

Communication aimed at **influencing** the **attitude** of a community

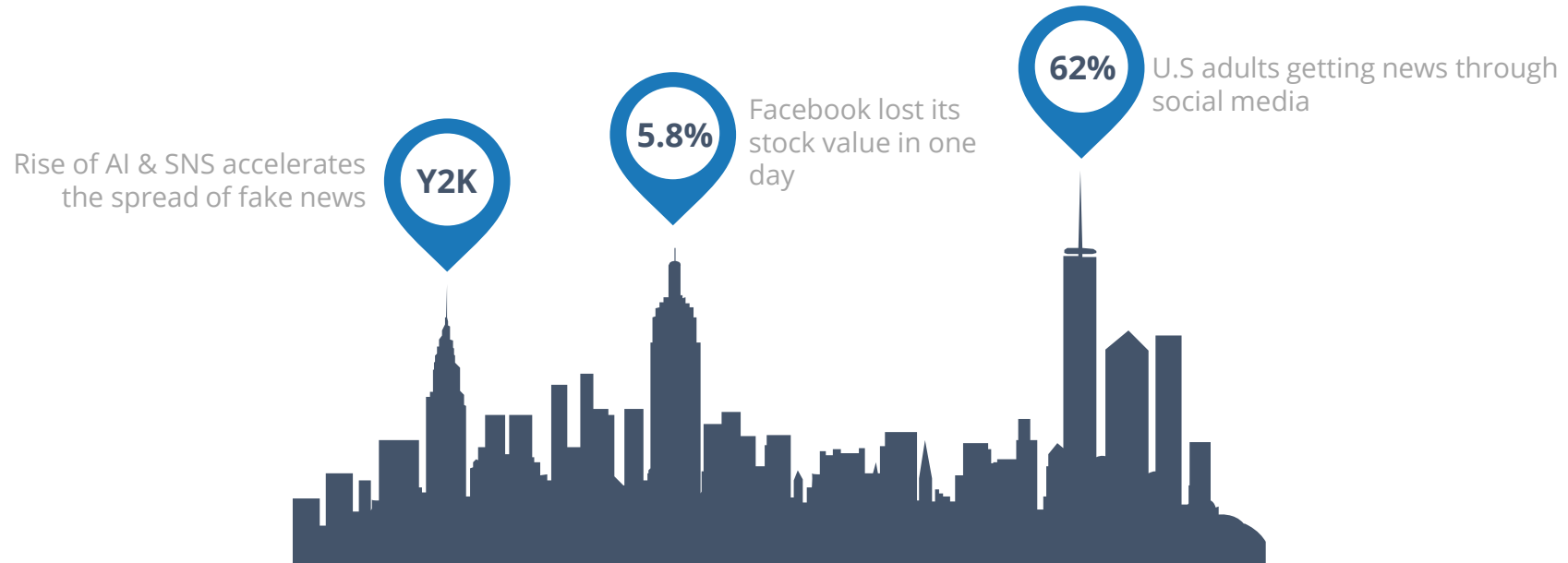
Combines **false facts** with facts to create **disinformation**

Production & Distribution of fake news is problematic & dangerous

What is **Fake** News?

What is Real or Fake?

DESIGNED TO MANIPULATE PEOPLE'S PERCEPTION OF REALITY



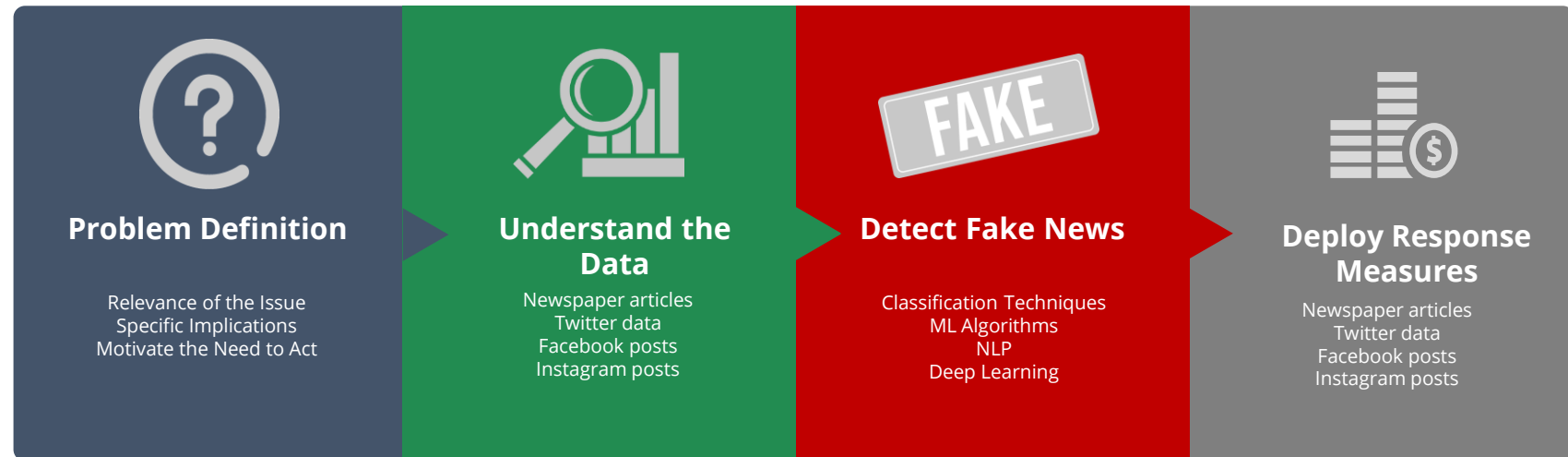
90% of Canadians have **fallen** for fake news
86% of Americans believe online news **spread** fake news
Intensify **conflicts** and distract people from **important issues**

Utmost interest of the public, government and the businesses
to be able to **detect** fake news

Key **Success** Factor

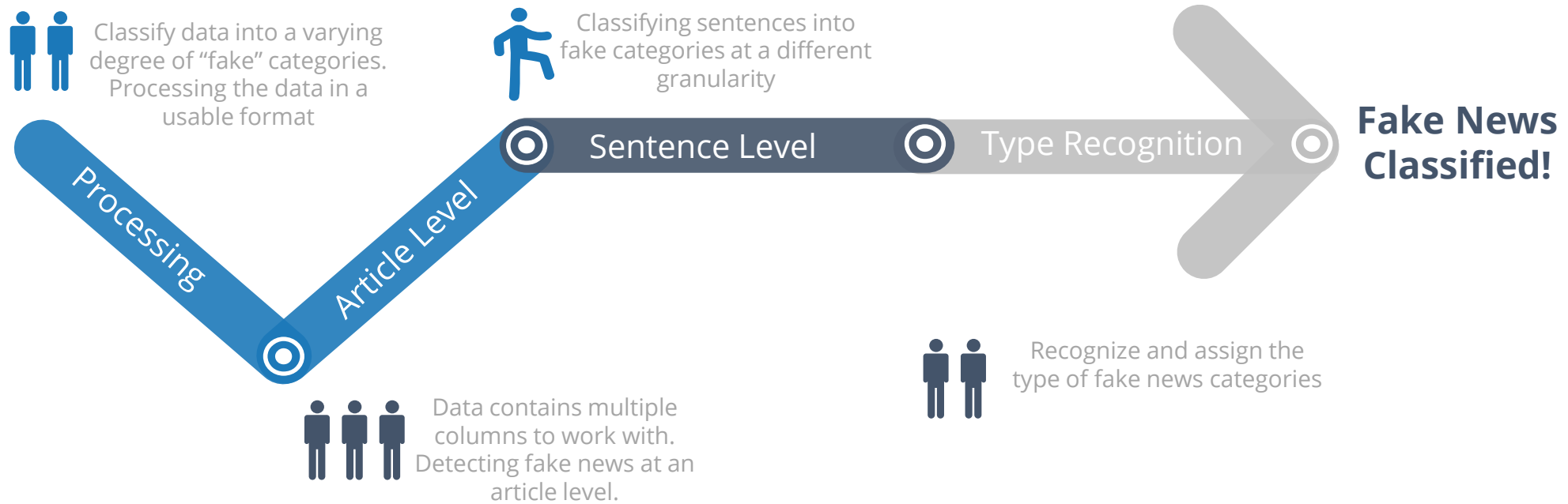
How Can We **Combat** Fake News?

RESPOND WITH AI & TECHNOLOGICAL ADVANCEMENTS



Our Approach

DESIGNING A PROCSS TO DETECT AND CLASSIFY FAKE NEWS



Our Modelling Approach

USING ML ALGORITHMS TO COMBAT FAKE NEWS

Vectorizers

Using Count, Tf-idf, Hash, N-Grams
to convert texts into numbers



Meta-Data Features

Features extracted from meta data by exploratory
analysis



Cosine Similarity

Sentence based extraction based upon cosine similarities
of Claims and Related articles



Passive Aggressive Algorithm

Probabilistic machine learning
approach to classification based on
Bayes theorem

LSTM

Meta estimator that fits
a number of decision tree classifiers on sub
samples of data

BERT

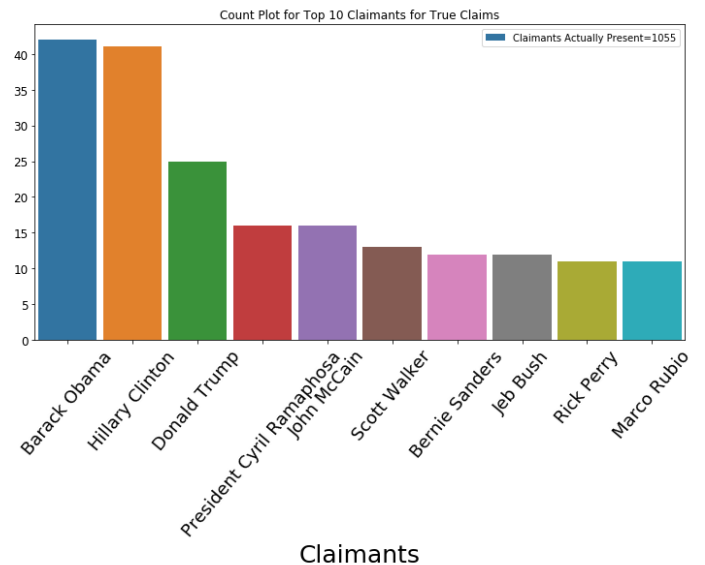
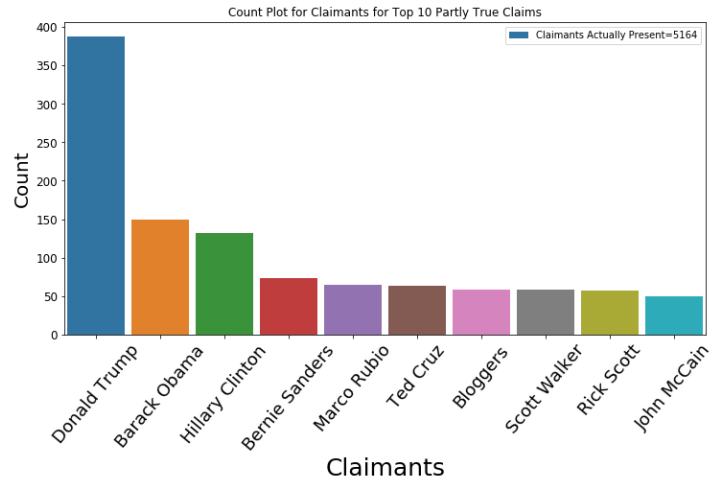
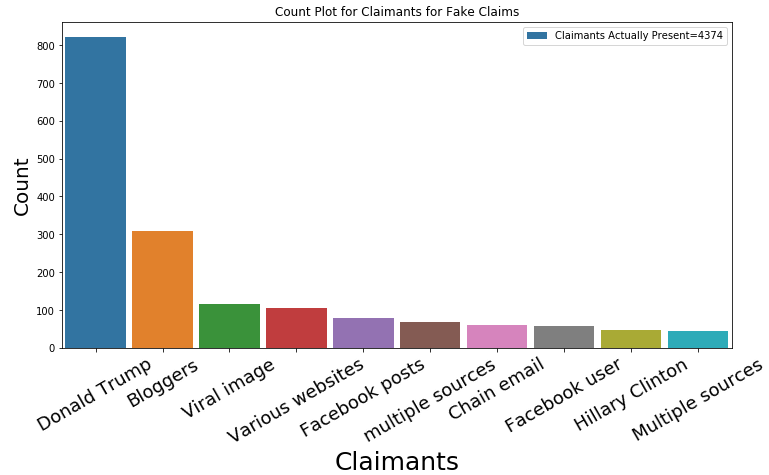
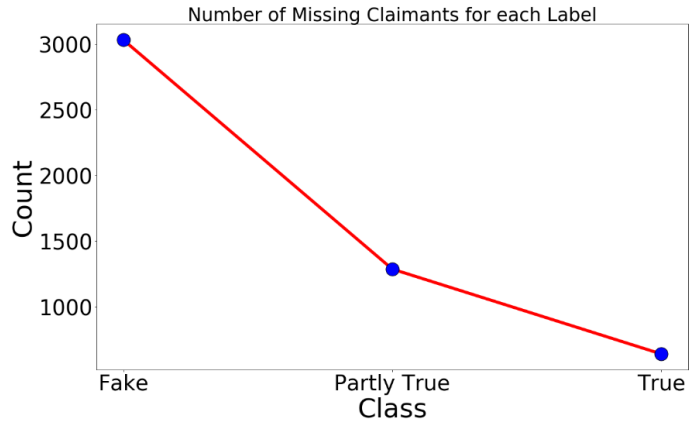
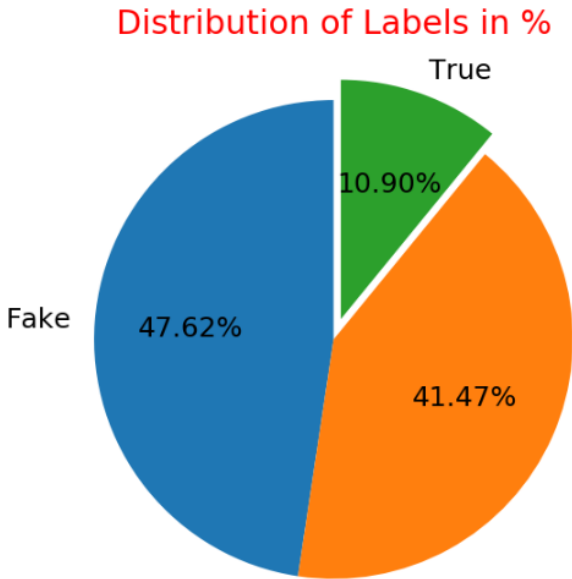
Consists of neurons(units) arranged in layers,
which converts an input vector into output by
applying a non linear function

Exploratory **Analysis**

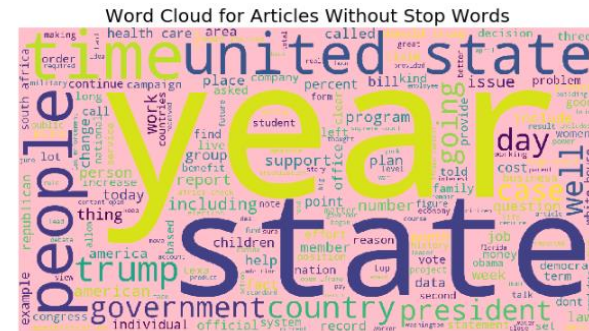
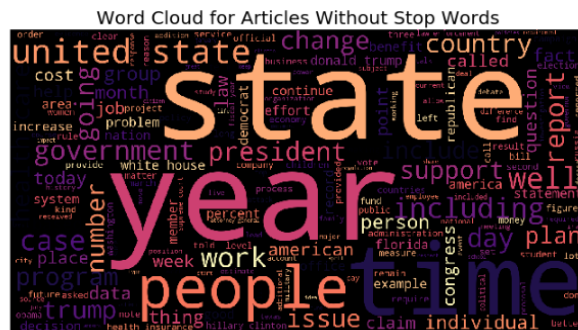
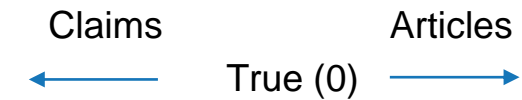
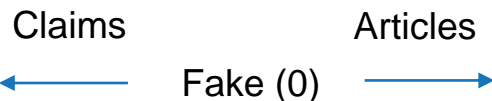
Deriving Actionable Insights

Key Findings – Meta-Data Analysis

WHAT THE DATA IS TELLING US?



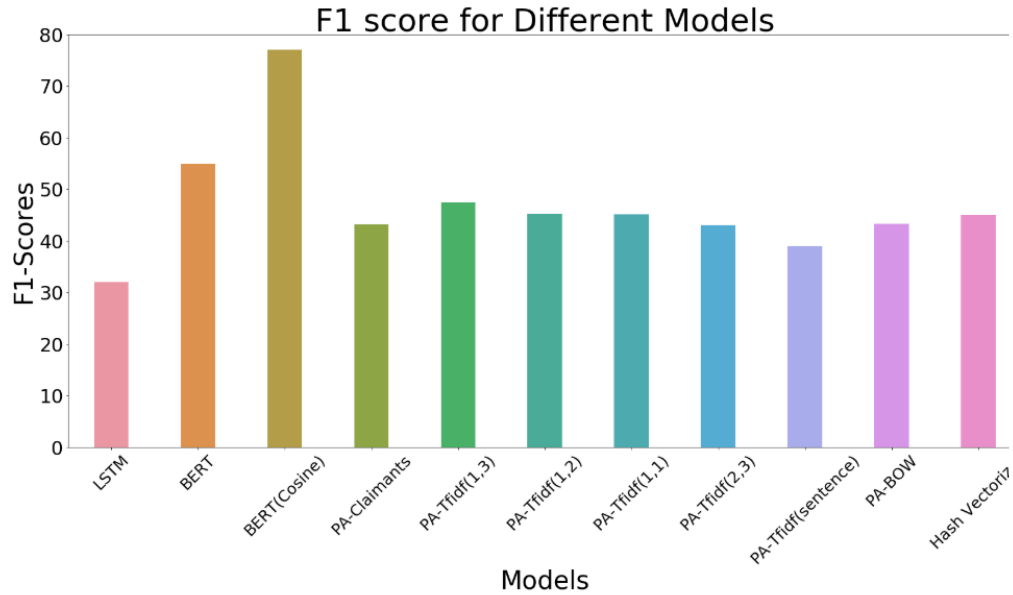
WHAT THE DATA IS TELLING US ?



Model **Performance**

Deciding on Appropriate Measures

Model Performance



Best Model – BERT (Cosine Similarity + Sentence Based Extraction)

F1-Score (Macro-Avg) = 0.77

Test Accuracy = 80.9%

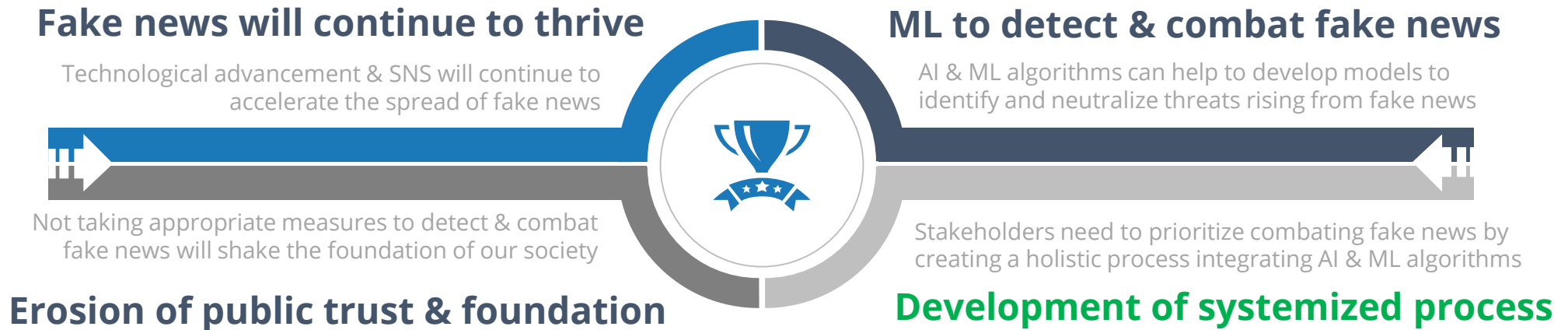
Train Accuracy = 81.4%

Recommendations

Deciding on Appropriate Measures

So What?

TRANSFORM KEY INSIGHTS INTO ACTIONABLE DECISIONS



References

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