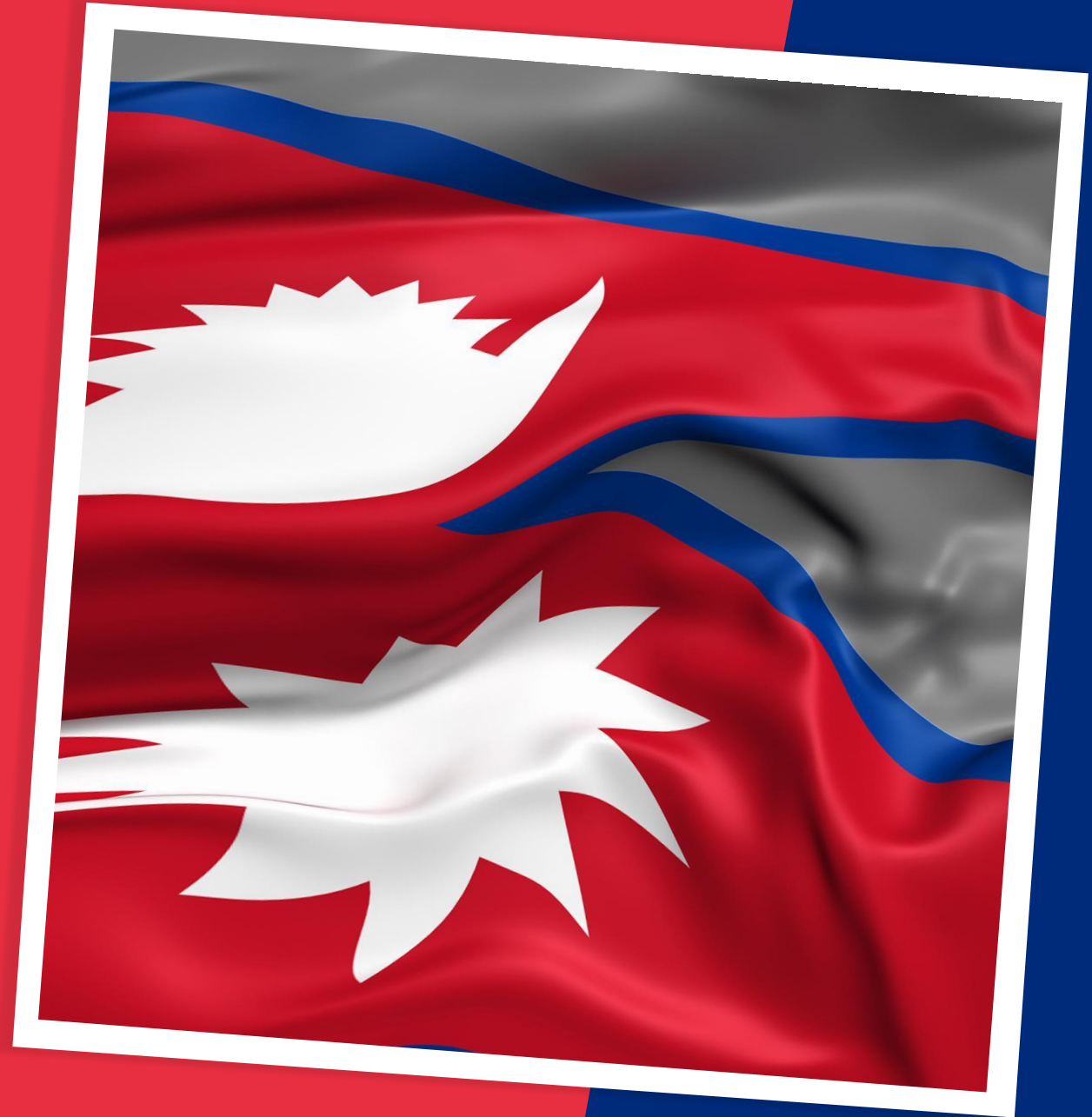# Richter's Predictor

Kyongmin So
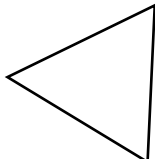June 2022

Introduction

Kyongmin So
Data Science Student

Overview

- ✔ **Business Problem**
- ✔ **Data Understanding**
- ✔ **Methods**
- ✔ **Models**
- ✔ **App**
- ✔ **Conclusion/Next Steps**

Map

GLOBAL SEISMIC HAZARD MAP

Produced by the Global Seismic Hazard Assessment Program (GSHAP),
a demonstration project of the UN/International Decade of Natural Disaster Reduction, conducted by the
International Lithosphere Program.

Global map assembled by D. Giardini, G. Grünthal, K. Shedlock, and P. Zhang
1999

2015 Gorkha Earthquake

A Quote

"Calculations show that there is sufficient accumulated energy, now to produce an 8 magnitude earthquake. I cannot say when. It may not happen tomorrow, but it could possibly happen sometime this century, or wait longer to produce a much larger one."

~ Vinod Kumar Gaur

Business Problem

My model is going to predict the damage of a building in Nepal based off of the features of the building. People could be better prepared for an earthquake and can go reinforce the buildings so people will be better prepared.

Data

- Data is from Driven Data.
- Target Values are:
  - 1 = Least Damage
  - 2 = Medium Damage
  - 3 = Heavy Damage
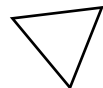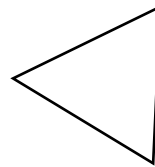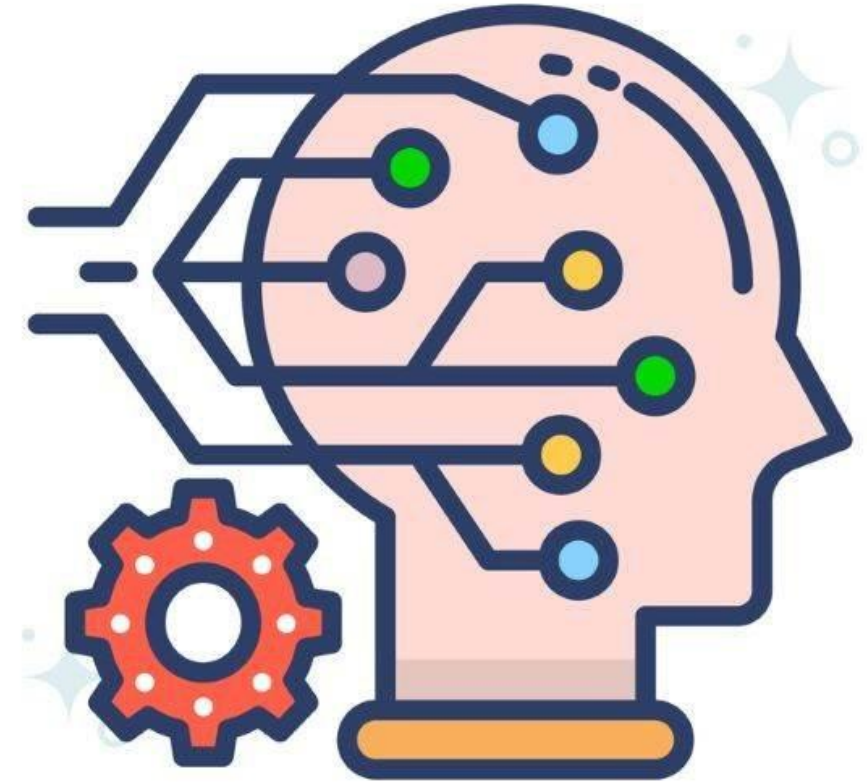- Features that describe buildings.
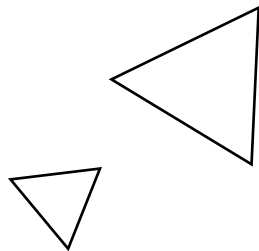
Methods

Models (Supervised Learning)
- Logistic Regression
- Random Forest
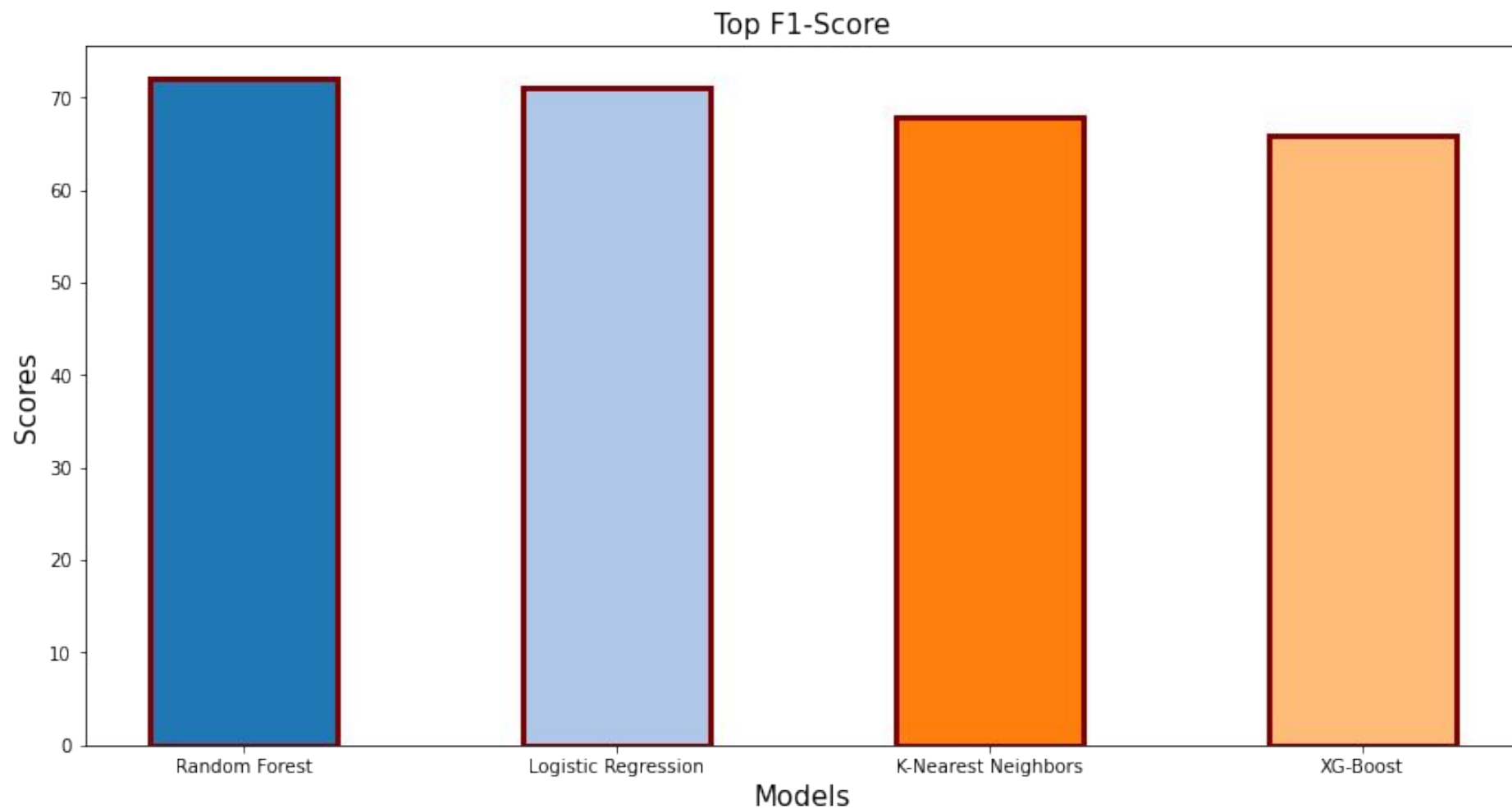- XGBoost
- K-Nearest Neighbors

F1 Micro Score

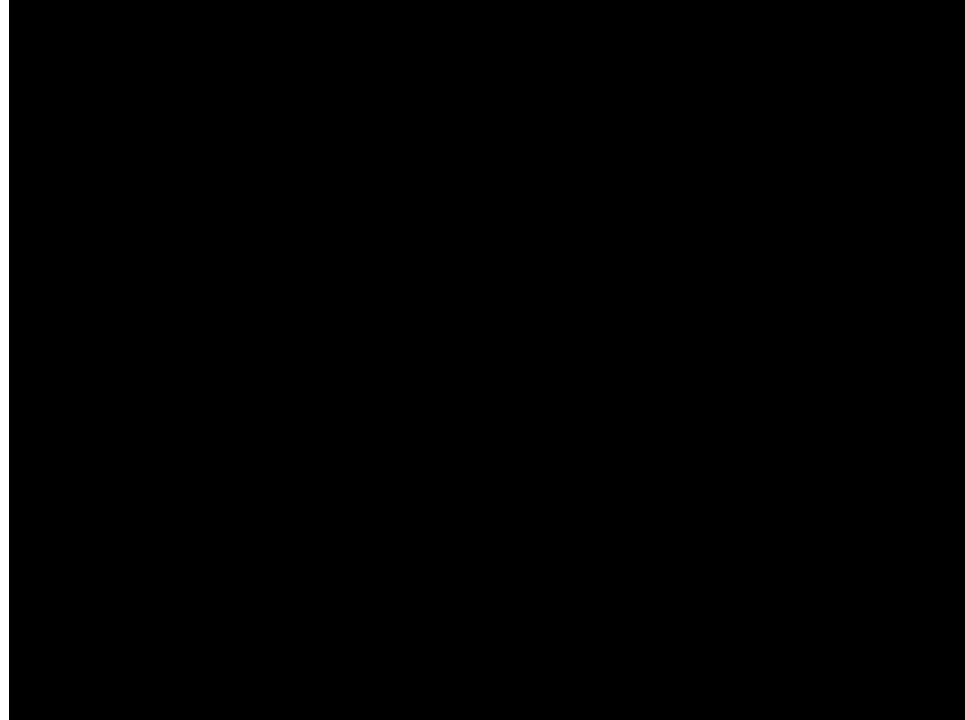# Models/Results

Random Forest
- 72%

Logistic Regression
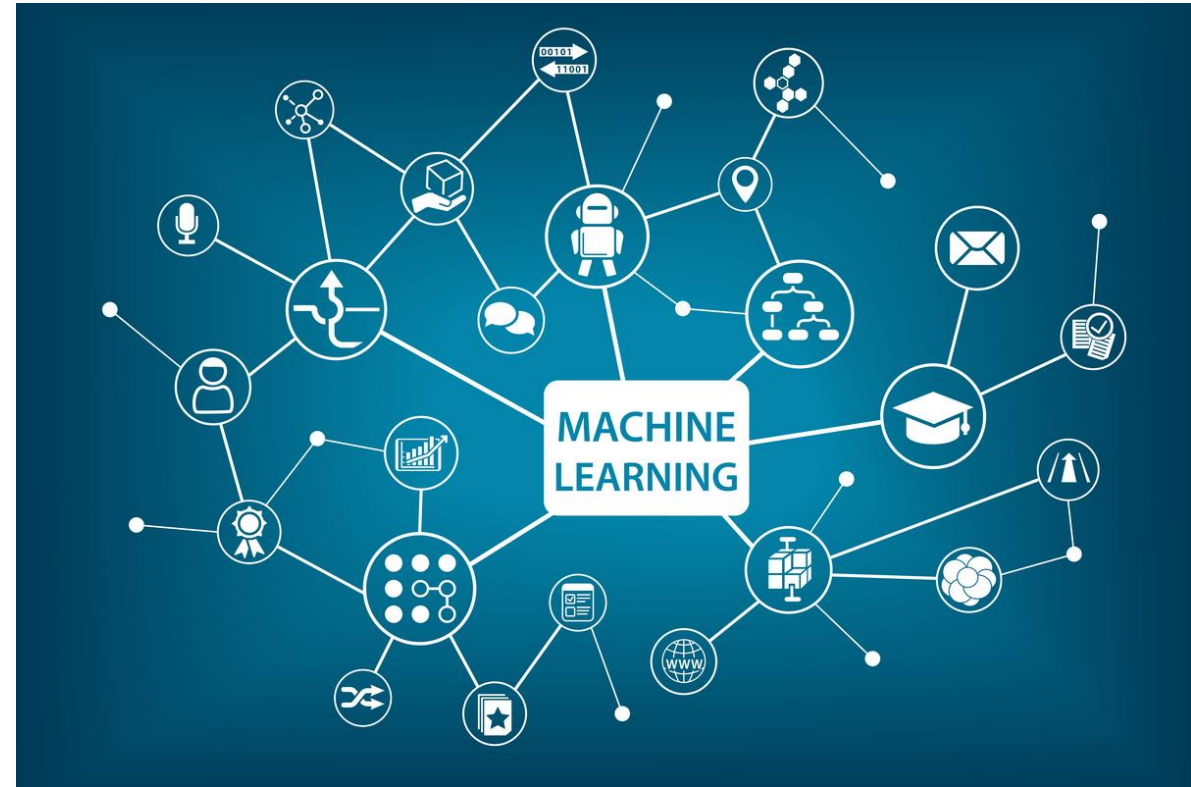- 71%

K-Nearest Neighbors
- 69%

XGBoost
- 66%

Top F1-Score

App

Conclusion

- My scoring was based off of my micro F1 score.

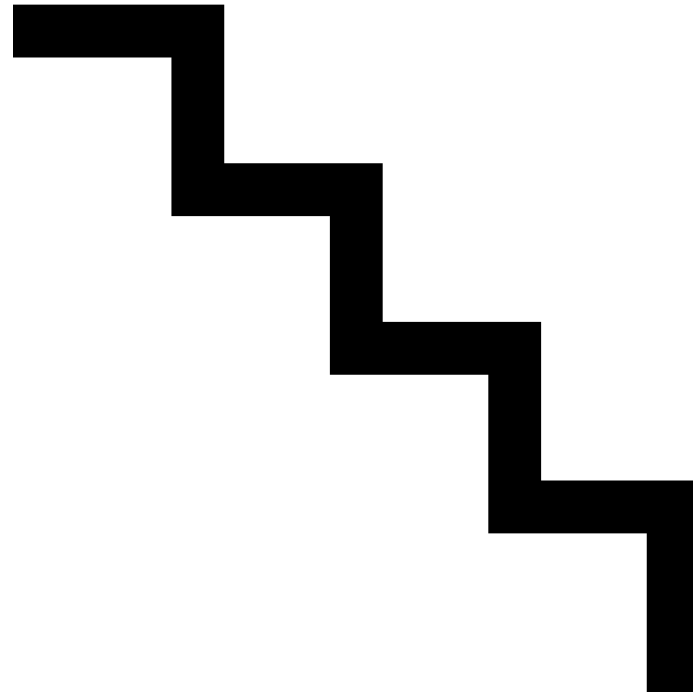- **Random Forest** overall gave me my best score.

Next Steps

- Reinforcement of homes in Nepal
- Data Digging
- Run more models & tune my app

Thank you Flatiron!