

# Data Science Project Report

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## 1 Introduction

DotA 2[1] is a Multiplayer Online Battle Arena (MOBA) game. It's played as 5vs5 PVP. You have a limited pool of characters (called heroes) to pick for every game and some heroes counter others. Your goal is to destroy the enemy Ancient and win the game by doing so. In order to win you must communicate with your teammates and approach the game strategically.

I've been playing DotA 2 for several years now and I've always felt the lack of meaningful statistical analysis over the heroes this is why I've decided to create this tool.

My project is going to analyse the enemy team's picks and offer you a set of heroes to pick.

## 2 Materials & Methods

First, I tried to use an API that fetches game data from the game's server called OpenDota[2]. But due to poor documentation and limited calls I decided to use Web-scraping from DotaBuff[3]. I used a HTML parsing library called BeautifulSoup[4] to get the information from the website. Using `find_all()`[5] I went to the "Heroes" section of the website and fetched the class named "Heroes", saved them on a Data Frame and used the names to go to individual links by appending the hero names into the url string. Then I went to counters section by adding `"/counters"` to end of the urls. Then I've selected all the counters for all the heroes with disadvantage more than 1% and create a new column to add them to the Data Frame. After that I counted the number of counters and added them to the Data Frame as well.

## 3 Results

I learnt how to scrape data and create a data set on my own and clean it from unwanted data. I will continue this project with using real-time match data and generating meaningful hero suggestions. If I can I would want to add a Machine Learning model to predict what the enemy team might pick.

## References

- [1] <https://www.dota2.com/home>
- [2] <https://docs.opendota.com/>
- [3] <https://www.dotabuff.com/>
- [4] <https://www.crummy.com/software/BeautifulSoup/bs4/doc/>
- [5] <https://www.crummy.com/software/BeautifulSoup/bs4/doc/#navigating-using-tag-names>