

Predicting the winner of a League of Legends match

Project D4 - Veronika Kukk, Robin Piir, Otto Kase

BACKGROUND

League of Legends is a video game where red and blue team try to destroy each other's base. Games usually last for 25-35 minutes and we chose to look at first 10 minutes of game data from European servers.

DATA

The data is collected by us from Riot API. In total ~32 000 Diamond I ranked games, 40 attributes, numerical data.

METHODOLOGY

We used Python throughout the entire project - from collecting data to cleaning it and training our models. From the data, we removed odd outliers, such as data anomalies caused by interactions with certain characters, games that were cancelled at the 3 minute mark, etc.

We balanced the data using random undersampling. We examined the correlations between game attributes and match result to remove columns that have a smaller influence on the match result. We tested 5 different classification algorithms to find the one with the best results on each server.

	EUNE	EUW
Naive Bayes	71.1%	70.7%
Voting Classifier	71.2%	70.8%
Random Forest	69.6%	70.1%
Random Forest *	70.9%	71.7%
Decision Tree	61.9%	60.9%
Decision Tree *	66.7%	70.4%
KNN	65.7%	65.7%
KNN *	69.0%	68.3%

* - parameter tuning with RandomizedSearchCV

OBJECTIVES

Goal 1

To create a model that predicts whether blue team wins or loses for both servers separately.

Goal 2

To compare EUNE and EUW servers to determine where Diamond I players perform better.

RESULTS

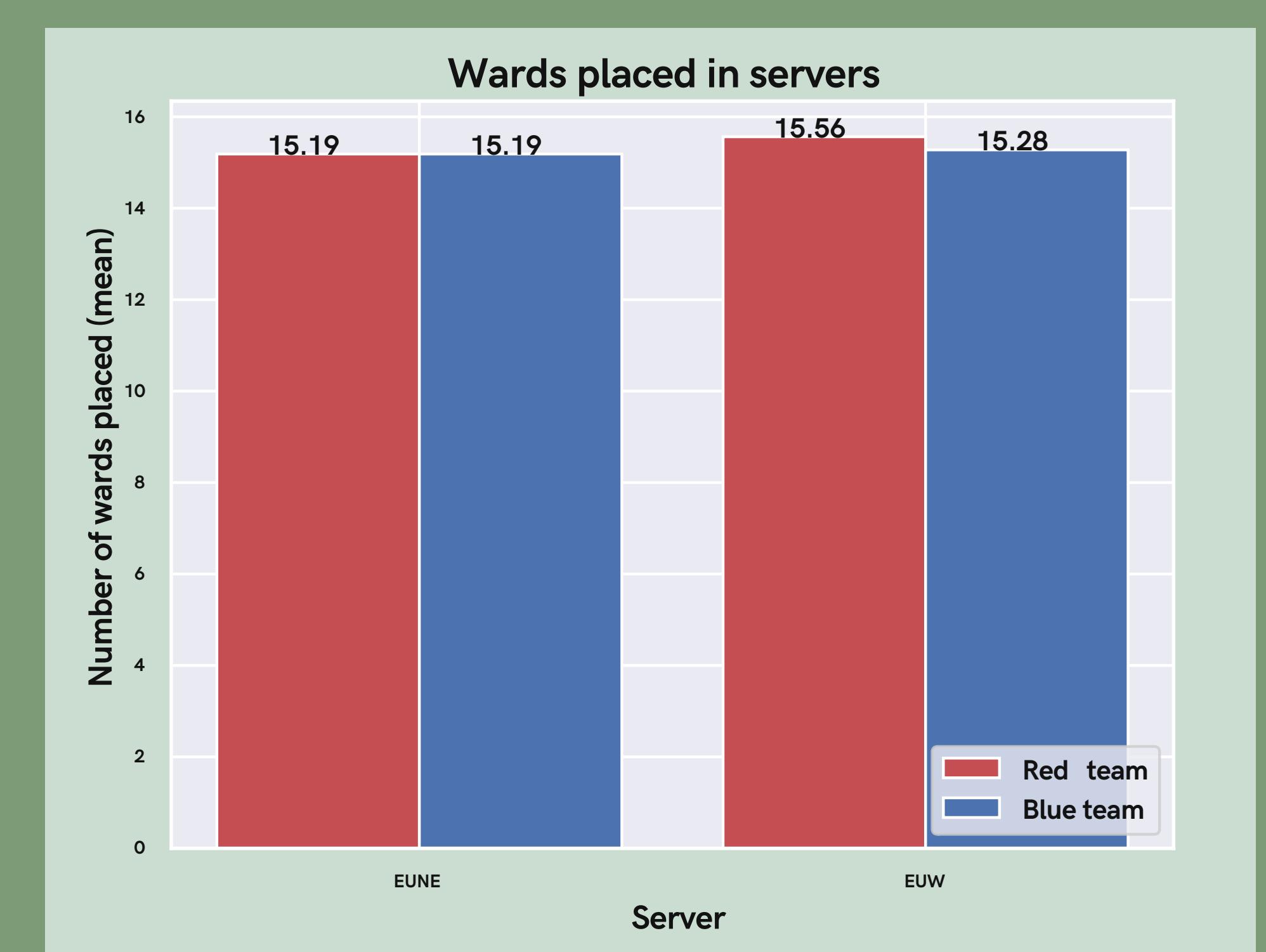
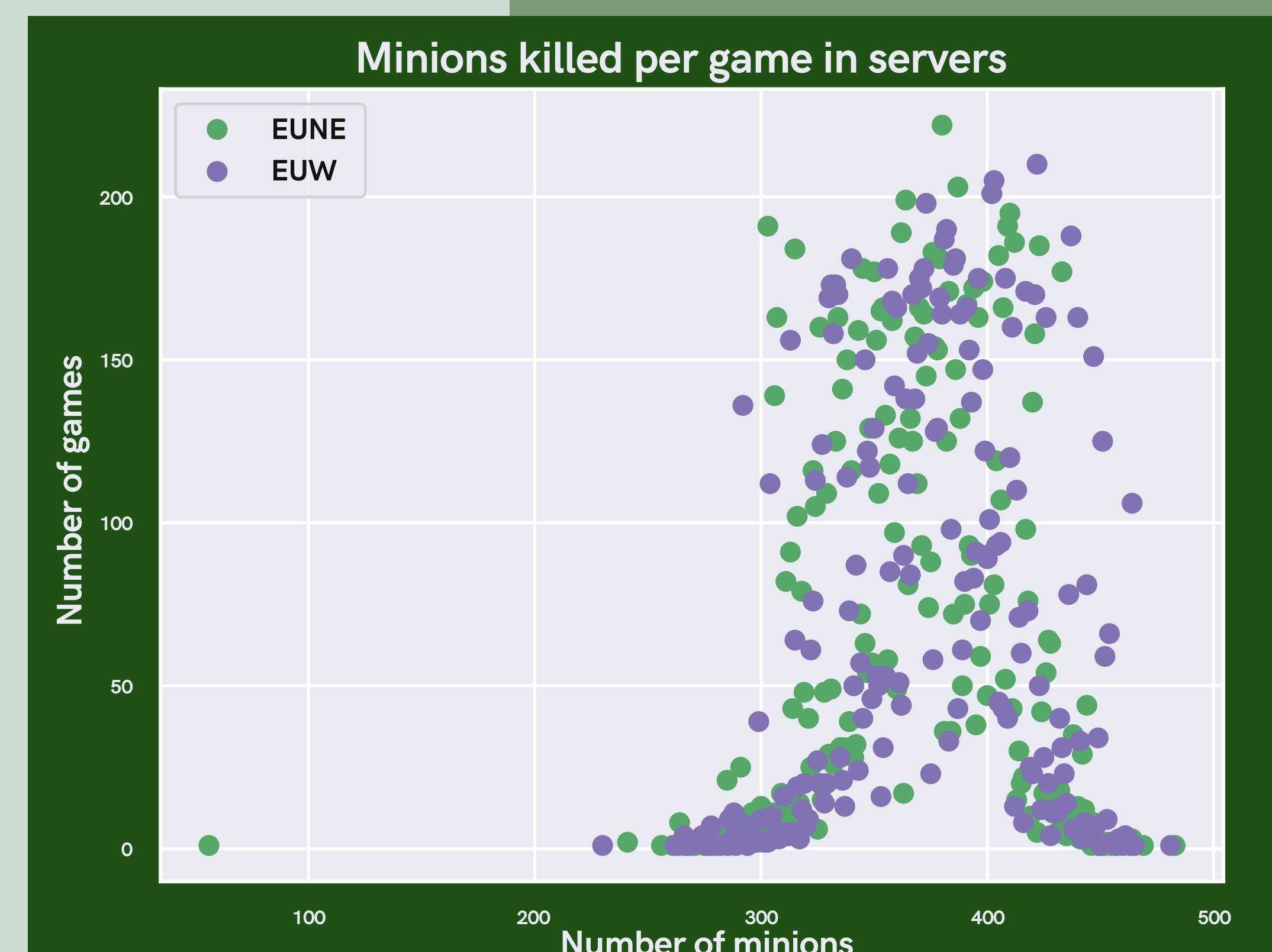
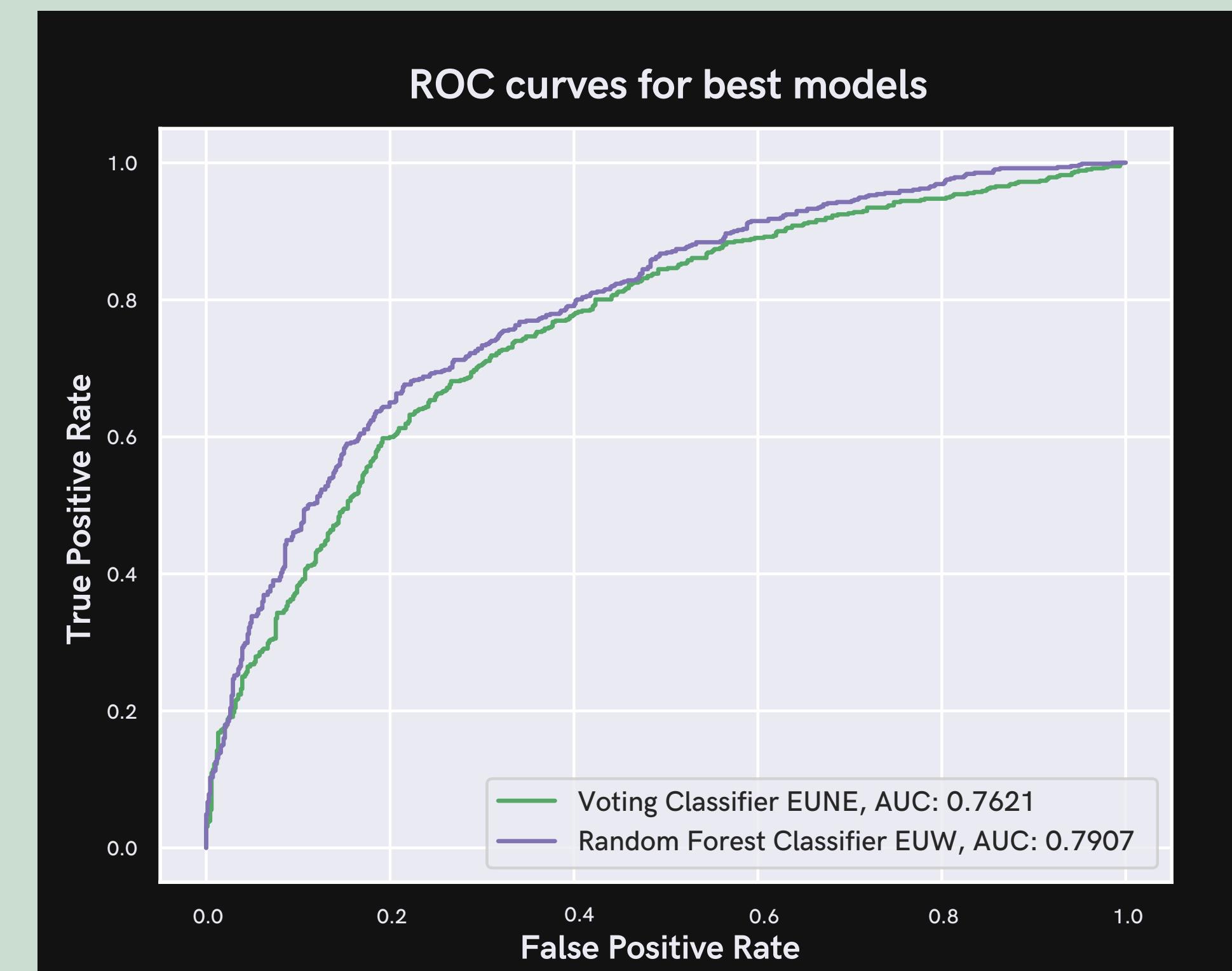
Goal 1

RESULTS

Goal 1

The best performing model on the EUNE server was Voting Classifier, with a 71% accuracy.

On the EUW server, the Random Forest Classifier model outperformed the others with a 72% accuracy.



Amount of wards placed and minions killed best describe a good player. Wards keep players safe, therefore placing them is beneficial. Killing minions is the safest and most guaranteed way to earn gold and experience.