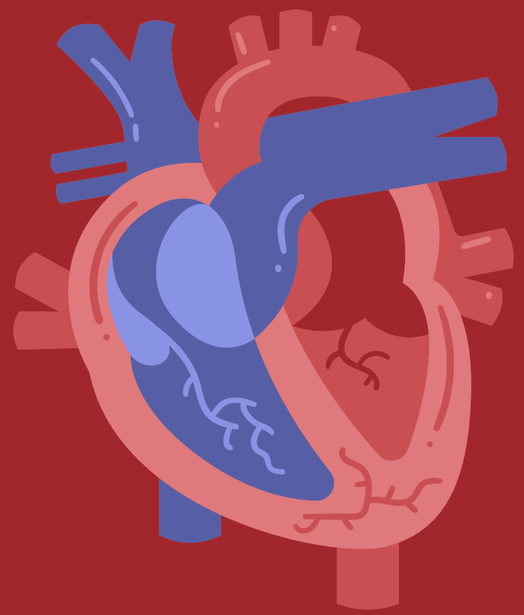
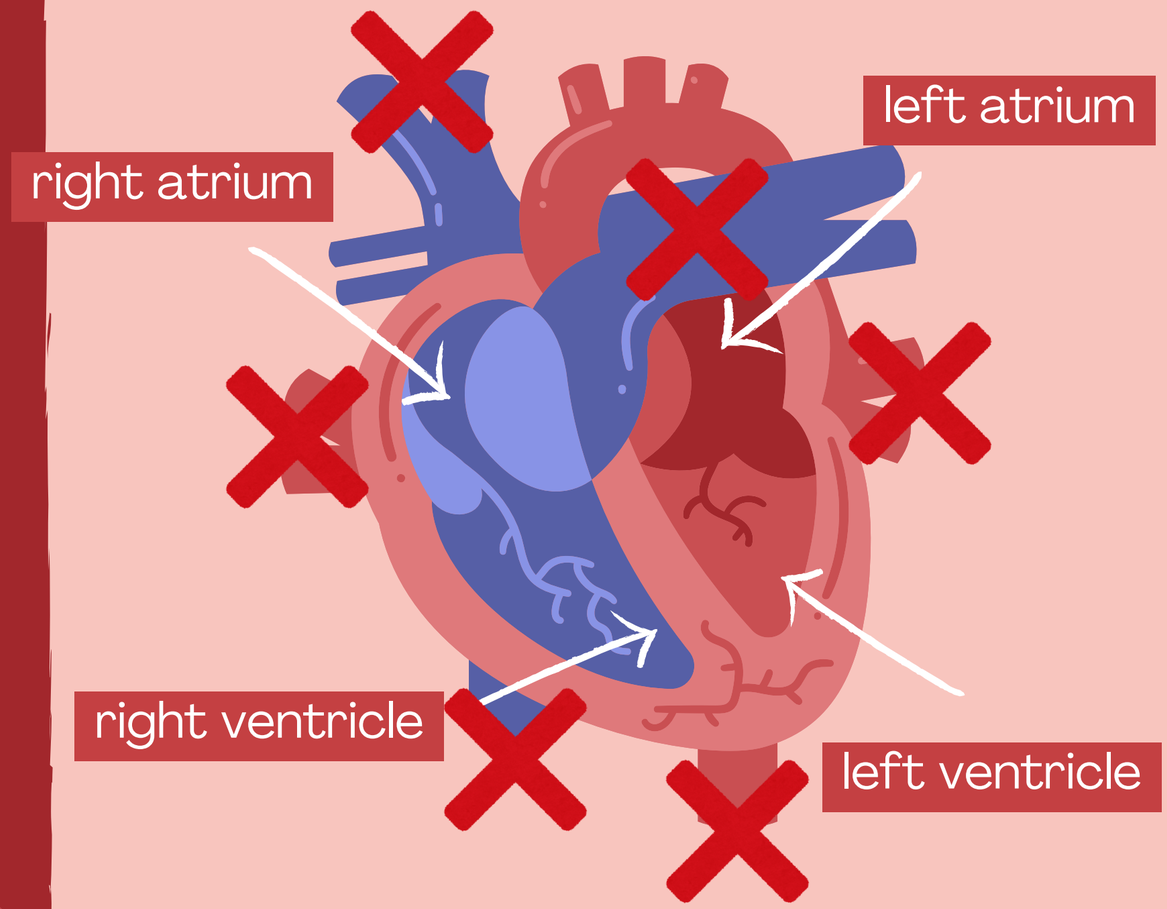
HEART ATTACK INDICATORS



Capstone Sprint 2
Stefan George

HERES THE PROBLEM

Heart Disease, is a blanket term for a few different conditions all can lead to a heart attack.



DATA OVERVIEW

Data

Data

Solution

Key metric

Whats next?

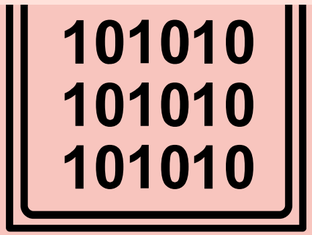
PRE-PROCESSING

TARGET

HADHEARTATTACK

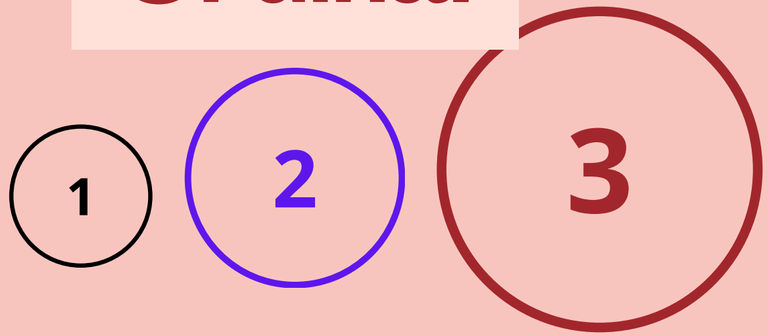
ENCODING

Binary



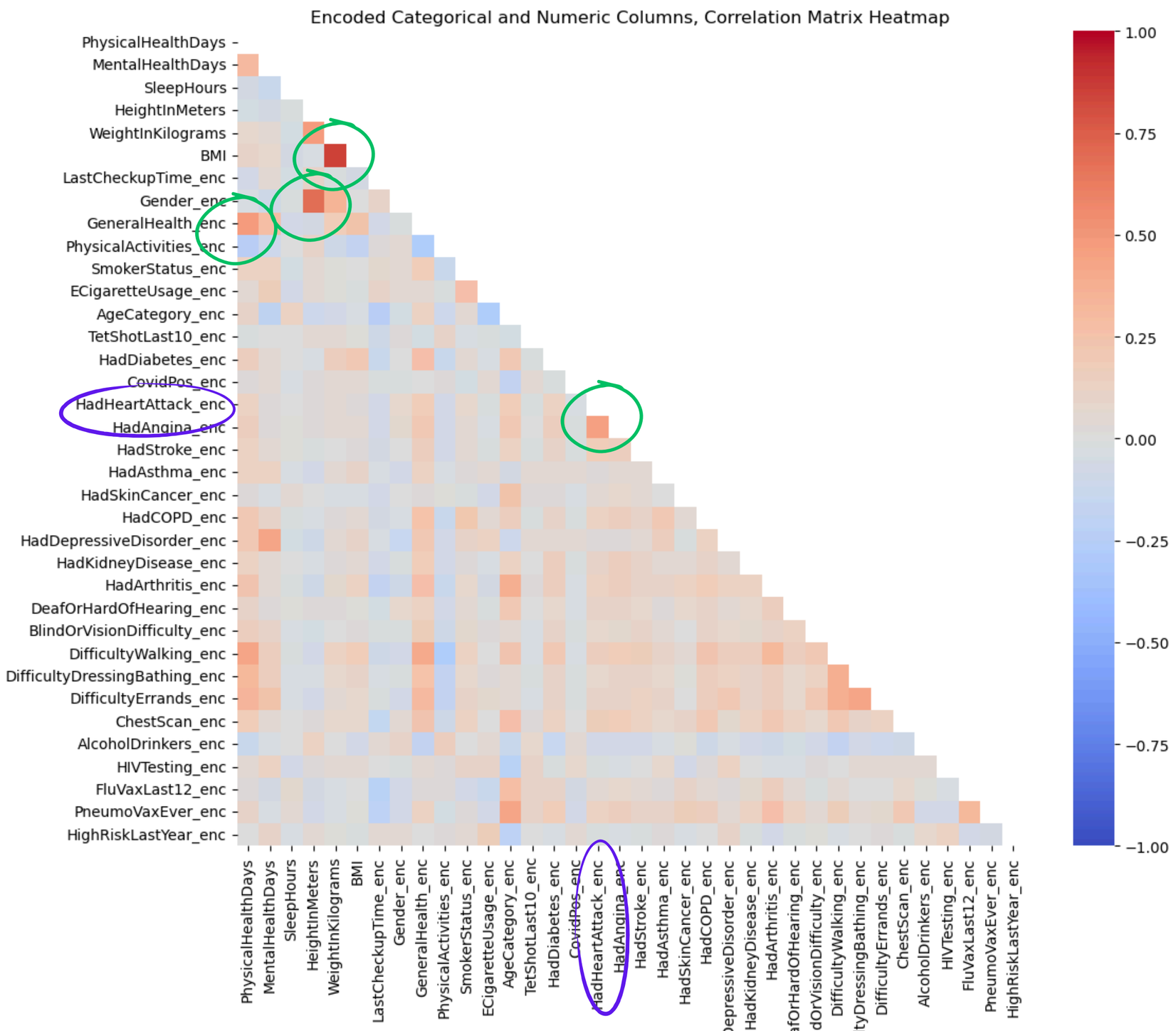
- Gender (Sex)
- Yes and No

Ordinal

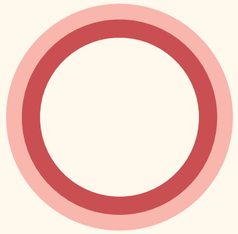


- Order of Severity

EDA


Encoded Categorical and Numeric Columns, Correlation Matrix Heatmap
PhysicalHealthDays
MentalHealthDays
SleepHours
HeightInMeters
WeightInKilograms
BMI
LastCheckupTime_enc
Gender_enc
GeneralHealth_enc
PhysicalActivities_enc
SmokerStatus_enc
ECigaretteUsage_enc
AgeCategory_enc
TetShotLast10_enc
HadDiabetes_enc
CovidPos_enc
HadHeartAttack_enc
HadAngina_enc
HadStroke_enc
HadAsthma_enc
HadSkinCancer_enc
HadCOPD_enc
HadDepressiveDisorder_enc
HadKidneyDisease_enc
HadArthritis_enc
DeafOrHardOfHearing_enc
BlindOrVisionDifficulty_enc
DifficultyWalking_enc
DifficultyDressingBathing_enc
DifficultyErrands_enc
ChestScan_enc
AlcoholDrinkers_enc
HIVTesting_enc
FluVaxLast12_enc
PneumoVaxEver_enc
HighRiskLastYear_enc
1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75
−1.00

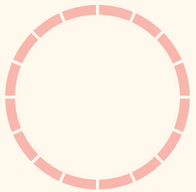
MODELS & HYPERPARAMETERS



Main Models

Logistic Regression

Random Forest



Techniques

Baseline Model

Optimized Model
using Hyperparameters

Hyperparameters

Standard Scaling, C

L1, L2

saga, liblinear

---

n_estimators
max_depth
min_samples
min_samples_leaf
max_features

TIP

Remember, HadHeartAttack is the Target

TEST PERFORMANCE EVALUATION

Base Logistic Regression

0 = Recall - 99%

1 = Recall 25%

0 = F1 SCORE - 97%
1 = F1 SCORE - 35%

Logistic Regression

0 = Recall - 96%

1 = Recall 52%

0 = F1 SCORE - 97%
1 = F1 SCORE - 44%

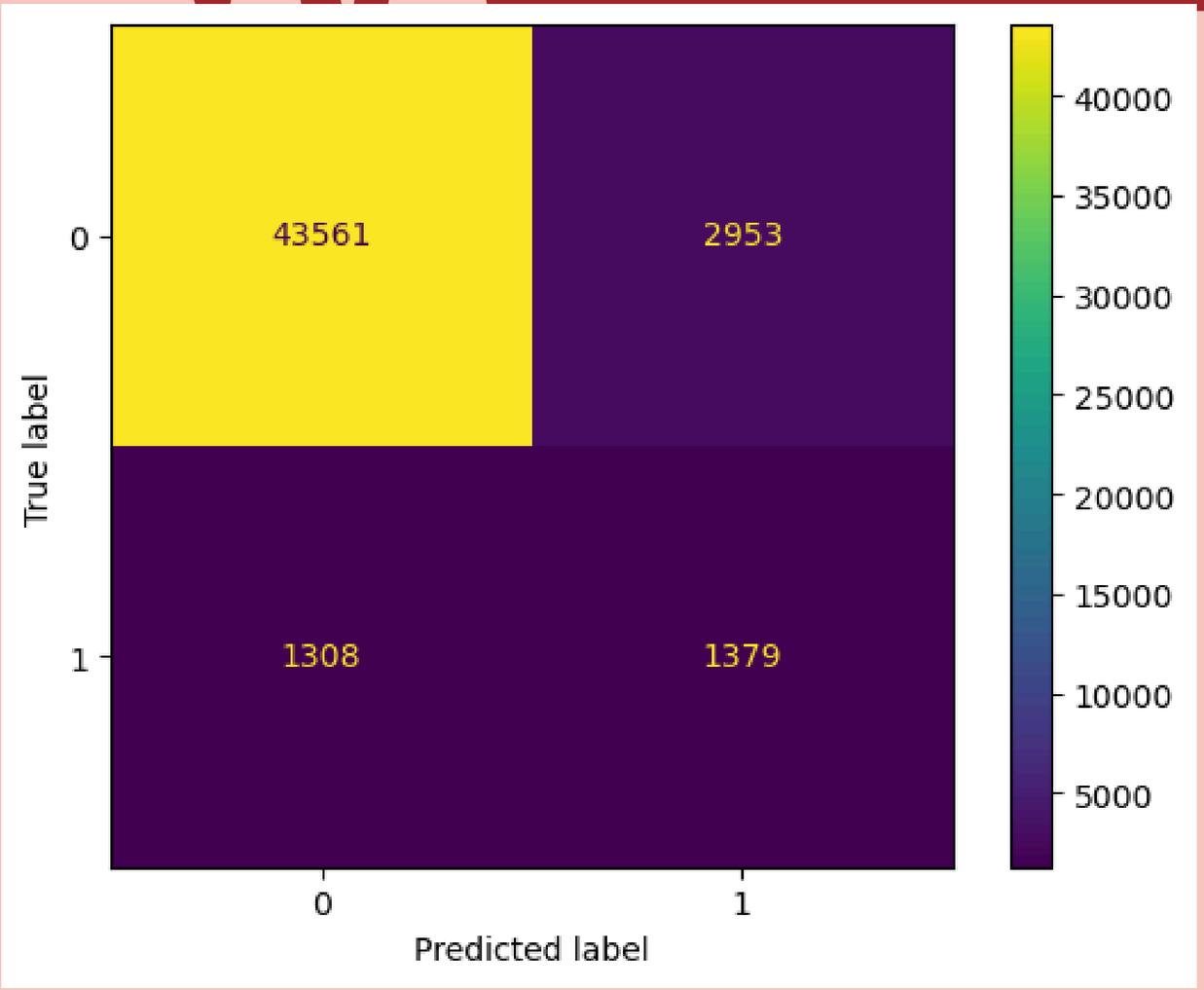
Random Forest

0 = Recall - 4%

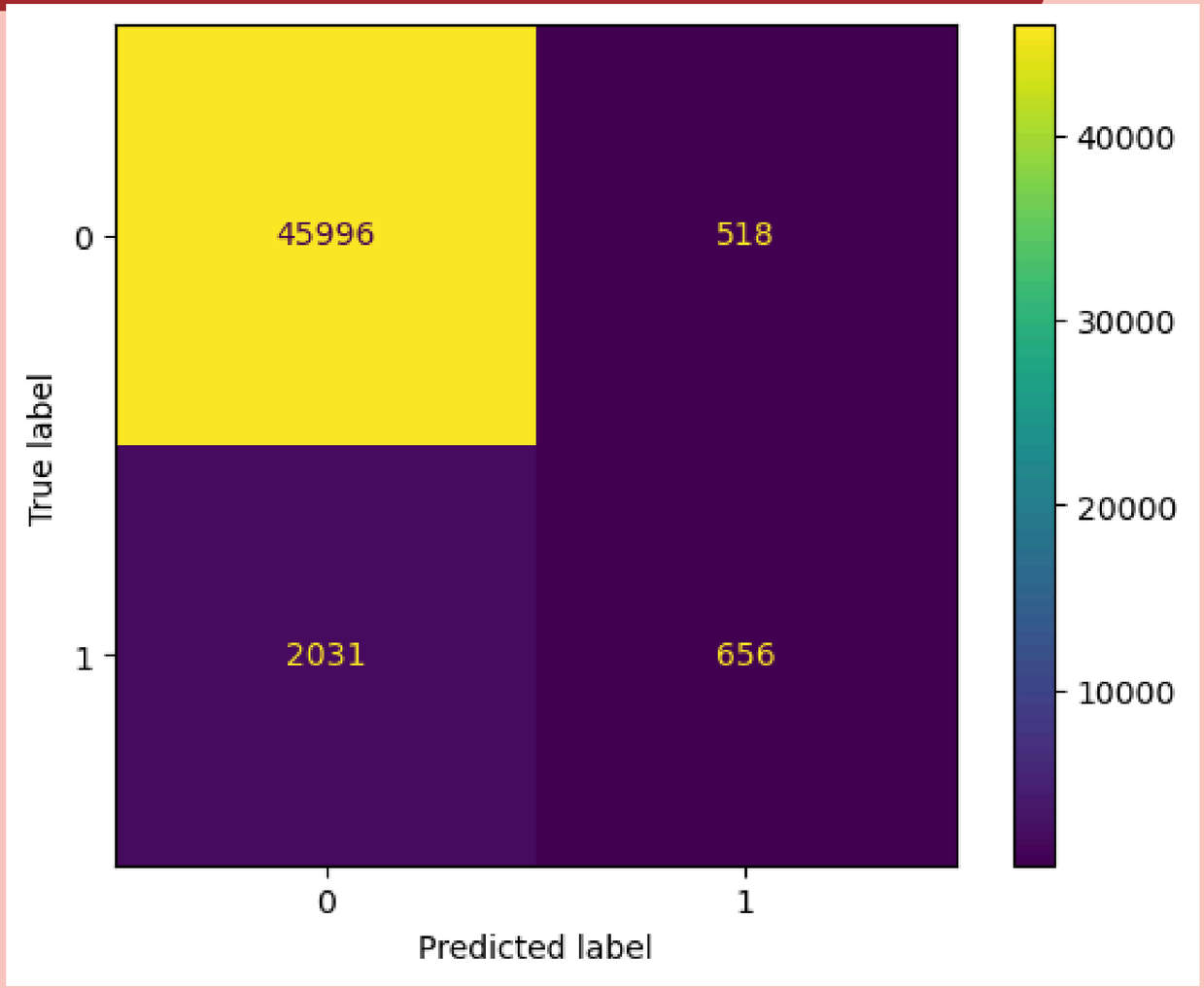
1 = Recall 1%

CONFUSION MATRIX

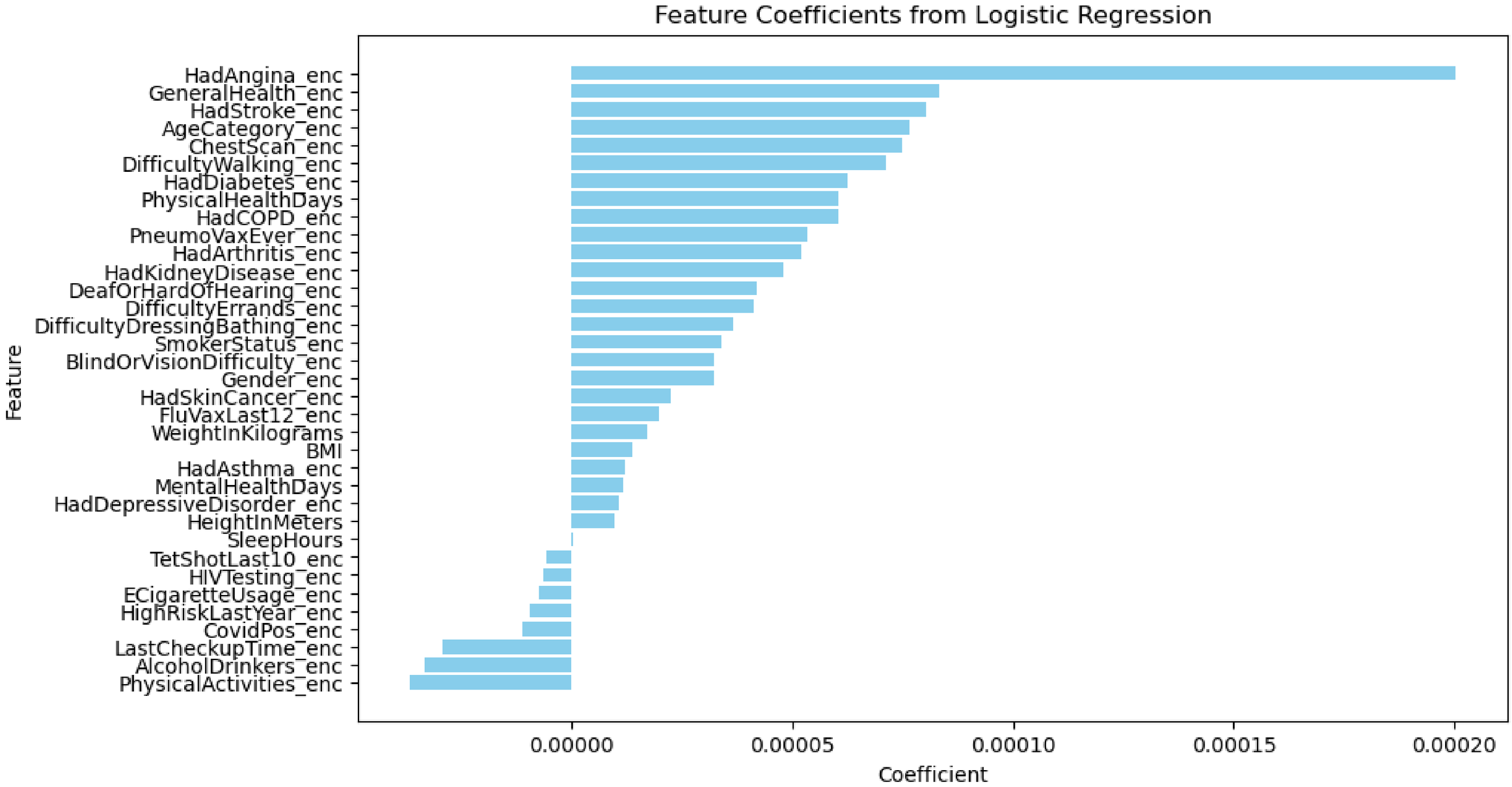
LR



RF



FEATURE COEFFICIENTS

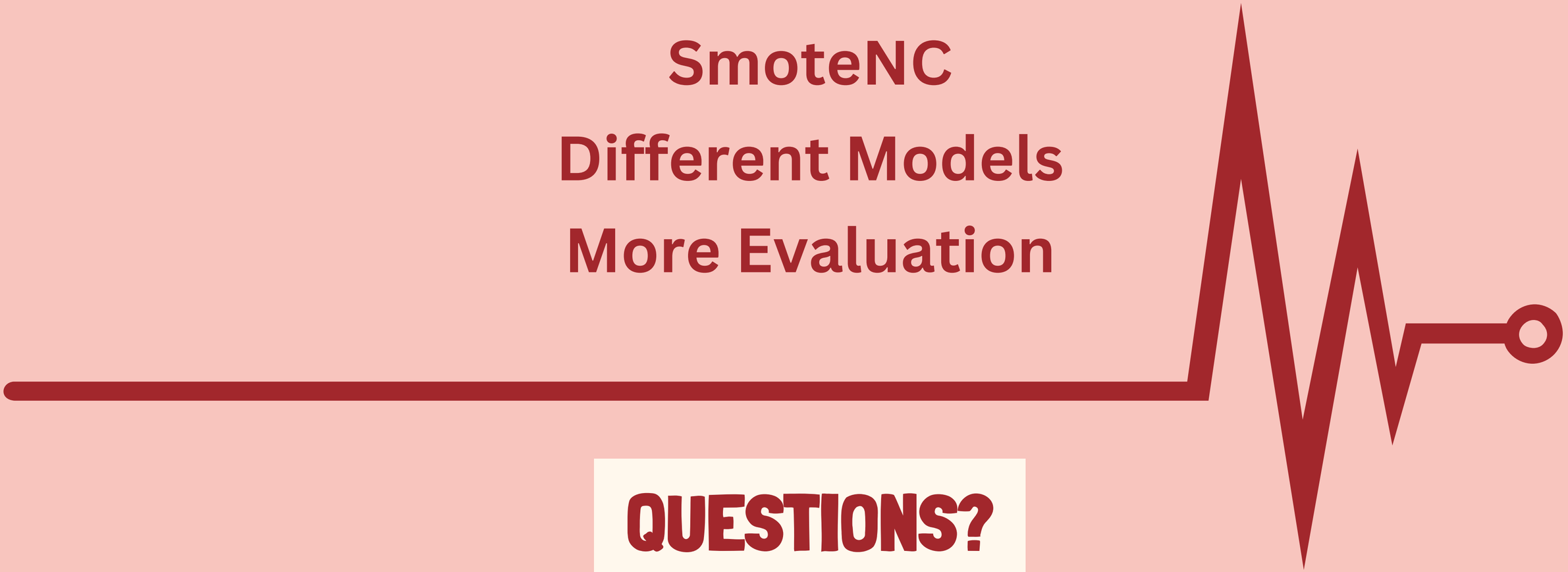


WHATS NEXT?

SmoteNC

Different Models

More Evaluation



QUESTIONS?

PRESS THESE KEYS WHILE ON PRESENT MODE!

- **B** for blur
- **C** for confetti
- **D** for a drumroll
- **M** for mic drop
- **O** for bubbles
- **O** for quiet
- **U** for unveil
- **0-9** Any number from 0-9 for a timer