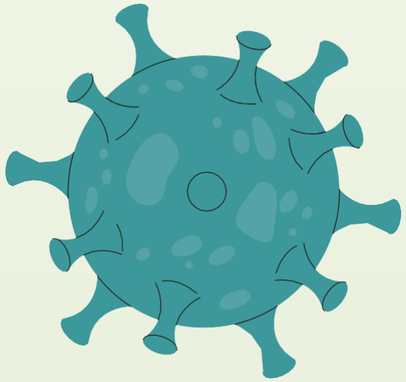
SEASONAL FLU VACCINE UPTAKE PREDICTION

BY RUTH KITASI

INTRODUCTION

The occurrence of the flu season repeats annually, and each year people make a choice to either receive the flu shot or not.

This attempts to develop a predictive model to forecast individuals' decision to receive the flu shot or not during the annual flu season.



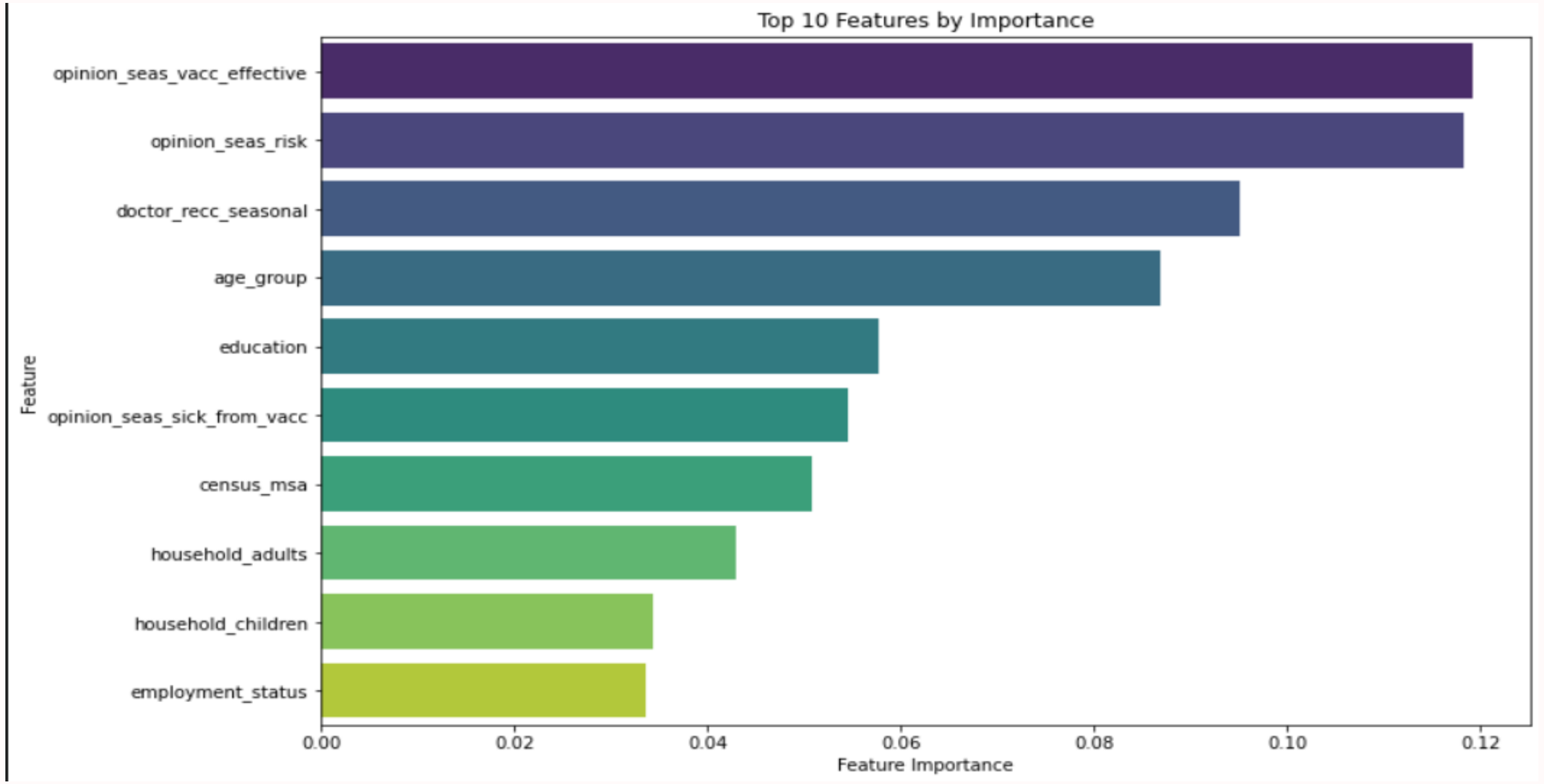
PROBLEM STATEMENT

The aim of the project is to assist in public health planning and decision-making by providing insights into vaccination trends and helping allocate resources effectively to the United States government health Agencies

MAIN OBJECTIVE

Create a model that can predict seasonal flu vaccine uptake based on a person's background and patterns of behavior

IMPORTANT FEATURES THAT SHAPE OUR MODEL

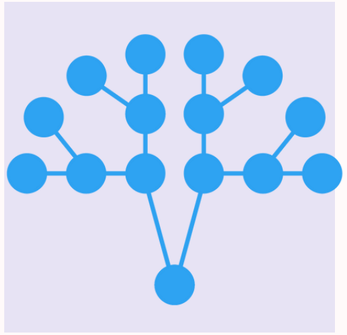


Top ten most important features

MODELLING

The baseline model was created using a Logical regression model which had an accuracy of 77% compared to the Decision tree Model of 68% accuracy

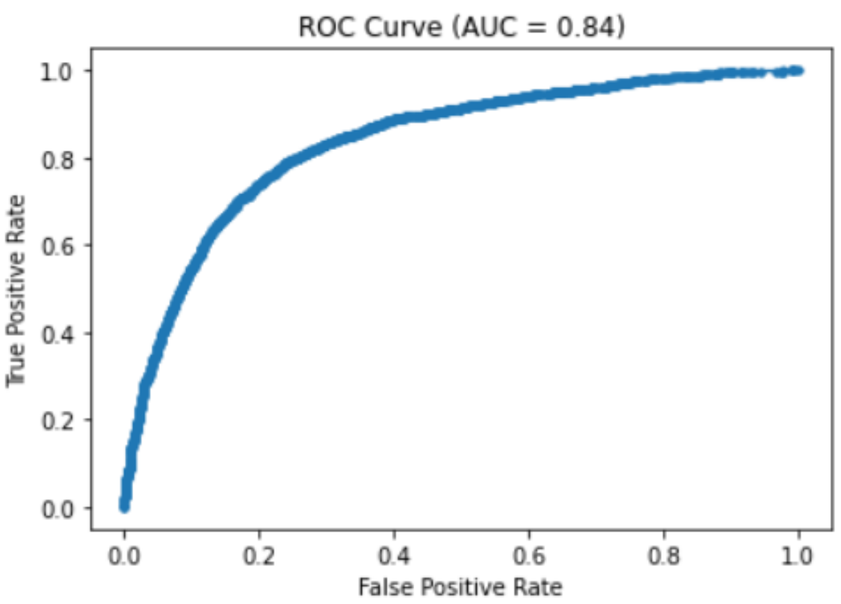
Logical regression model

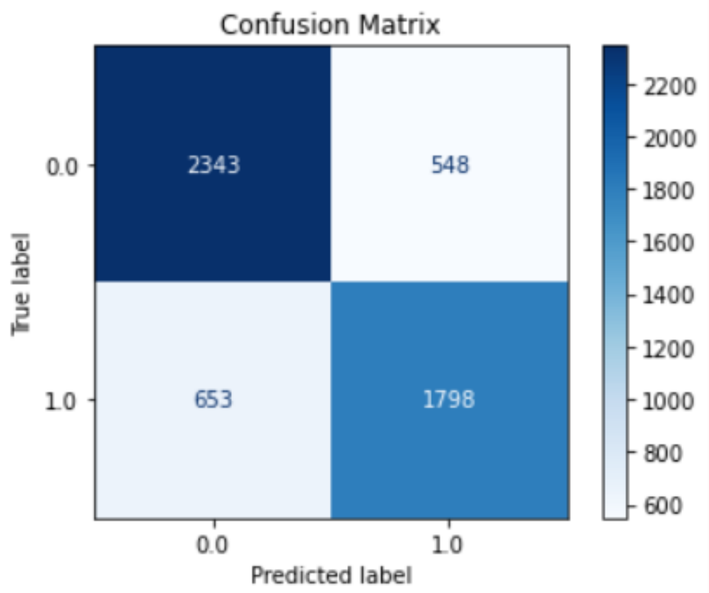


Decision tree model

Evaluation

The model was evaluated by the confusion ROC and the confusion matrix





CONCLUSION

Personal opinion about the vaccine greatly affects the uptake.

Errors were minimized using the logical regression model

The comparison between the logical regression an the decision tree model shows that logical regression is a better-performing model.

- Careful examination of the significance of identified predictors will help understand underlying factors and ensure fairness in decision-making.

- Include a wider range of demographic groups, thereby achieving a more diverse and balanced dataset.

Regularly review and update the model to ensure it adapts to new data and trends.