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Is Dota Plus a pay-to-win service?

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Introduction

The purpose of the project is to find an answer to the question " Is Dota Plus a Pay-to-win service?". Dota stands for Defense of the Ancients and it is a Massively Open Battle Arena (MOBA) and it is a free to play (F2P) game. It is a 5v5 game which has all the elements of a normal team game like strategy, skill, teamwork etc. Dota Plus is an in-game assistant which uses machine learning to give the player a variety of in game suggestions based on in game events and overall analytics. Some of the suggestions are hero pick suggestions, ability build suggestions and lane strategy suggestions. Dota Plus assistant also gives the player statistics like death summary, post game analytics, real time analytic comparisons and hero trends like win rate, pick rate, global trends and ban rate .

Background

All the data used for this project has been gathered by making API calls to the Open Dota API. The Open Dota is an open source Dota 2 platform which is open sourced and has detailed matchmaking data.

Project

The data has been put into three categories: very high skill, low skill and normal skill. This classification is done based on the player's 'Match making rating' which is determined by the player's overall win percentage and loss percentage. The data is then divided into two categories based on whether a player is a Dota Plus subscriber or a non subscriber.

A.Win / Loss

Looking at win rate of players in the same skill bracket to see if the subscribers are doing better than non-subscribers.
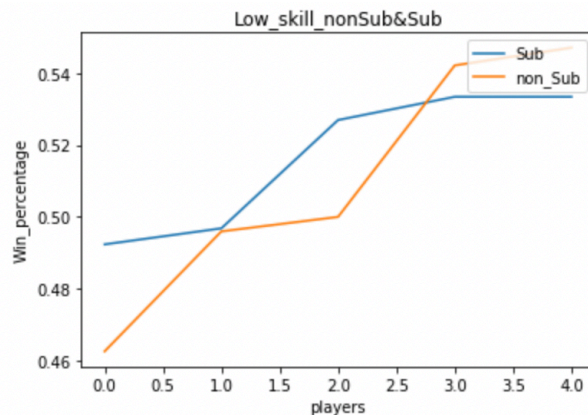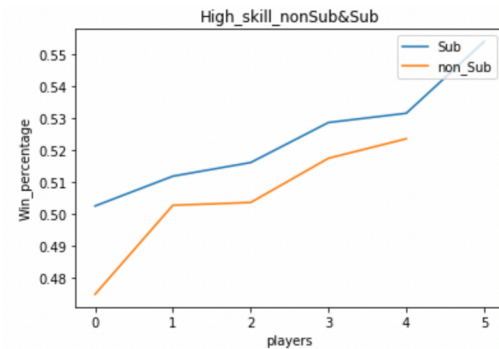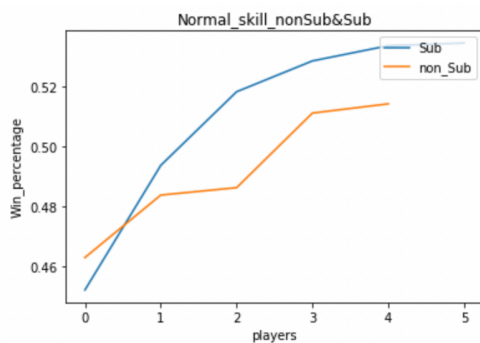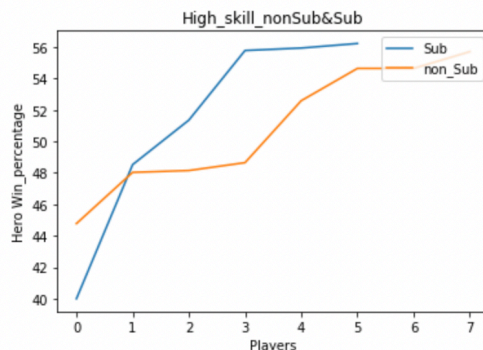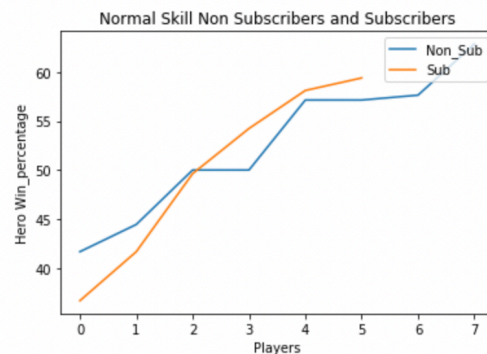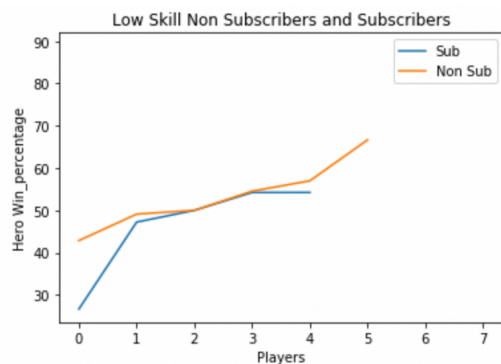

Results:

Though they belong to the same skill bracket , the players who have subscribed to Dota Plus are performing better than the non-subscribers. The possible reason for this is that the subscribers are able to use the real time suggestions given by the plus assistant to their advantage. The high skill players who are considered to be professionals in the game are leveraging the in game real time suggestions by the plus assistant to the full extent to their advantage.

B. Win Loss : Heroes

Since there is a significant increase in the overall win rate of the players who have subscribed for Dota Plus, there can also be a significant increase in the win rate of the heroes that the players pick. The following graphs show the win rate on a certain hero between subscribers and non subscribers given that the players have played at least 200 games with that hero.

Results:

The results show that players who have subscribed for Dota Plus, especially the high skilled players, have significantly improved their performance on their favorite heroes. This is a huge factor because in Dota 2, this level of increase in the player's performance means they rise up the ranks faster.

Summary:

The main purpose of the project is to determine whether Dota Plus is a pay-to-win service by drawing conclusions based on the insights that we gathered by analyzing the data. The data has been gathered from OPEN DOTA API. The data has been divided into three different skill brackets based on a player's match making rating. In each skill bracket the data has been further divided into subscribers and non-subscribers. We looked at win rates of players who have and not have subscribed to Dota Plus in all the different skill brackets. We have also looked at the differences in the player's performance on certain heroes.

Results and Conclusions:

We have been able to conclusively determine that Dota Plus is a pay-to-win service by looking at the player's overall win rates and also how well the player's performance increased on their favorite heroes. The results have been positive and there has been a huge difference in the player's performance especially in the high skill bracket who are able to successfully leverage these suggestions and real time statistics provided by the assistant to their advantage. Dota Plus is indeed a pay to win service.