

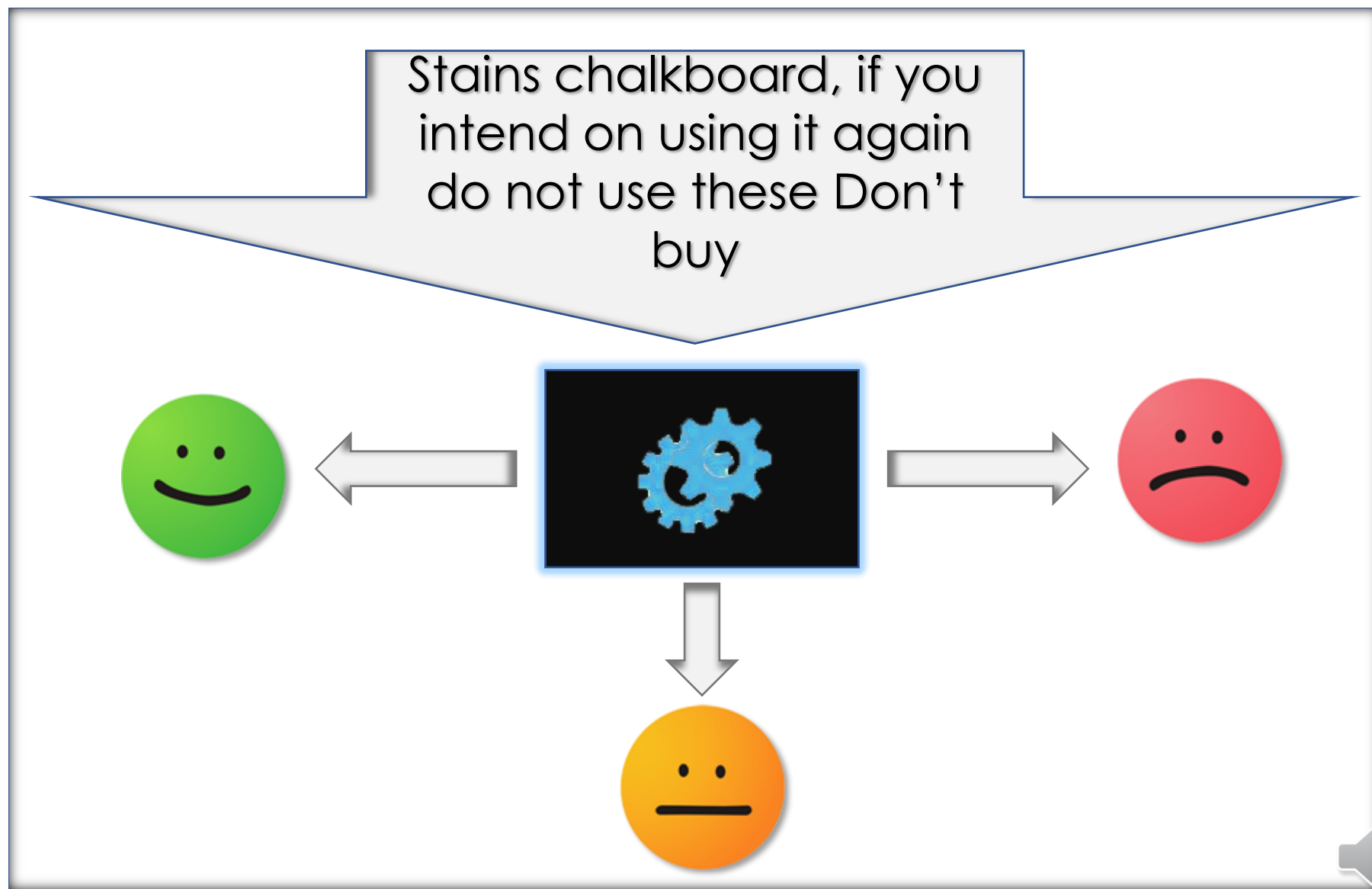


Sentiment Analysis with Machine Learning

By Collin Loo



What Is Sentiment Analysis



Objectives

Business Case

- ❖ Classify reviews to identify product weaknesses

Approach

Develop two machine learning models:

- ❖ Support-Vector Machine
- ❖ Neural Network



Obtain Data

Data Source

❖ <https://nijianmo.github.io/amazon/index.html>

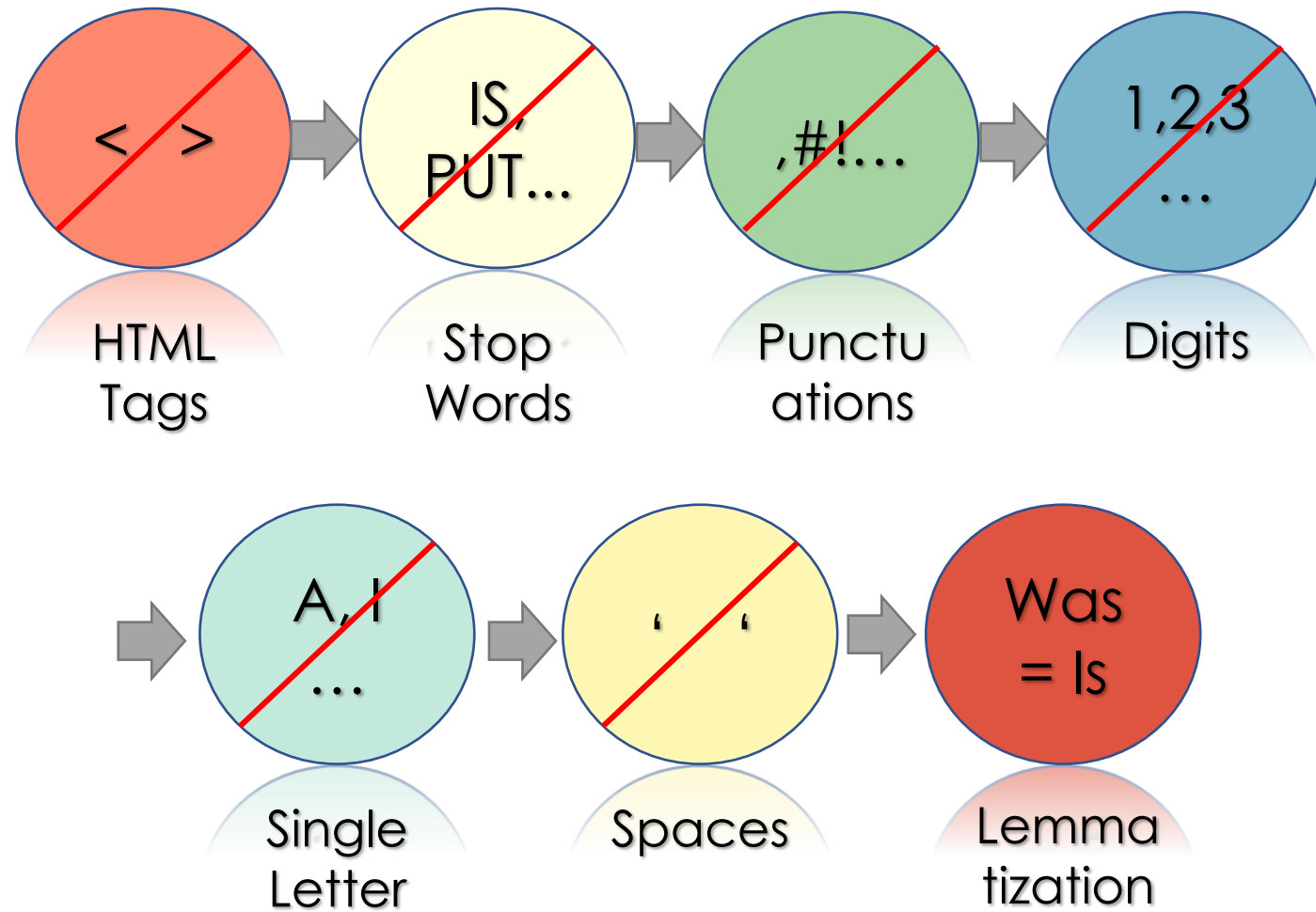
Model Data Summary



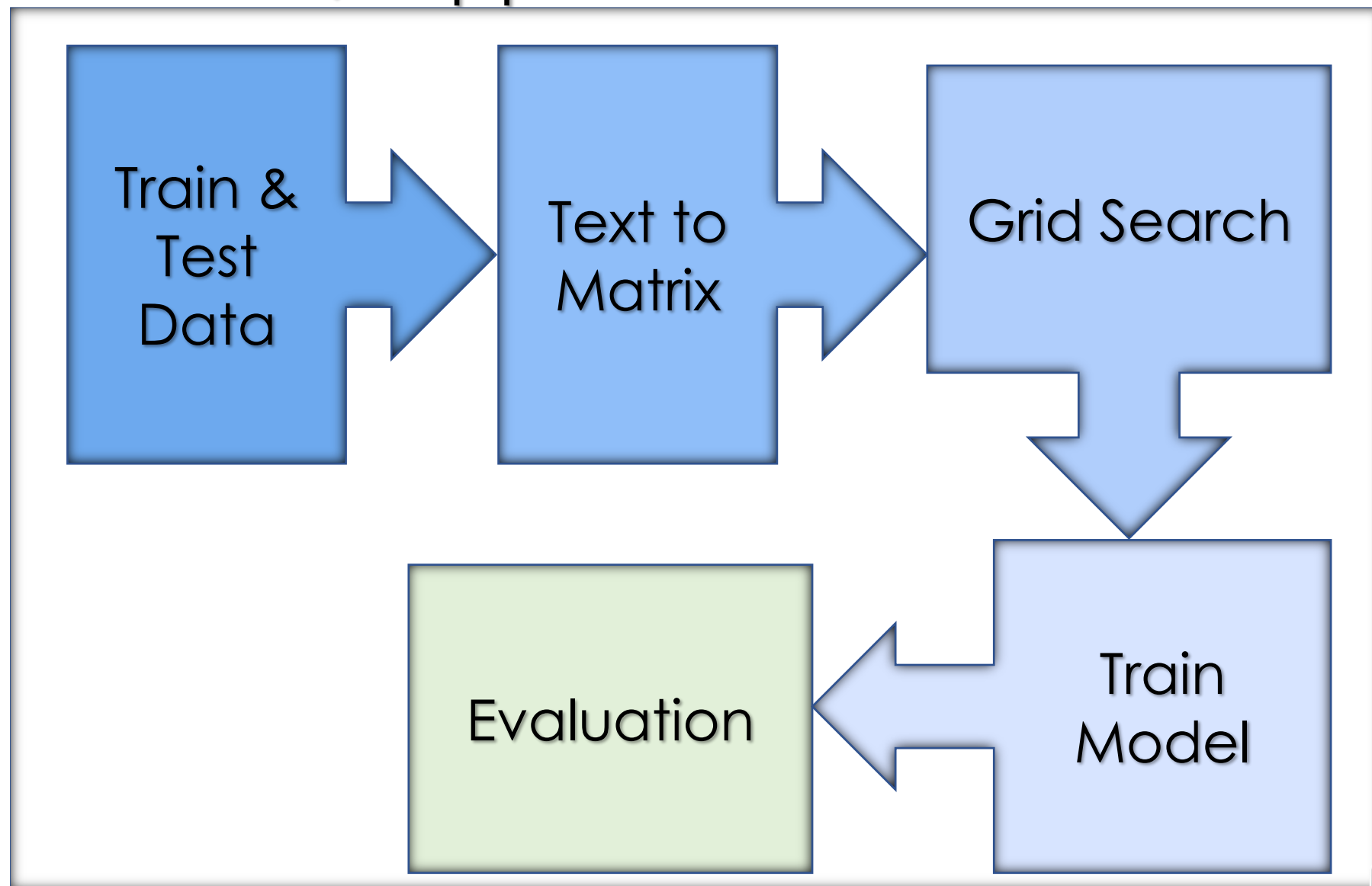
- ❖ Bigger font = more frequent words



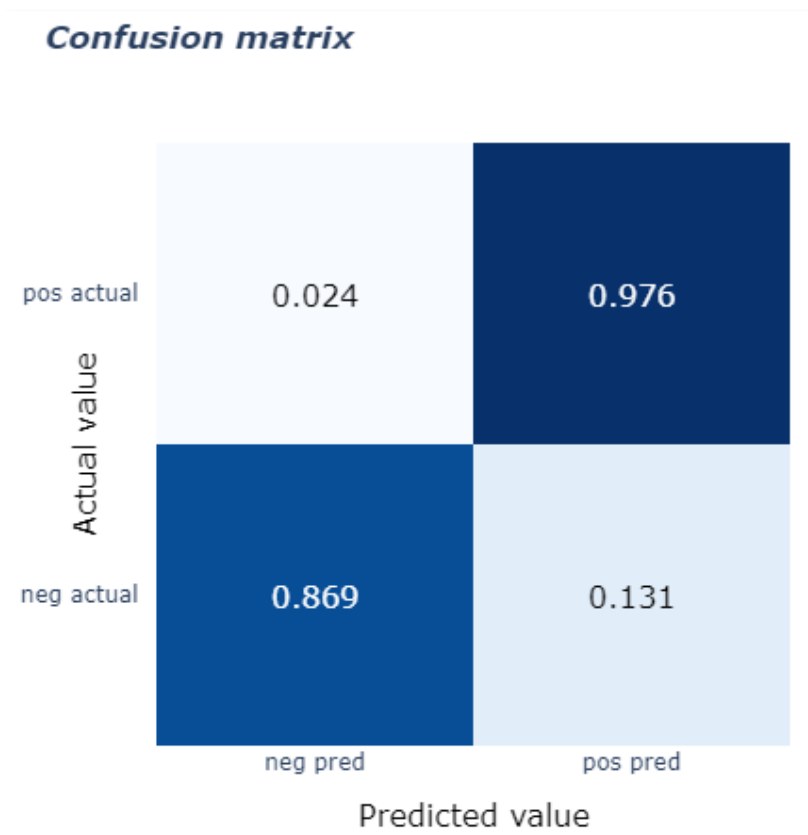
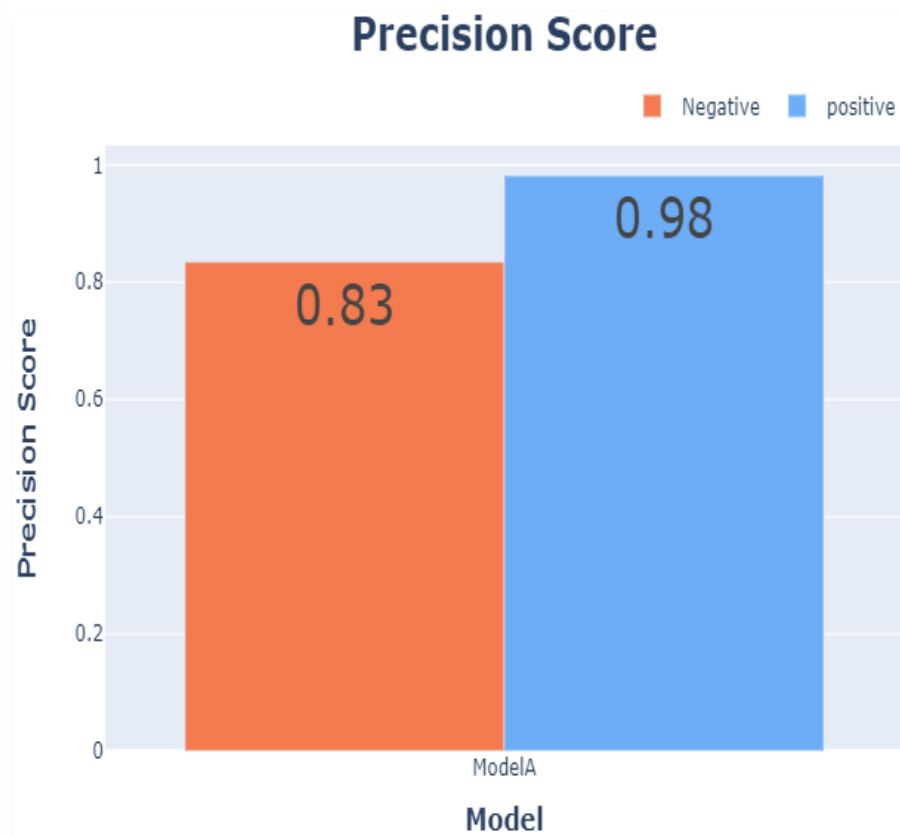
Text Processing



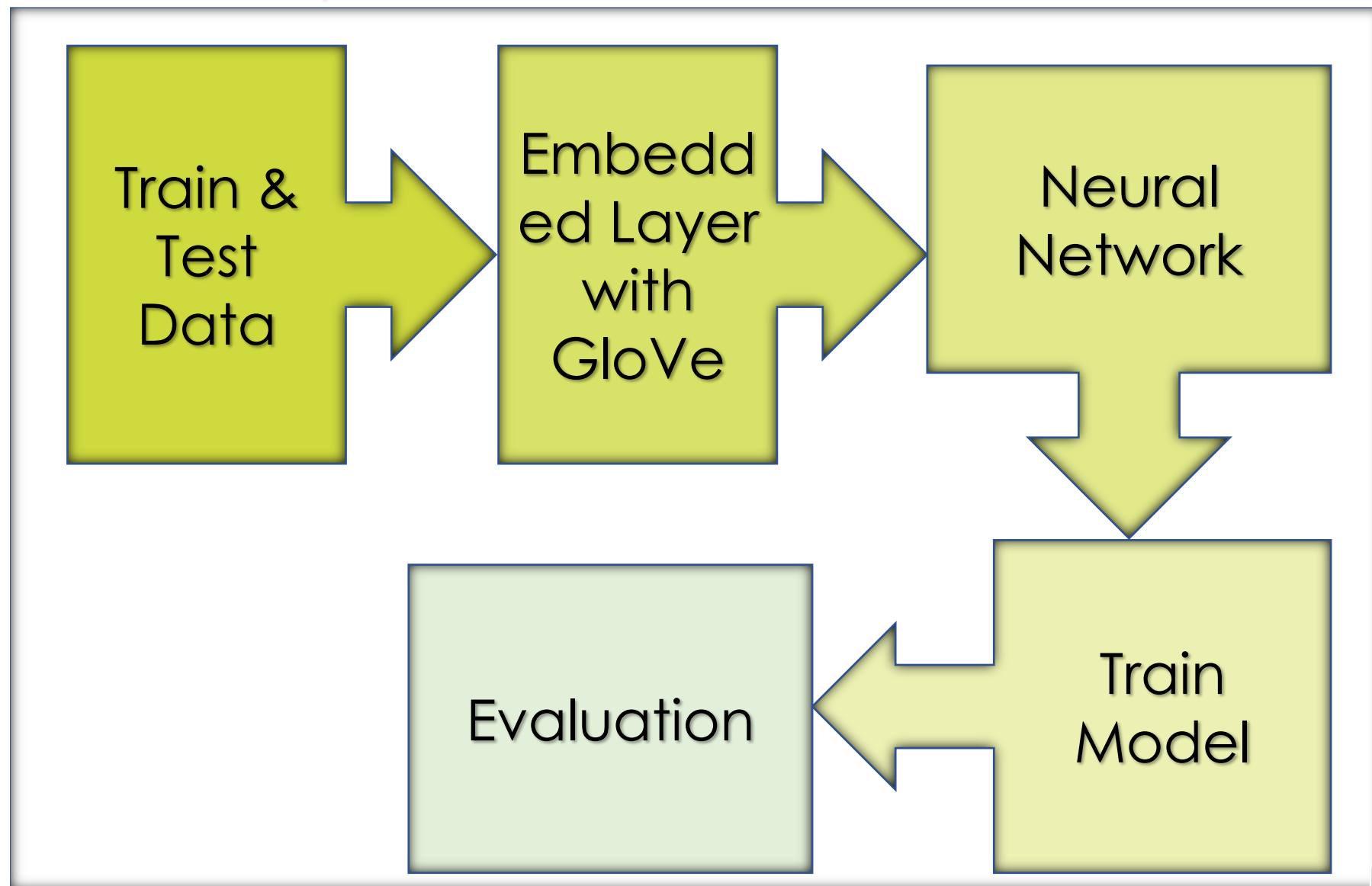
Model A, Support-Vector Machine



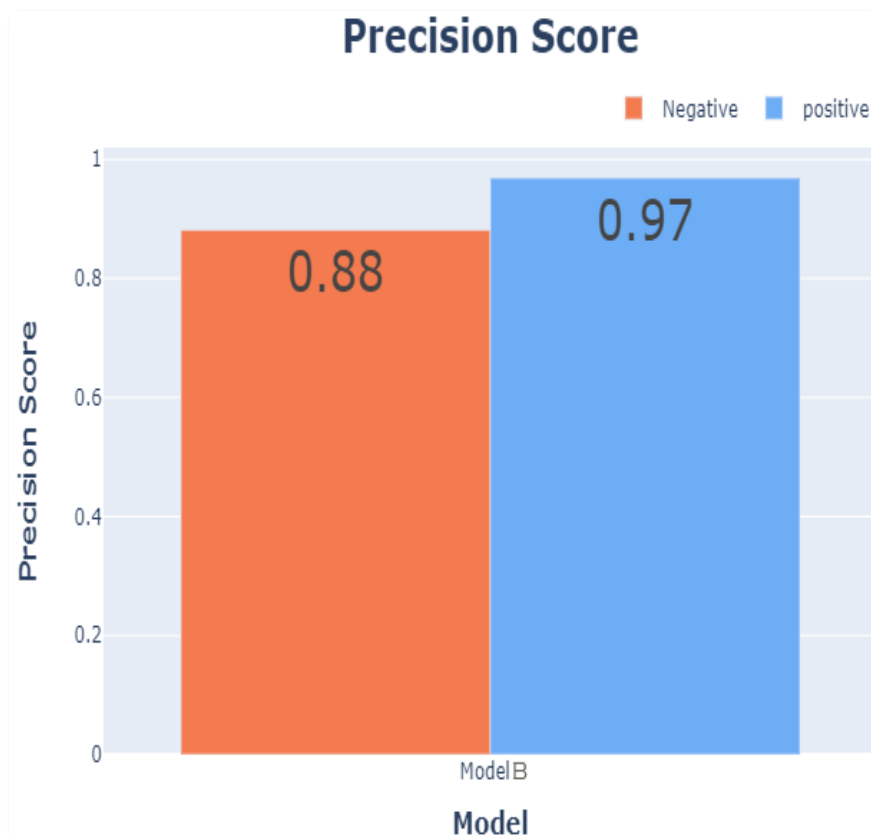
Model A, Performance Results



Model B, Neural Network



Model B, Performance Results

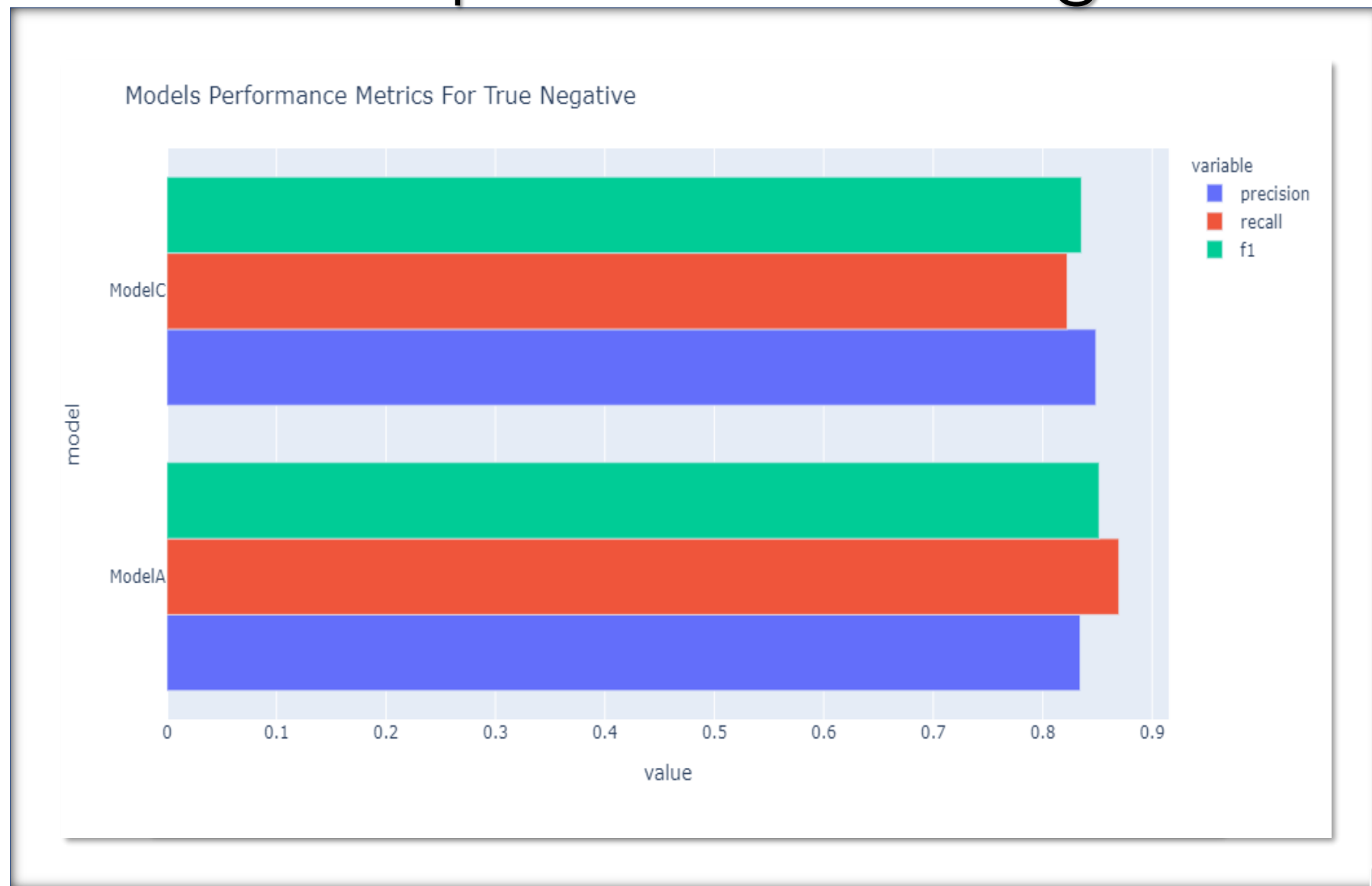


Confusion matrix

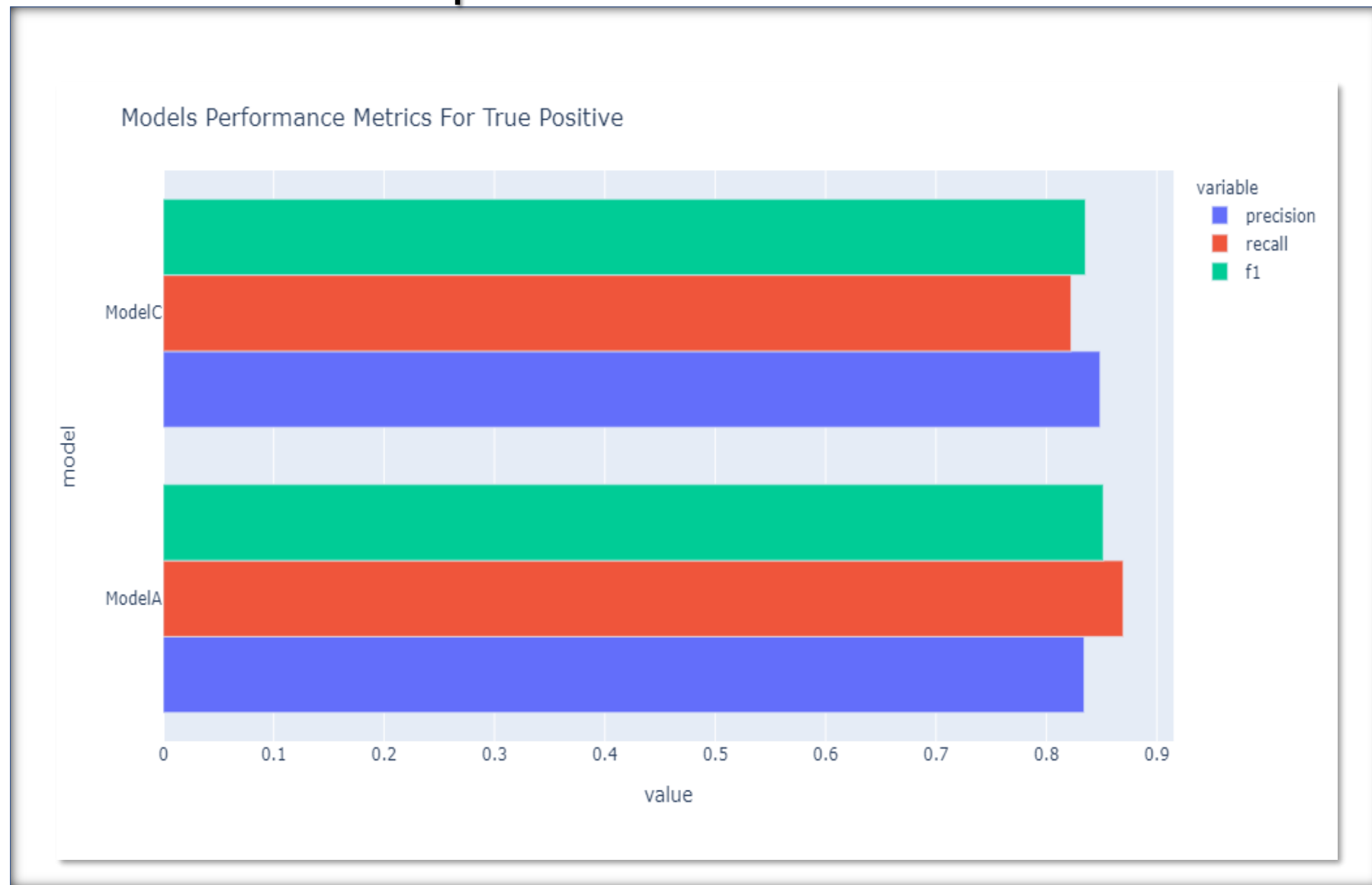
Actual value	pos actual	0.015	0.985
	neg actual	0.775	0.225
		neg pred	pos pred
		Predicted value	



Model Comparison – True Negative



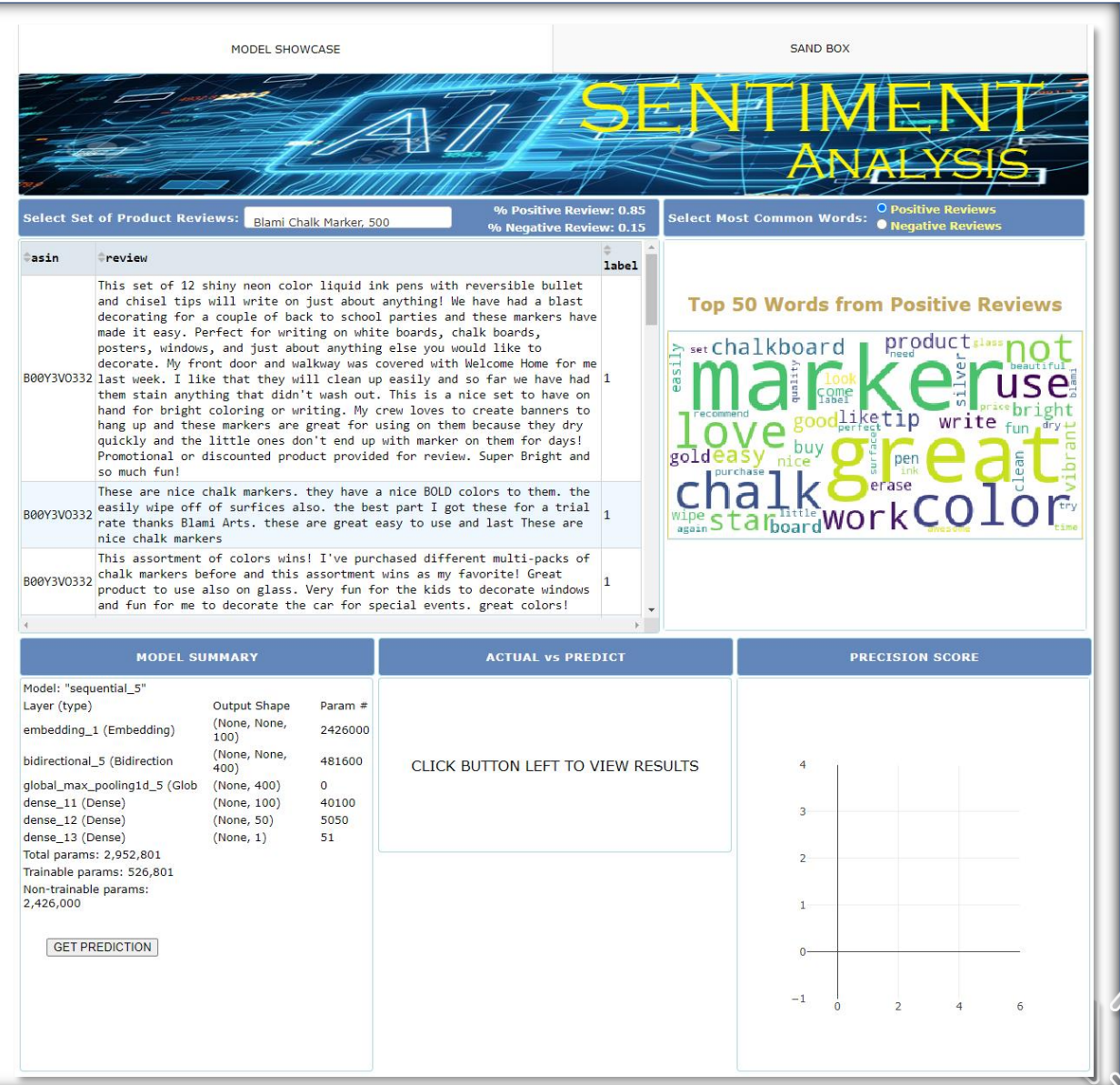
Model Comparison – True Positive



Dash Application

Data, Word
Cloud

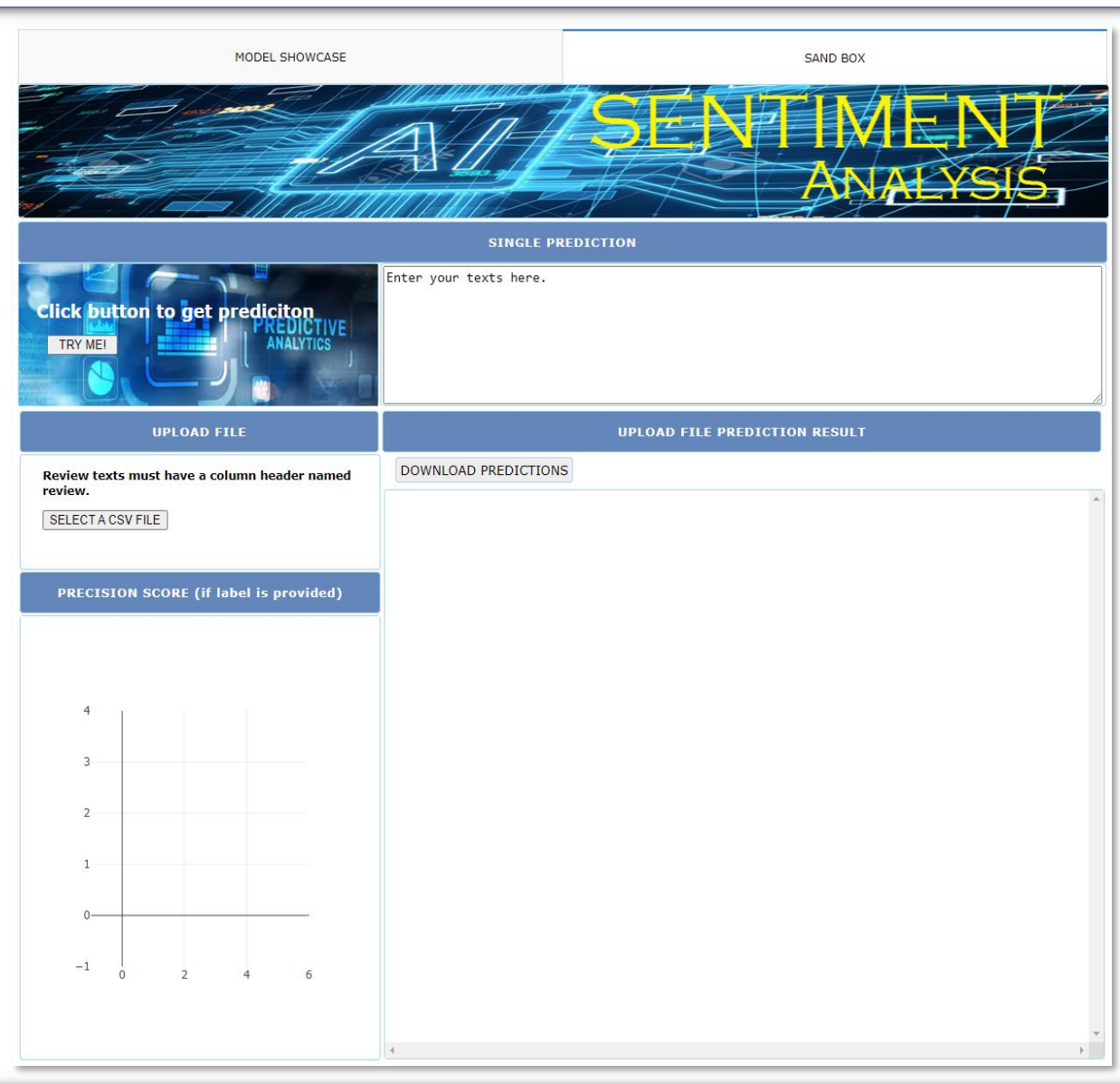
Data
Prediction



Dash Application

Texts
Prediction

Upload
Download



Recommendation



Customer
Service



Market
Research



Social
Media
Monitoring



Product
Analytics



Conclusion

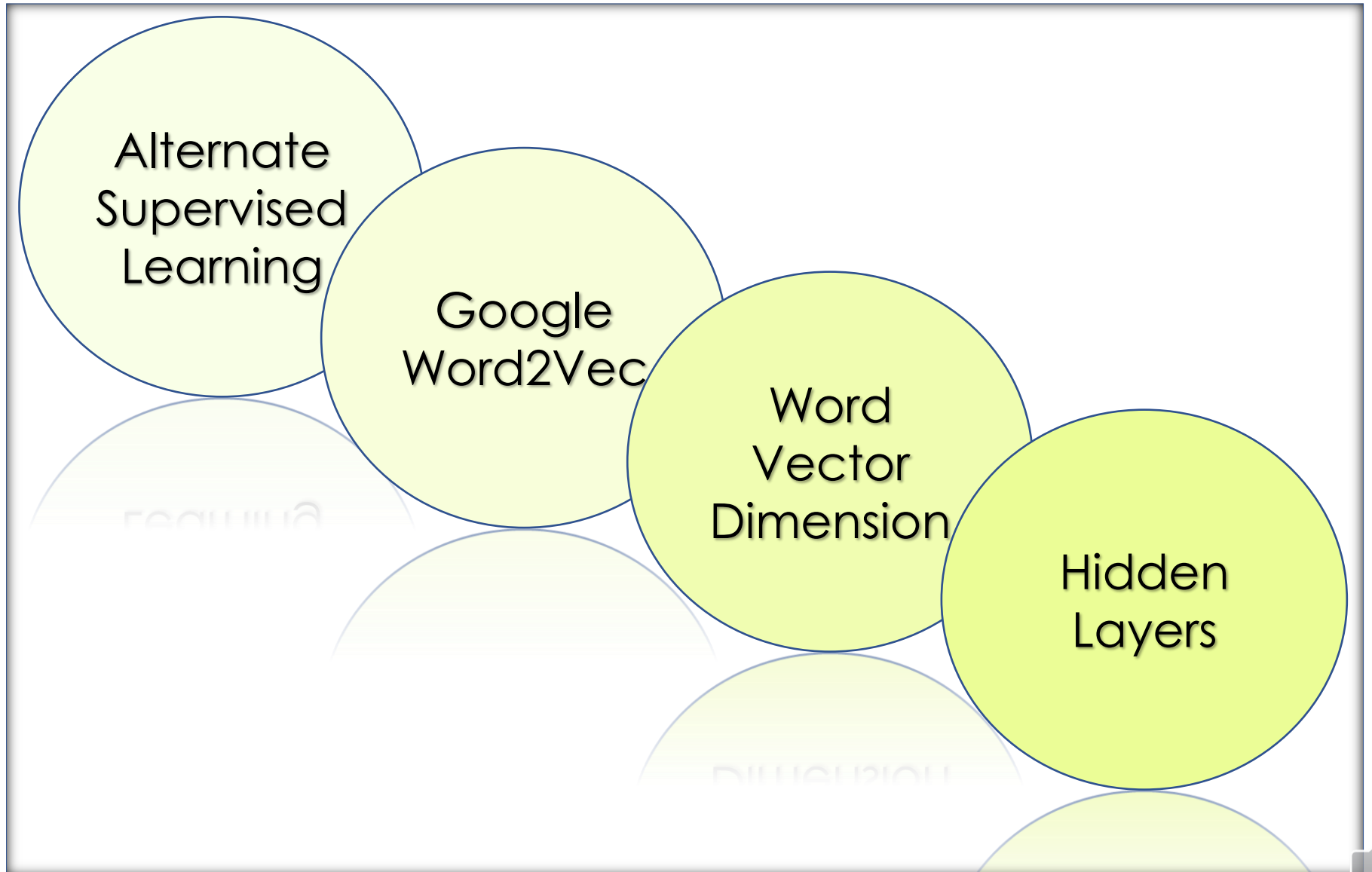
Short time
to train

Simple
Neural
Network

79% to 86%
True
Negative
and 97 %
True Positive
F1-Score on
new data



Future Work



Thank You

Change things

At Flatiron School you learn how the future is being built, so you can change anything, starting with a new career in code, data science, or cybersecurity

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