

Background

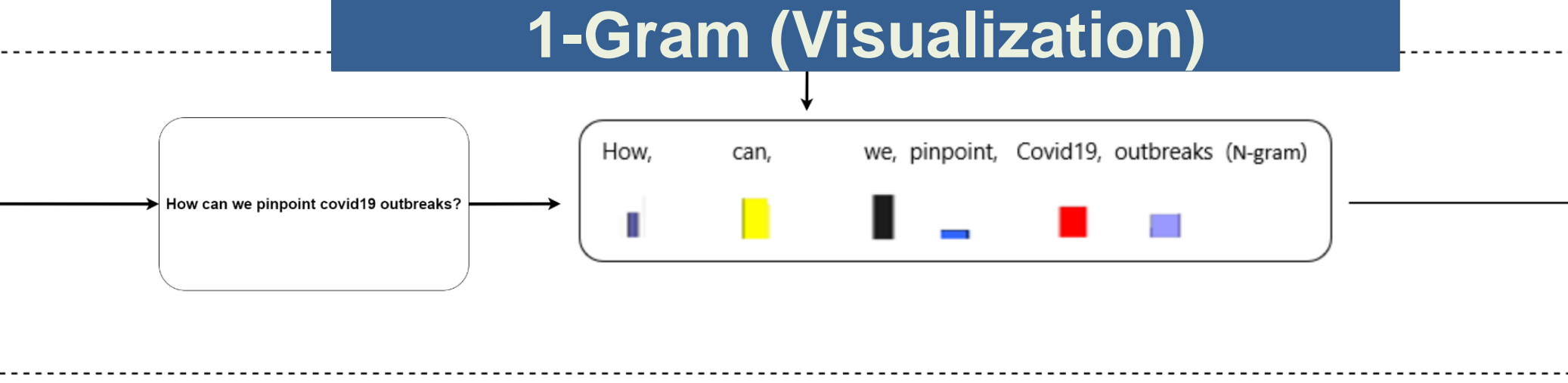
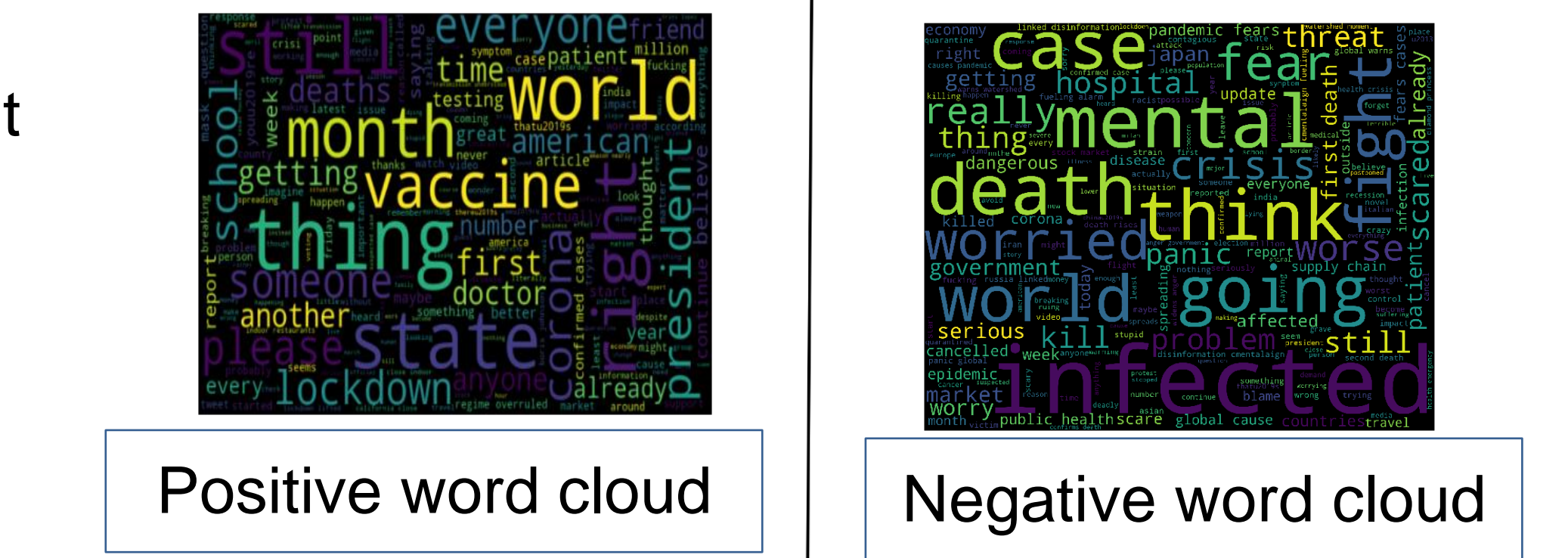
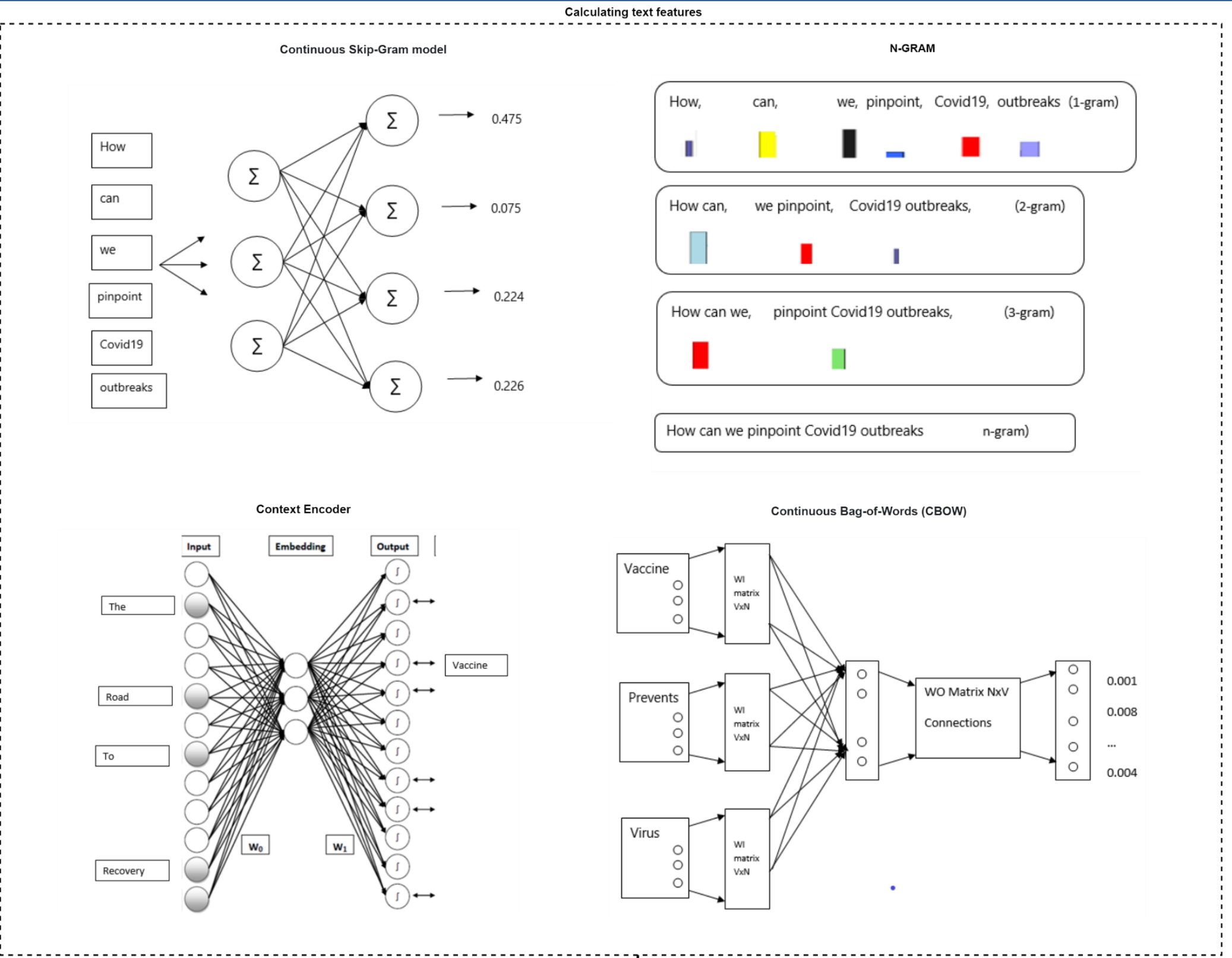
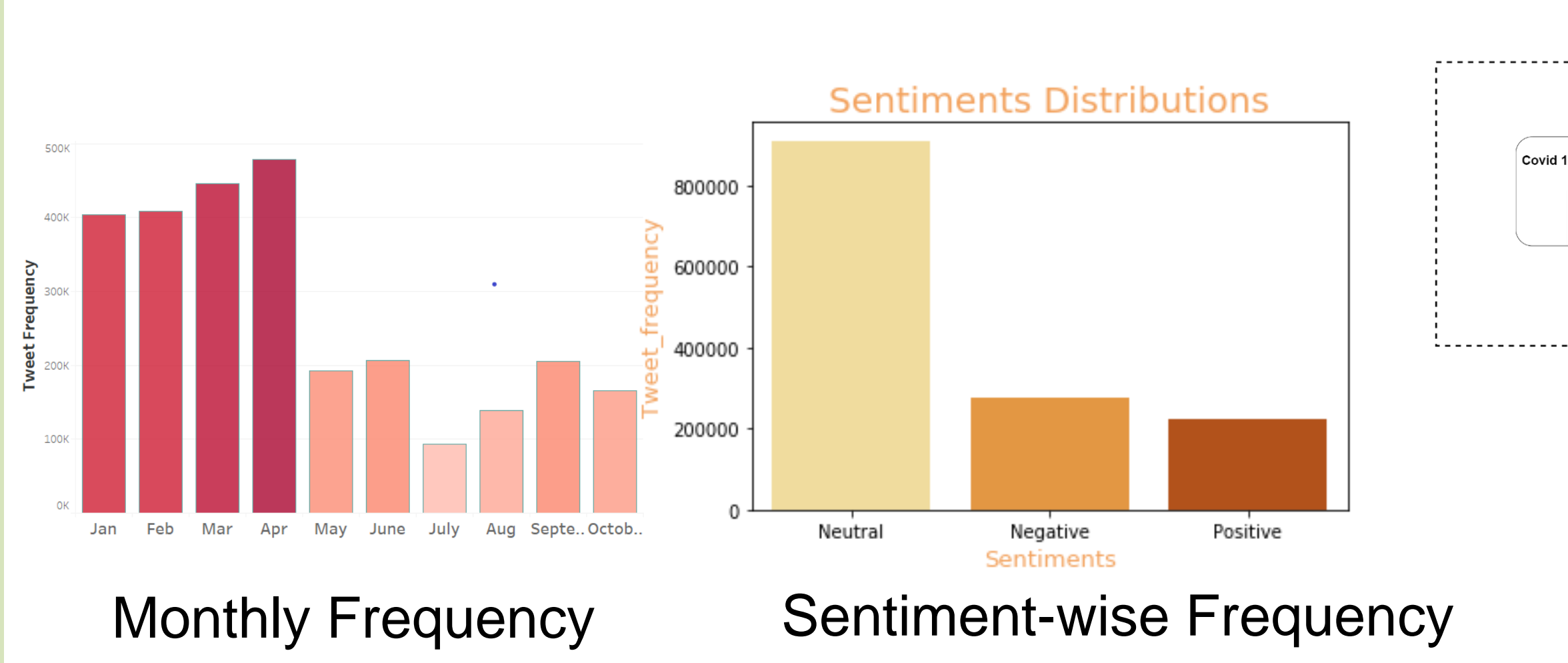


Canadian Mental Health Association
Mental health for all

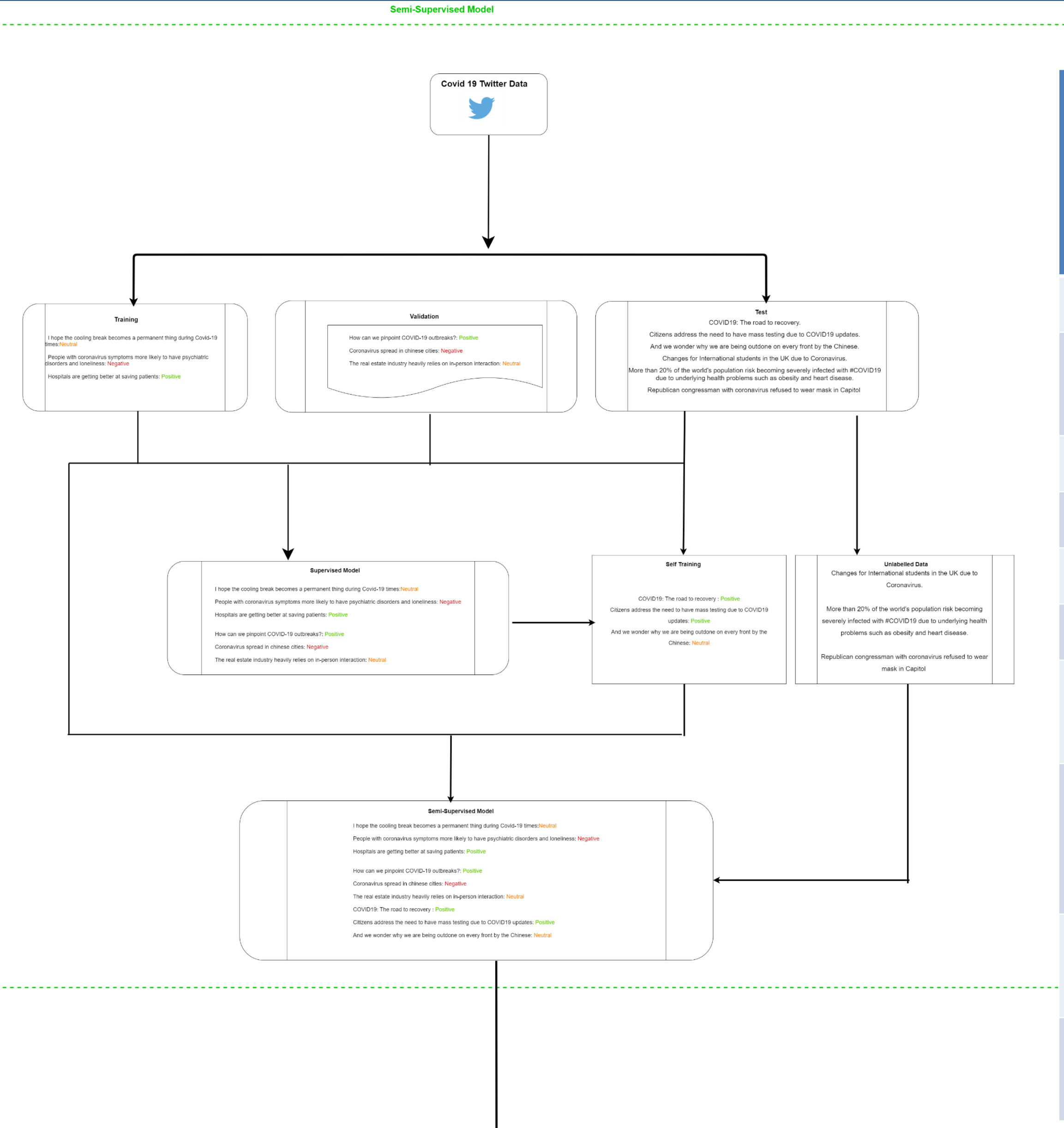
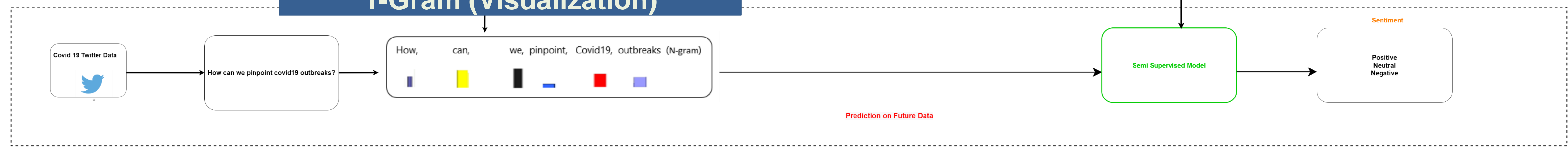
Key finding in COVID-19 mental health survey

- 42% of Albertans report isolation throughout the pandemic to be the top mental health concern for themselves and their community.
- 44% of rural Albertans report that a lack of socialization throughout the pandemic has become a mental health challenge.
- 57% of Albertans say staying connected with loved ones has helped their mental health and wellbeing during the pandemic.

Tweet Data Distributions



Flowchart of COVID-19 Twitter Data Sentiment Analysis



Performance Evaluation

Classifier Name	Supervised		Semi Supervised	
	Train Score	Test Score	Train Score	Test Score
K-Nearest	0.77	0.66	0.86	0.91
Gaussian Process	0.68	0.67	0.78	0.98
Decision Tree	0.70	0.67	0.80	0.96
Random Forest	0.65	0.65	0.8	1.0
Neural Network	0.73	0.55	0.75	0.7
AdaBoost	0.70	0.66	0.79	0.92
Gaussian Naïve Bayes	0.18	0.17	0.50	0.99
Quadratic Discriminant Analysis	0.2	0.18	0.48	0.92
Gradient Boosting	0.8	0.7	0.85	0.93
Logistic Regression	0.64	0.65	0.79	0.99

Conclusions and Future Works

- ❖ Semi-supervised Classifier suits this application since it does not have sufficient amount of labelled data.
- ❖ Semi-supervised performs better than supervised classification.
- ❖ In future, we would like to incorporate deep learning algorithm.

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References

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2. J. Xue et al, Twitter Discussions and Emotions About the COVID-19 Pandemic: Machine Learning Approach, J Med Internet Res 2020
3. F. Rustam et al., A performance comparison of supervised machine learning models for Covid-19 tweets sentiment analysis. PLoS ONE, 2021.