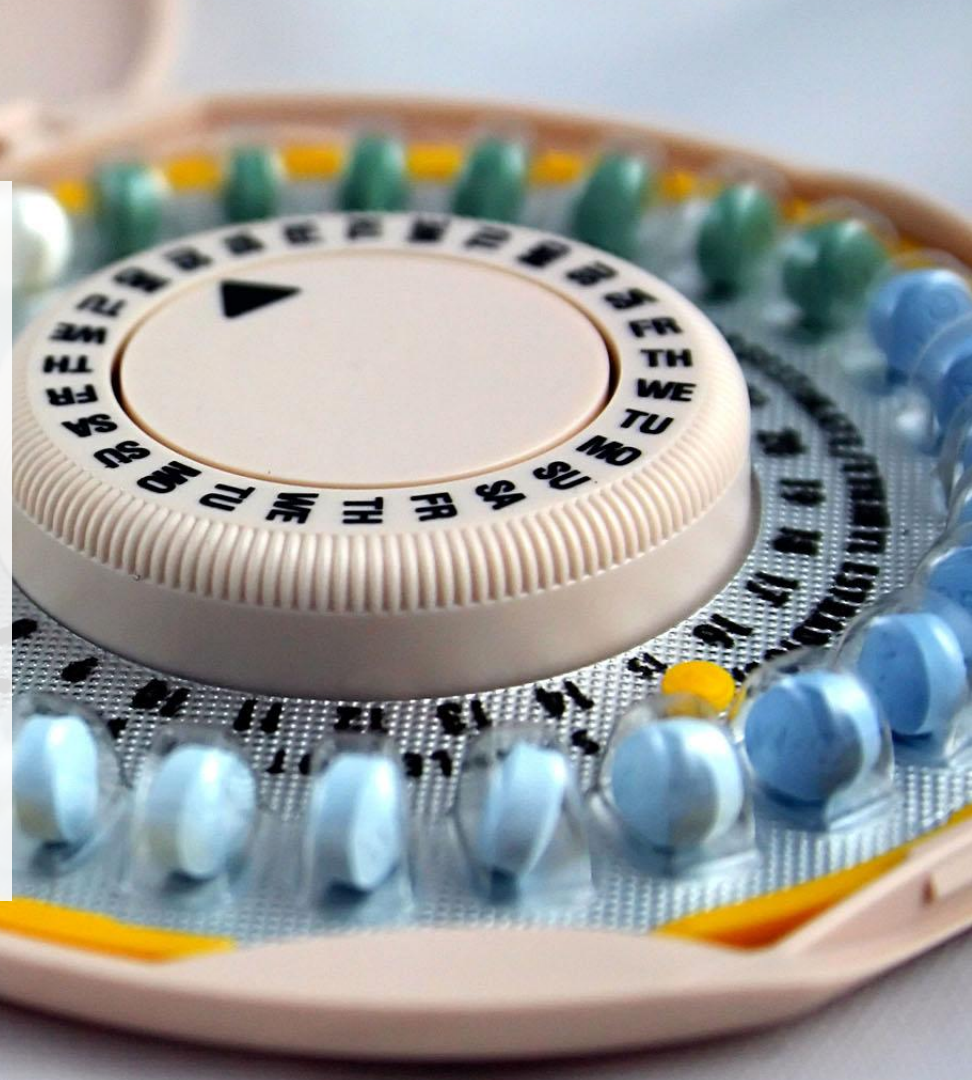
☐ About average

☐ Somewhat unsatisfactory

☐ Very poor!

Birth Control Drugs' Differences

10 most used drugs for birth control have a lot of similarities. Model was able to classify drugs with 55% accuracy, because patients used similar words and phrases to describe their experience.



Future Work

- Extract side effects from reviews
- Use bigrams/trigrams in training process to increase precision
- Lay out foundation for recommending system

