



Stayin' Alive: Predicting Shelter in Place Orders Using Twitter Sentiment Analysis

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Coronavirus: Governor Executive Orders



**EXECUTIVE ORDER SK-01 RELATED TO COVID-19
STAY HOME STAY SAFE ORDER
DATE ISSUED: APRIL 3, 2020**

WHEREAS, on March 13, 2020, President Trump declared a National State of Emergency under the Stafford Act to combat the growing COVID-19 pandemic in the United States; and



Eddie Treviño, Jr.
County Judge

**FIRST AMENDED EMERGENCY MANAGEMENT ORDER WITH MANDATORY
COUNTYWIDE SHELTER IN PLACE**

WHEREAS, in conjunction with the National Emergency Declaration issued by President Trump and Governor Abbott's Declaration of Disaster on March 13, 2020, and out of an abundance of caution to limit or reduce the spread of COVID-19 to Cameron County;



GOVERNOR GREG ABBOTT

For Immediate Distribution | March 25, 2020 | (512) 463-1826

Governor Abbott Announces Approval Of Major Disaster Declaration

AUSTIN – Governor Greg Abbott today released a statement thanking President Trump for issuing a Major Disaster Declaration for the State of Texas. This announcement comes after the Governor requested the declaration—citing the need for additional federal assistance to save lives, to protect property, public health, and safety, and to lessen or avert the threat of COVID-19.

"Texas is aggressively pursuing and implementing all necessary strategies to limit the impact of COVID-19, and I thank President Trump for his swift action to issue a Major Disaster Declaration for the State of Texas," said Governor Abbott. "The President's declaration opens up new sources of funding for individual and public assistance that will help Texas respond to this public health emergency and protect public health and safety."

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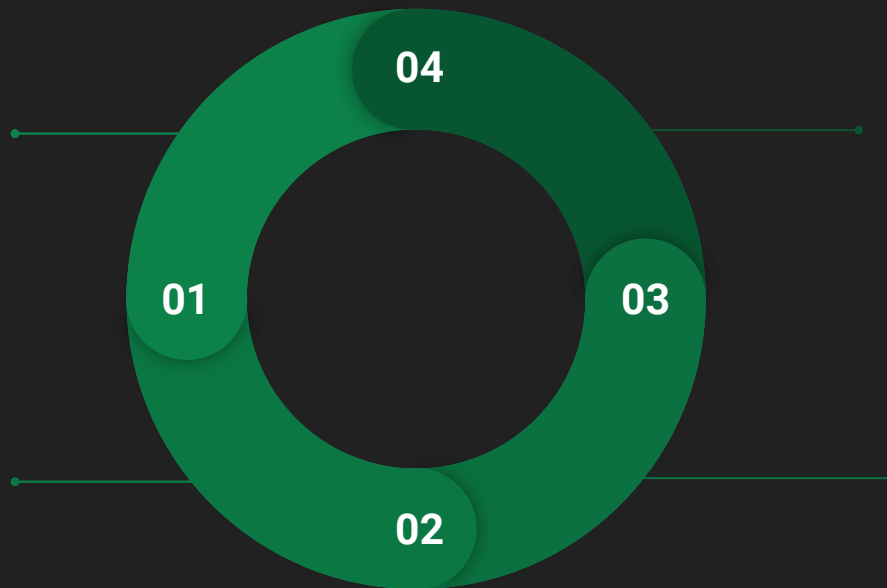
Lightgbm Model Creation

Data Sampler

Goal: Randomly sample dataset with replacement.
Need to randomly sample from dataset because cities can be part of multiple counties. This is due to limitations when scraping data.

Sample Aggregation

Created a matrix in order to have a model that predicts order on a day to day basis.
Each row in the matrix represents the status of a county on a day.



Cross Validation

For cross validation i performed k-fold.

Hyperparameter Tuning

Used sklearn to perform a gridsearch for the following parameters:

- Number of leafs
- Number of estimators
- Learning rate

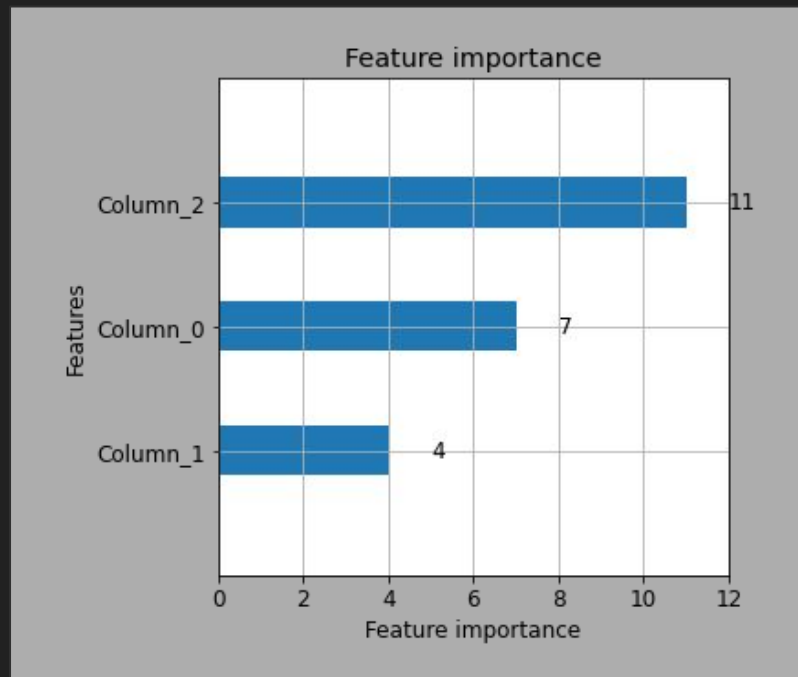
Feature Importance

Best Model Accuracy Score: 0.9725

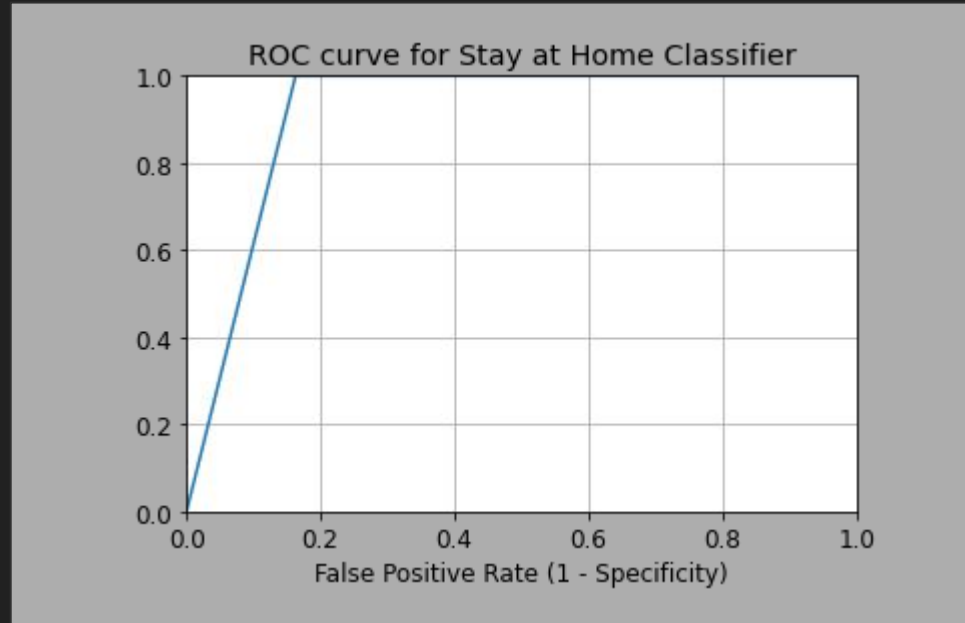
Column_0 = cumulative_polarity

Column_1 =
cumulative_subjectivity

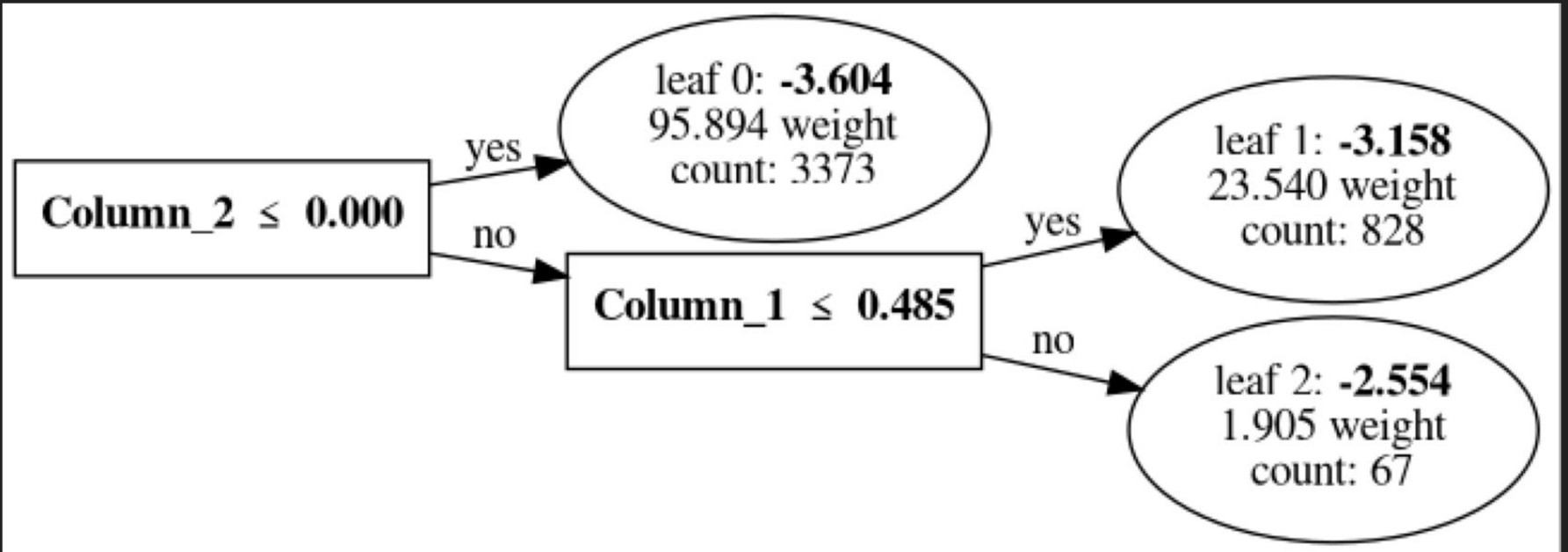
Column_2 = disaster_declaration



ROC Curve for Stay at Home Classifier



Lightgbm Tree





"That's all Folks!"

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