

TEAM 23

**RETIREMENT INCOME
PREDICTOR
[CHALLENGER MODEL]**

THE TEAM



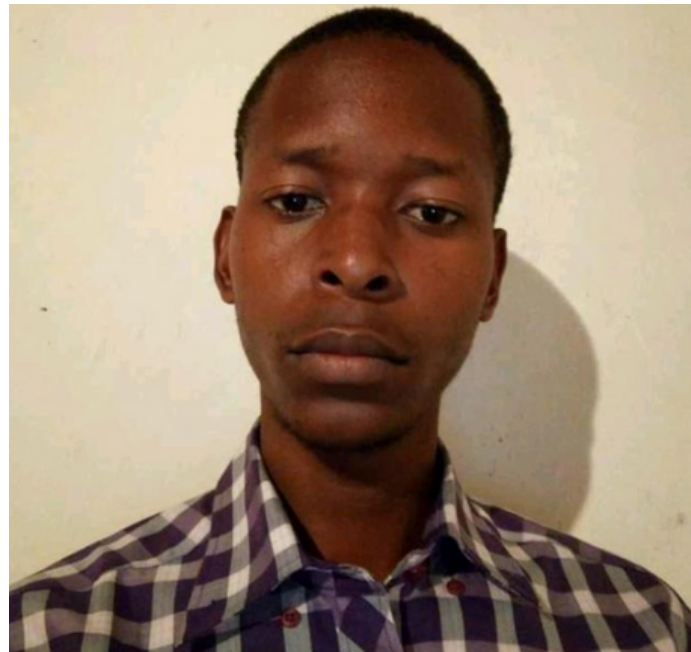
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PRESENTATION OUTLINE

- Introduction
- Project Objectives
- Analytical Findings
- Web App Architectural Design
- Web App demonstration
- Questions/ Discussion



INTRODUCTION

- Uncertainty about retirement funds
- Poor investment choices
- Lack of savings



BACKGROUND

- Earns over \$100,000 annually
- Saves & invests regularly
- Has underlying chronic illness



PROJECT OBJECTIVES

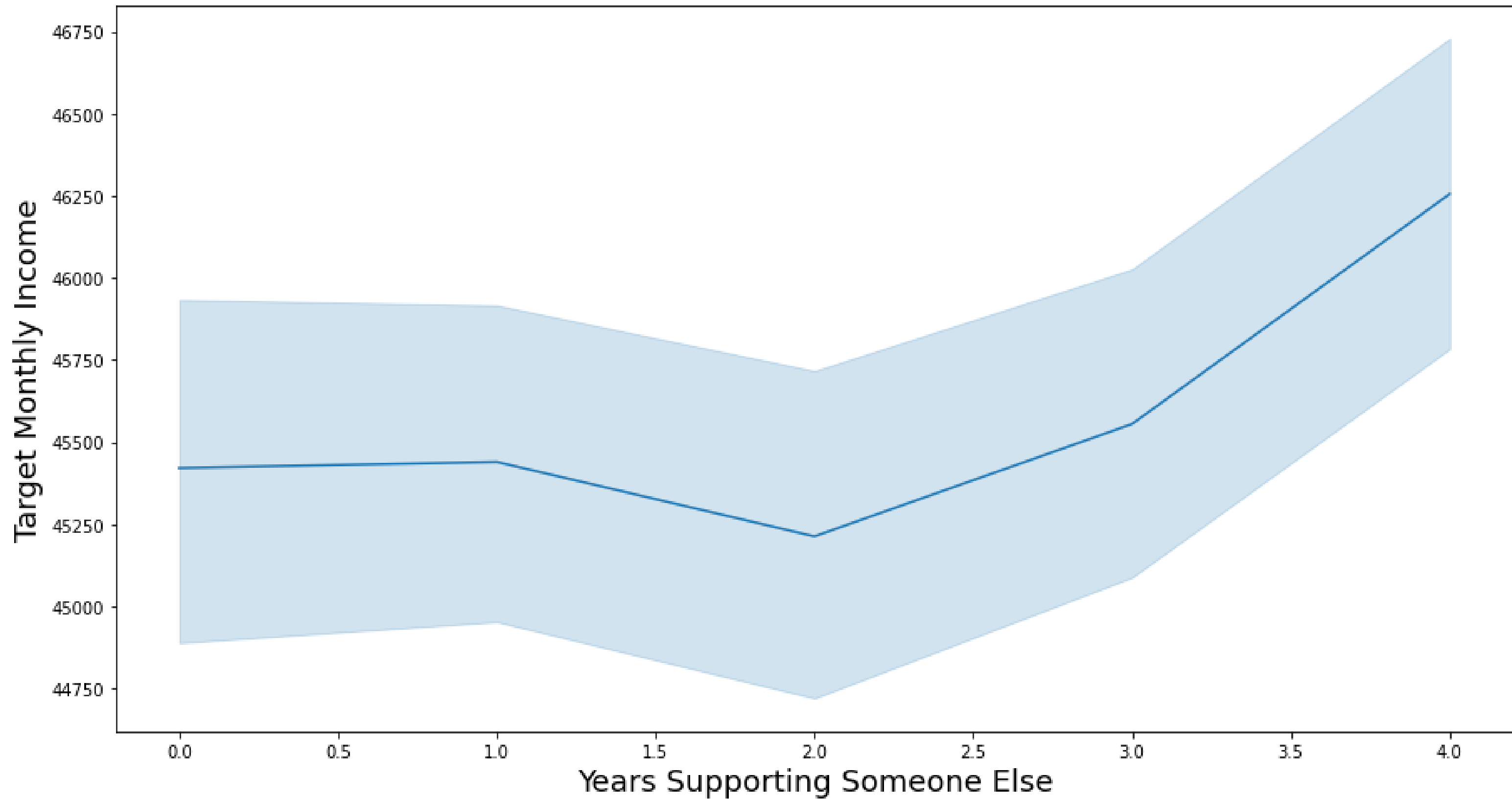
- Predict the target monthly income
- Provide professional retirement advise



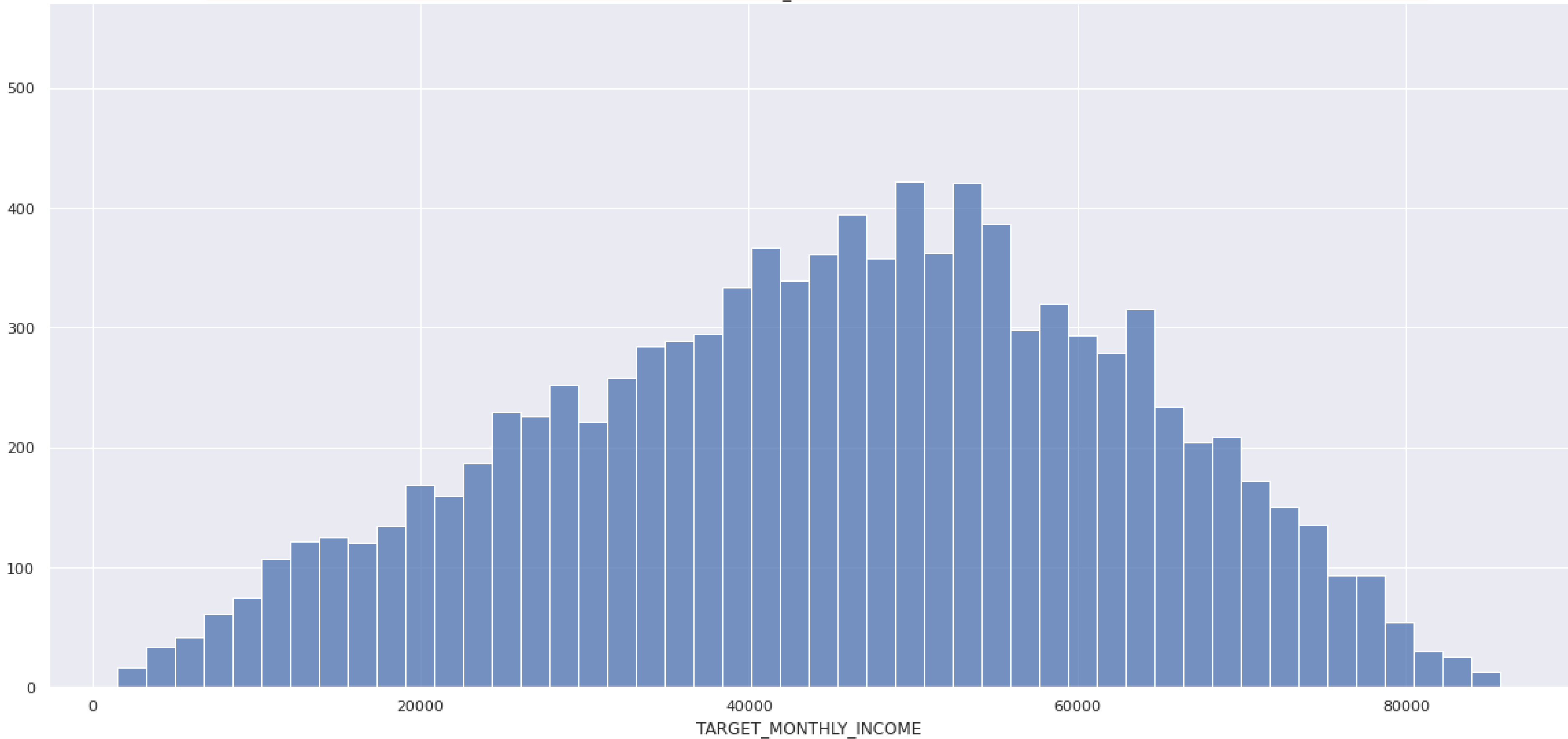
ANALYTICAL FINDINGS



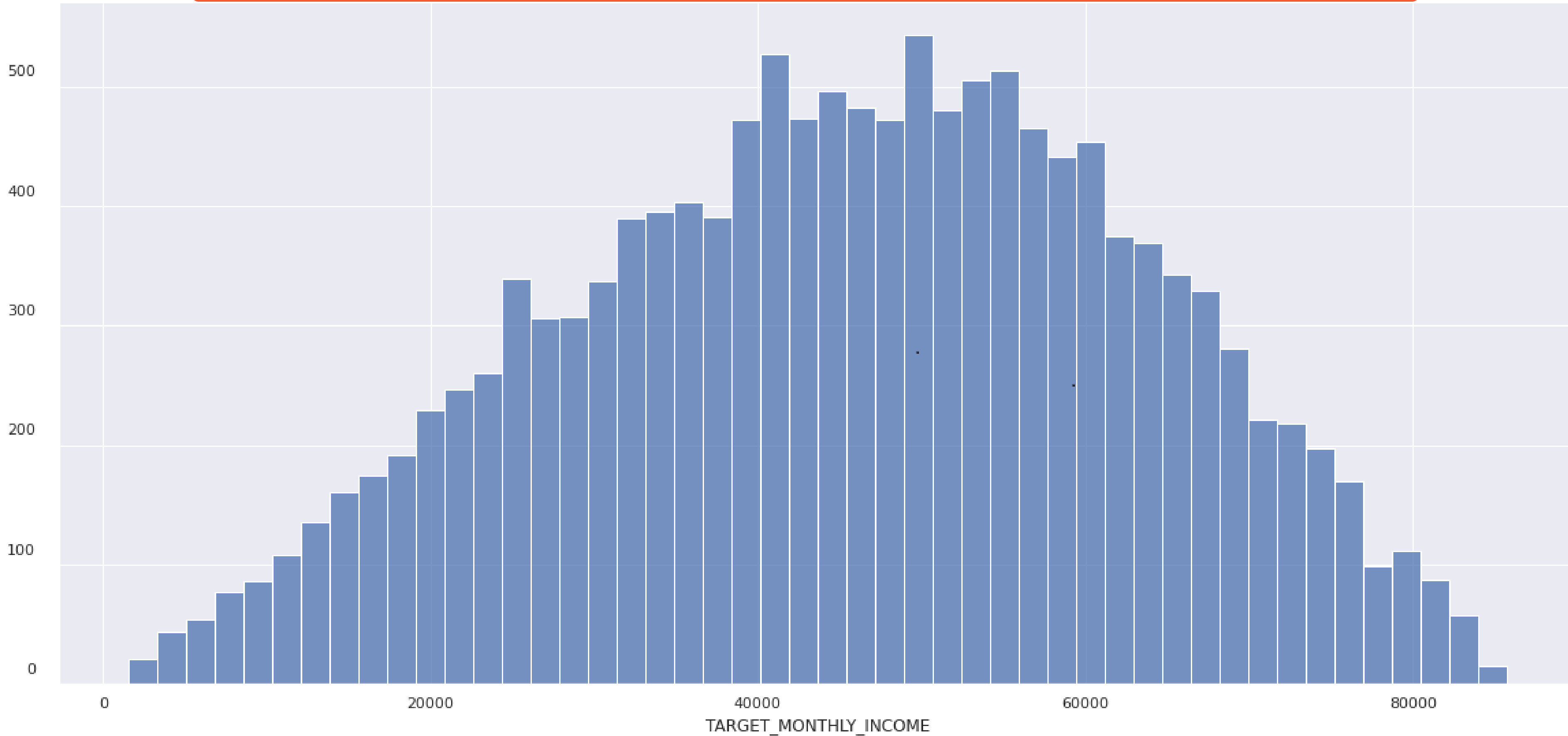
RELATIONSHIP BETWEEN THE YEARS SUPPORTING SOME ELSE AND THE TARGET MONTHLY INCOME



HOW DOES CRITICAL ILLNESS AFFECT THE TARGET MONTHLY INCOME



HOW DOES BEING HEALTHY AFFECT THE TARGET MONTHLY INCOME



APPROACH TAKEN

1

Null values with zeroes.

2

Scaled only the numerical features.

3

Used Ordinal Encoder for categorical variables

4

Converted the '**SPOUSE DATE OF BIRTH**' to DateTime

MODELS USED

1

LightGBM

2

XGBoost

3

CatBoost

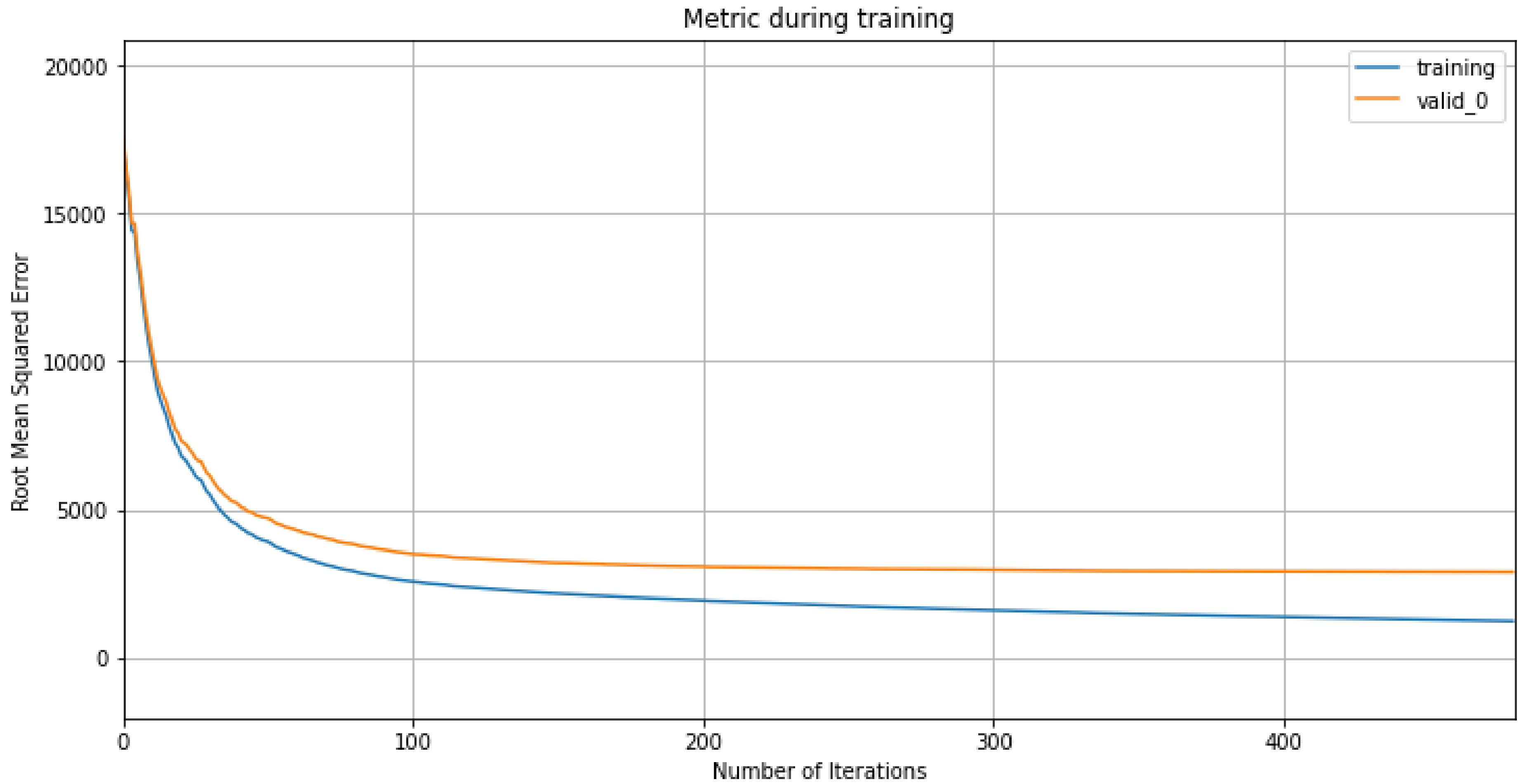
CHALLENGES FACED & SOLUTIONS APPLIED

CHALLENGE	SOLUTIONS APPLIED
Overfitting of the models	<p>Hyperparameters tuning</p> <ul style="list-style-type: none">• Number of leaves• Regularization• Binning• Number of iterations• Booster

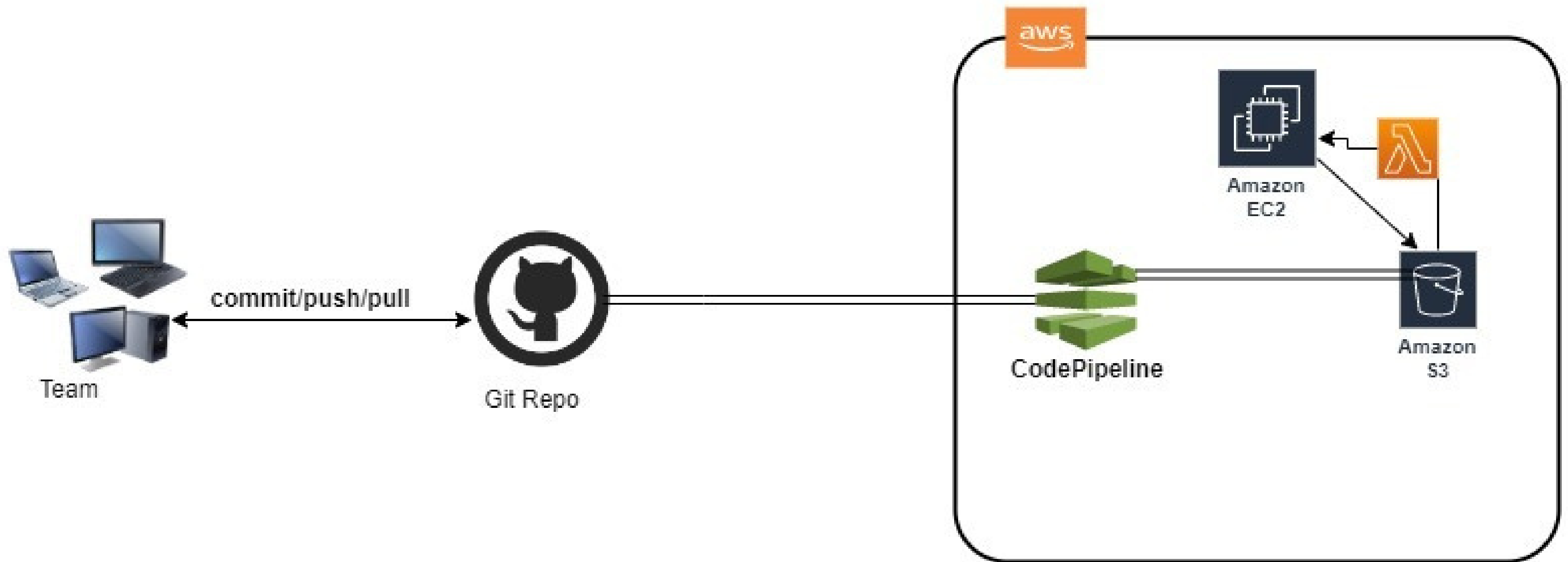
METRICS REPORT

MODEL	BENCHMARK SCORES	LIGHT GBM MODEL
R2 SCORE	0.95	0.96
RMSE	3000	3081
MAE	-	2346

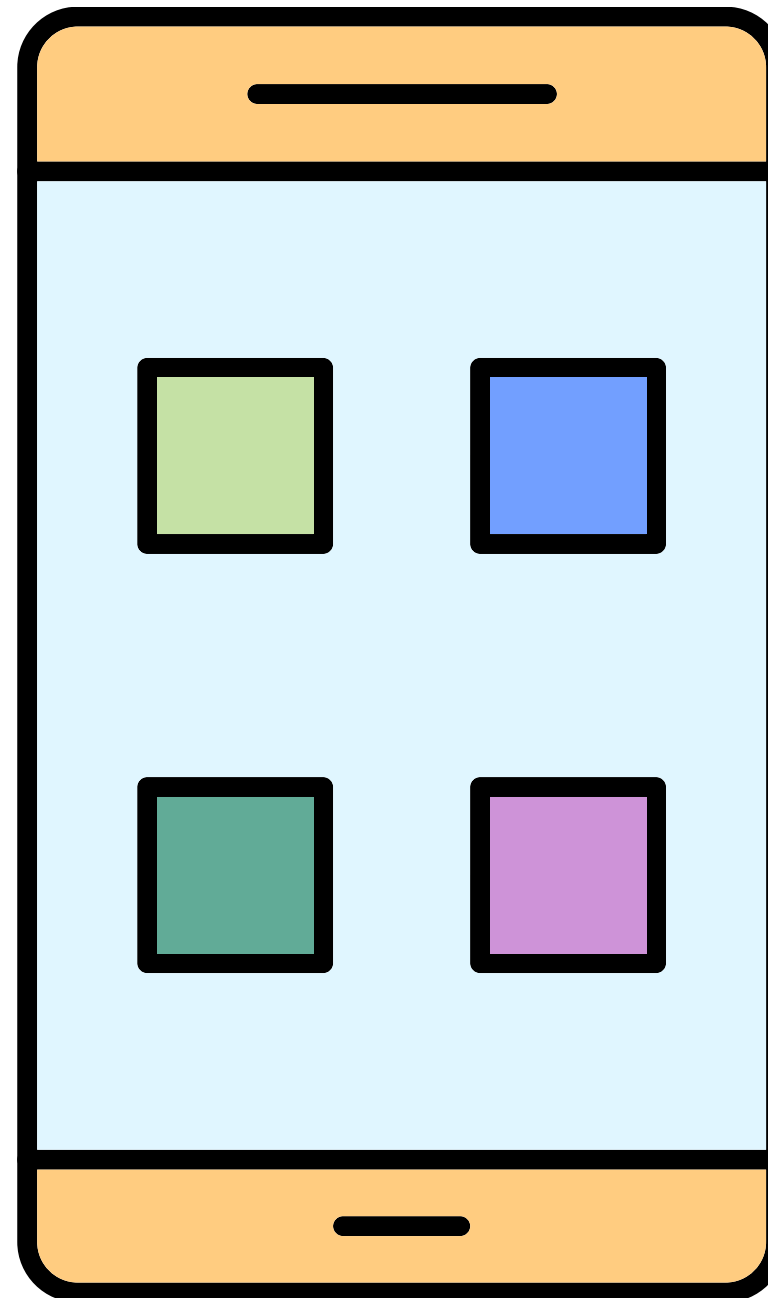
LEARNING CURVE TO CHECK FOR OVERFITTING



ARCHITECTURAL FRAMEWORK



APP DEMONSTRATION



RECOMMENDATIONS

- More focus on feature engineering
- More data

CONCLUSION

Give more focus to the following investment choices:

- SA Bond Lap
- SA Cash Lap
- SA Equity Lap
- International Equity Lap

THANKS!

