



# Video Games Engagement Analysis



Josh Grimes

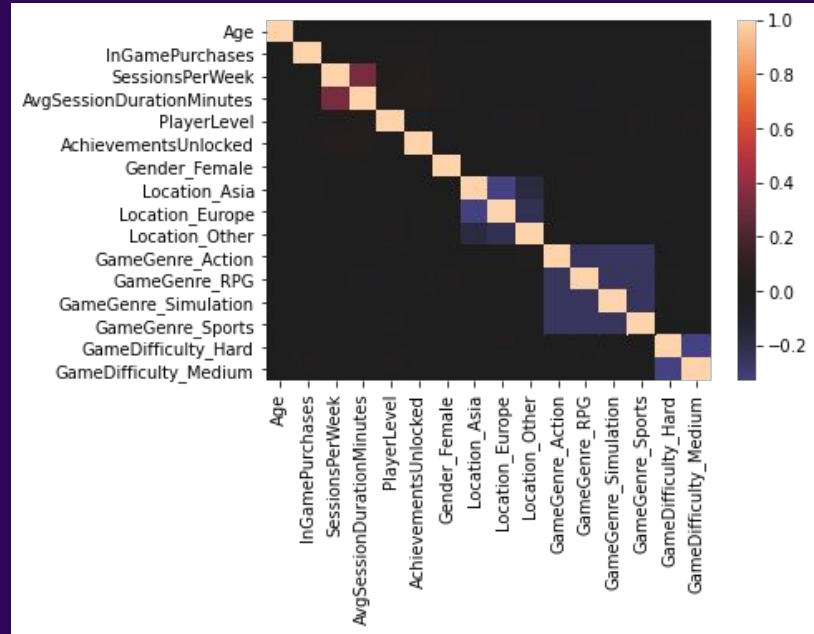
# Business Problem

- Analyze Video Game Player (gamer) data
- Determine best predictors for high engagement players
- Make recommendations to video game producers for targeted game design and advertising



# Data

- Rabie El Kharoua. (2024). 🎮 Predict Online Gaming Behavior Dataset [Data set]. Kaggle.
- 40, 034 entries

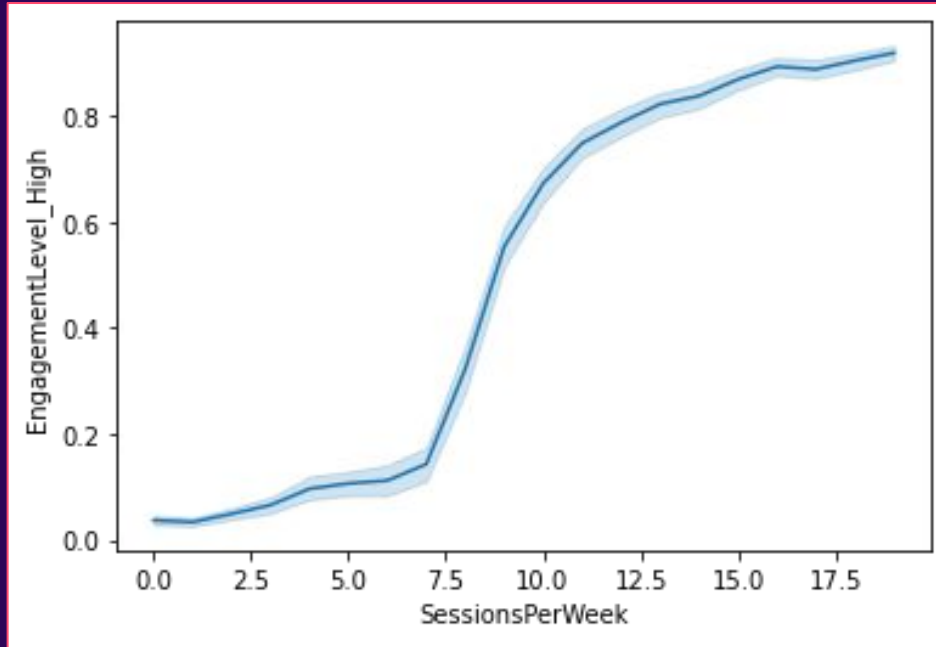


# Predicted Class

- Building models to predict video game engagement
  - Engagement Level High = 10,336 entries
  - Engagement level Low = 10,324 entries



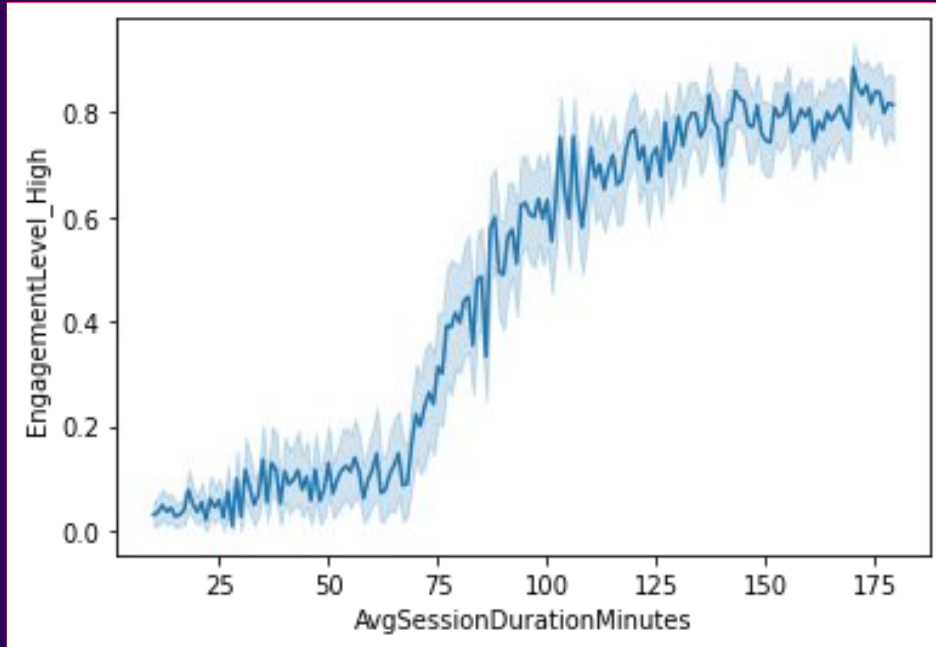
# Findings



## Sessions Per Week

There is a higher proportion of high engagement gamers in gamers who play 9 or more sessions per week.

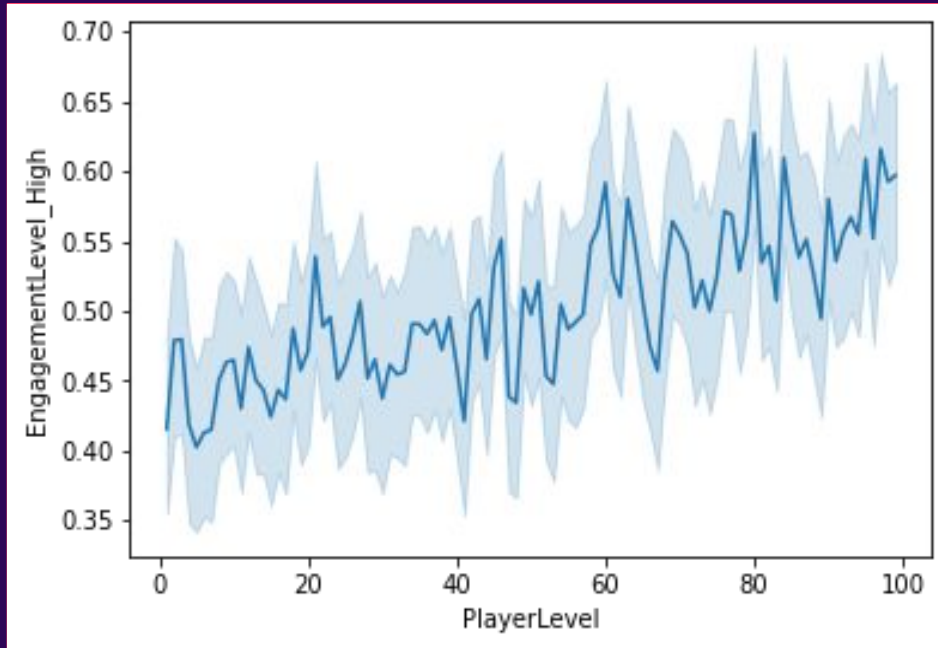
# Findings



## Session Duration

There is a higher proportion of high engagement gamers in gamers who play for 90 minutes or more per session.

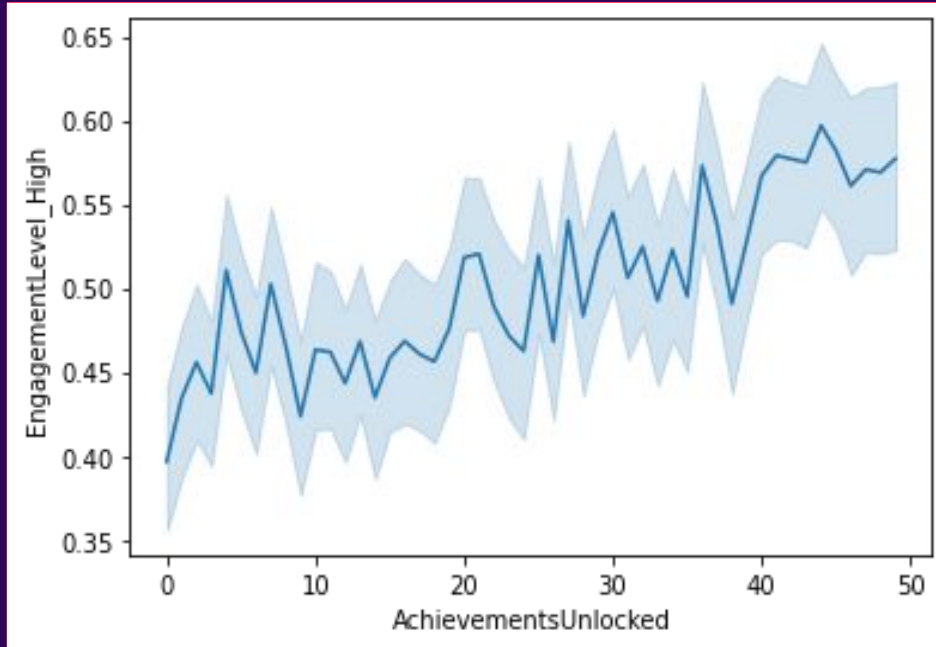
# Findings



## Player Level

There is linear relationship between player level and high engagement gaming.

# Findings

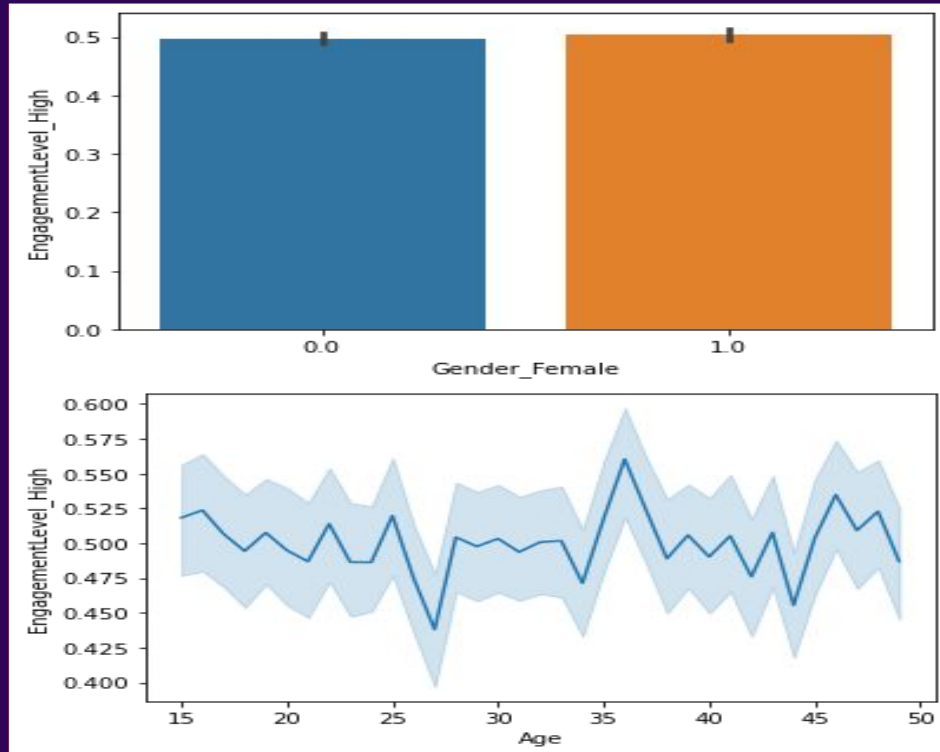


## Achievements

There is linear relationship between the number of achievements unlocked and high engagement gaming.



# Findings



## Age and Gender

There is no relationship between high engagement gamers and age/gender.

# MODELING

**IMPORT DATA AND EDA**

**1**

**PREPROCESSING: DATA  
CLEANING AND NORMALIZATION**

**3**

**HYPERPARAMETER  
TUNING**

**5**

**2**

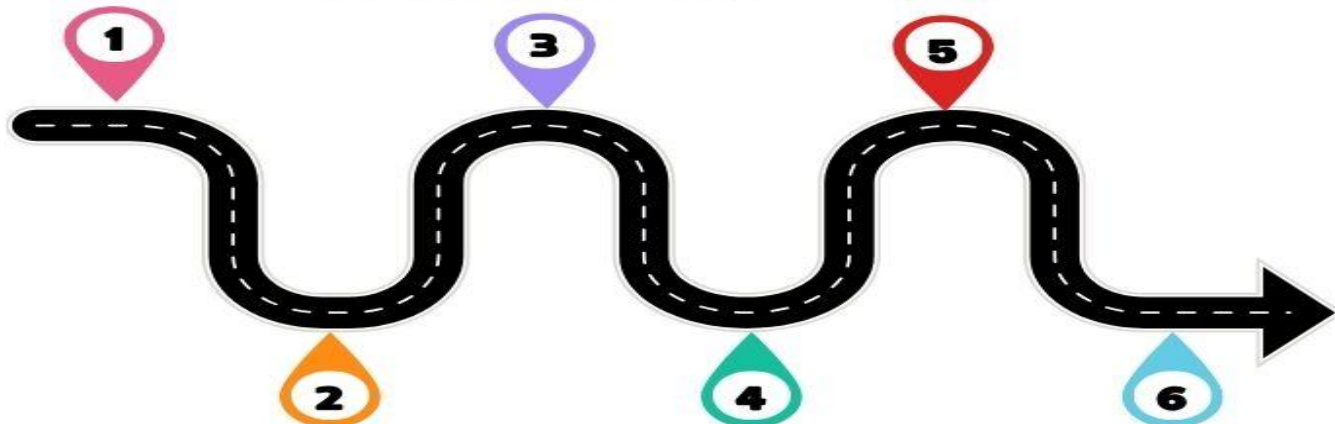
**TRAIN-TEST SPLIT**

**4**

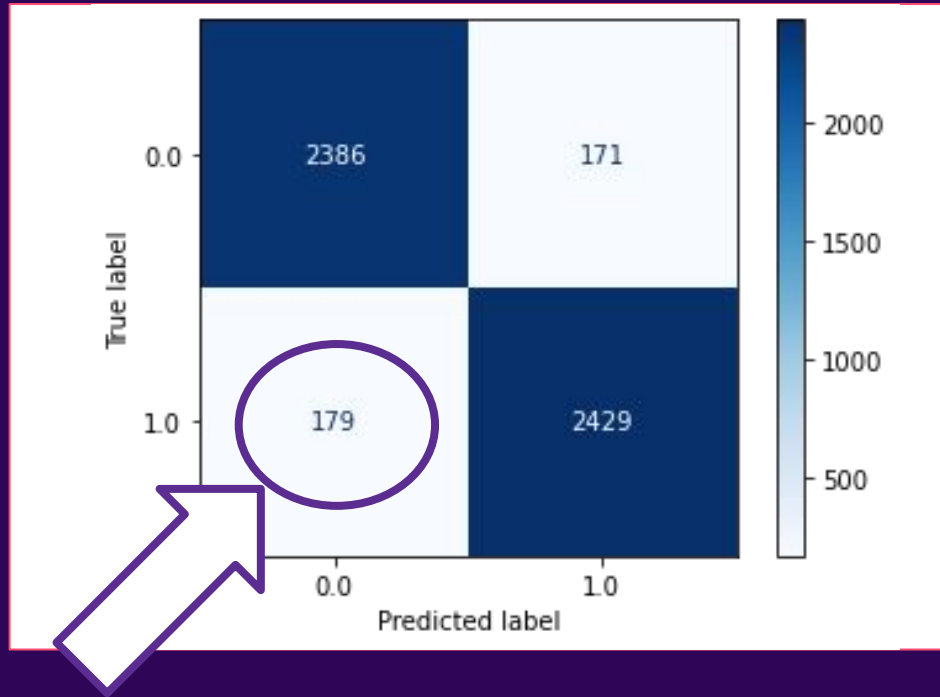
**MODEL SELECTION: LOGISTIC  
REGRESSION, RANDOM FOREST, SVM**

**6**

**MODEL EVALUATION:  
RECALL**



# Model Performance



## False Negatives

The best model produced the least amount of false negatives and has a recall score of .9314

# Recommendations

In order to predict high engagement in video game players, you should look at players who:

- Play 9 or more sessions per week
- Play 90 or more minutes per session

**Not:**

- Age, Gender, Location, Difficulty, Genre





# Next Steps

- Survey Players
- Processing Speed
- Young Gamers?



# Thank You



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