



Dota 2 Statistic



Overview



Motivation


We want to analyze the statistic in the game to get more game data. With more game data, we can pick the META* hero to gain advantages over the enemy and get the EZ win.

'Knowledge is a weapon.

I intend to be formidably armed.'

- Terry Goodkind

*Most Effective Tactics Available






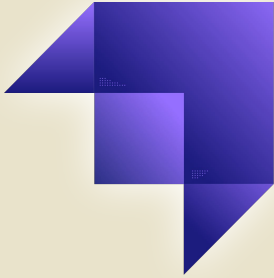
Overview

02

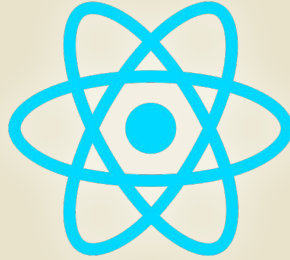
User Pain Point

- Many players don't know which hero they want to pick, so they want to see which hero is the most effective right now. But there is no in-depth data about these heroes (Match pick count, etc.) and the major website tells just shallow detail of the hero/match.
- 

Overall architecture



API Endpoint
NodeJS Strapi



Front-End
React-JS



Database
MongoDB

Data Source

Heroes Win-rate, Pick-rate and Matches

<https://www.dotabuff.com/>

Heroes Image

<http://www.dota2.com/heroes/>

Heroes Stats and Skills

<https://docs.stratz.com/index.html/>



Collection Mechanisms

Heroes Detail And Ability

Using API to get raw Json data.

Heroes Image

Using web scraping using Python BeautifulSoup 4.

Heroes Win Rate% and Pick Rate%

Using web scraping using Python Pandas and BeautifulSoup4.

Data Manipulation

Before (Raw Data)

```
"1": {
  "id": 1,
  "name": "npc_dota_hero_antimage",
  "displayName": "Anti-Mage",
  "shortName": "antimage",
  "abilities": [
    {
      "slot": 1,
      "abilityId": 5003
    },
    {
      "slot": 2,
      "abilityId": 5004
    },
    {
      "slot": 3,
      "abilityId": 7314
    },
    {
      "slot": 4,
      "abilityId": 6251
    },
    {
      "slot": 5,
      "abilityId": 6251
    },
    {
      "slot": 6,
      "abilityId": 5006
    }
  ]
},
```

Data Manipulation

After (Restructured)

Dota2.characters

COLLECTION SIZE: 137.98KB TOTAL DOCUMENTS: 119 INDEXES TOTAL SIZE: 36KB

[Find](#) [Indexes](#) [Schema Anti-Patterns](#) ⓘ [Aggregation](#) [Search Indexes](#)

[INSERT DOCUMENT](#)

FILTER {"filter": "example"}

[Find](#) [Reset](#)

QUERY RESULTS 1-20 OF MANY

```
_id: ObjectId("5fba6975d315786354b93d2e")
name: "npc_dota_hero_antimage"
displayName: "Anti-Mage"
shortName: "antimage"
aliases: ["i'm"]
heroId: 1
gameVersionId: "7.27d"
ability1: "antimage_mana_break"
ability2: "antimage_blink"
ability3: "antimage_counterspell"
ability4: "generic_hidden"
ability5: "generic_hidden"
ability6: "antimage_mana_void"
talents1: "+9 Strength"
talents2: "+15 Attack Speed"
talents3: "+325 Blink Cast Range"
talents4: "+12 Agility"
talents5: "Blink Uncontrollable Illusion"
talents6: "-2.0s Blink Cooldown"
talents7: "+20% Counterspell Magic Resistance"
talents8: "-50s Mana Void Cooldown"
img: "https://cdn.cloudflare.steamstatic.com/apps/dota2/images/heroes/antima..."
startingArmor: 2.36
startingMagicArmor: 25
startingDamageMin: 29
```

↓ SHOW 17 MORE FIELDS

Database

Characteristics (Win-Rate% / Pick-Rate%)

Dota2.characteristics

COLLECTION SIZE: 35.99KB TOTAL DOCUMENTS: 119 INDEXES TOTAL SIZE: 24KB

[Find](#) [Indexes](#) [Schema Anti-Patterns 1](#) [Aggregation](#) [Search Indexes](#)

INSERT DOCUMENT

FILTER {"filter": "example"}

[Find](#) [Reset](#)

QUERY RESULTS 1-20 OF MANY

```
_id: ObjectId("5fb8694ad31578649408fa35")
Hero: "Anti-Mage"
PickRateGuardian: "15.33%"
WinRateGuardian: "49.34%"
PickRateArcher: "15.67%"
WinRateArcher: "49.49%"
PickRateLegend: "15.89%"
WinRateLegend: "50.90%"
PickRateAncient: "15.67%"
WinRateAncient: "49.93%"
PickRateDivine: "14.33%"
WinRateDivine: "48.42%"
```

```
_id: ObjectId("5fb8694ad31578649408fa36")
Hero: "Axe"
PickRateGuardian: "13.82%"
WinRateGuardian: "51.44%"
PickRateArcher: "12.71%"
WinRateArcher: "50.72%"
PickRateLegend: "11.82%"
WinRateLegend: "50.09%"
PickRateAncient: "11.26%"
WinRateAncient: "50.03%"
PickRateDivine: "8.62%"
WinRateDivine: "49.41%"
```

Database

Characters (Stats and Skills)

Dota2.characters

COLLECTION SIZE: 13798KB TOTAL DOCUMENTS: 119 INDEXES TOTAL SIZE: 36KB

[Find](#) [Indexes](#) [Schema](#) [Anti-Patterns](#) [Aggregation](#) [Search Indexes](#)

[INSERT DOCUMENT](#)

FILTER {"filter": "example"}

[Find](#) [Reset](#)

QUERY RESULTS 1-20 OF MANY

```
.id: ObjectId("5fba6975d315786354b93d2e")
name: "npc_dota_hero_antimage"
displayName: "Anti-Mage"
shortName: "antimage"
aliases: ["'am'"]
heroId: 1
gameVersionId: "7.27d"
ability1: "antimage_mana_break"
ability2: "antimage_blink"
ability3: "antimage_counterspell"
ability4: "generic_hidden"
ability5: "generic_hidden"
ability6: "antimage_mana_void"
talents1: "+9 Strength"
talents2: "+15 Attack Speed"
talents3: "+325 Blink Cast Range"
talents4: "+12 Agility"
talents5: "Blink Uncontrollable Illusion"
talents6: "-2.0s Blink Cooldown"
talents7: "+20% Counterspell Magic Resistance"
talents8: "-50s Mana Void Cooldown"
img: "https://cdn.cloudflare.steamstatic.com/apps/dota2/images/heroes/antima..."
startingArmor: 2.36
startingMagicArmor: 25
startingDamageMin: 29
```

[SHOW 17 MORE FIELDS](#)

Database

Hero Images

Dota2.heroimgs

COLLECTION SIZE: 15.93KB TOTAL DOCUMENTS: 119 INDEXES TOTAL SIZE: 20KB

[Find](#) [Indexes](#) [Schema](#) [Anti-Patterns](#) [Aggregation](#) [Search Indexes](#)

[INSERT DOCUMENT](#)

[FILTER](#) {"filter": "example"}

[Find](#) [Reset](#)


QUERY RESULTS 1-20 OF MANY

```
_id: ObjectId("5fc24bbfd3157868c45a2334")
name: "Anti-Mage"
img: "https://cdn.cloudflare.steamstatic.com/apps/dota2/images/heroes/antima..."
```

```
_id: ObjectId("5fc24bbfd3157868c45a2335")
name: "Axe"
img: "https://cdn.cloudflare.steamstatic.com/apps/dota2/images/heroes/axe_hp..."
```

```
_id: ObjectId("5fc24bbfd3157868c45a2336")
name: "Bane"
img: "https://cdn.cloudflare.steamstatic.com/apps/dota2/images/heroes/bane_h..."
```

```
_id: ObjectId("5fc24bbfd3157868c45a2337")
name: "Bloodseeker"
img: "https://cdn.cloudflare.steamstatic.com/apps/dota2/images/heroes/bloods..."
```



Database

Game Matches

Dota2.matches

COLLECTION SIZE: 21.43KB TOTAL DOCUMENTS: 100 INDEXES TOTAL SIZE: 36KB

[Find](#) [Indexes](#) [Schema Anti-Patterns](#) [Aggregation](#) [Search Indexes](#)

[INSERT DOCUMENT](#)

[FILTER](#) {"filter": "example"}


[Find](#) [Reset](#)

QUERY RESULTS 1-20 OF MANY

```
_id: ObjectId("5fc3608ad3157827443e74c7")
match_id: "57215744292828-11-29"
durations: "31:33"
result: "Dire"
radiant: "Viper,Weaver,Legion Commander,Zeus,Anti-Mage"
dire: "Drow Ranger,Sniper,Phantom Assassin,Pugna,Lion"
```

```
_id: ObjectId("5fc3608ad3157827443e74c8")
match_id: "5721574992828-11-29"
durations: "1:05:05"
result: "Radiant"
radiant: "Axe,Windranger,Ursa,Bloodseeker,Phantom Lancer"
dire: "Spectre,Monkey King,Invoker,Venomancer,Troll Warlord"
```

```
_id: ObjectId("5fc3608ad3157827443e74c9")
match_id: "57215717642828-11-29"
durations: "23:58"
result: "Radiant"
radiant: "Shadow Fiend,Faceless Void,Ogre Magi,Centaur Warrunner,Bounty Hunter"
dire: "Underlord,Phantom Assassin,Rubick,Skywrath Mage,Sniper"
```



Data Sharing API



  **/characters/**

GET: Find all hero detail

  **/characters/:name**

GET: Find specific hero detail by name

  **/characters/count**

GET: Count all data in characters

  **/characters/hero/attribute/:primaryAttribute**

GET: Search all hero by specific primary attribute (agi, int, str)



Data Sharing API



  **/characteristics/**

GET: Find all hero detail

  **/characteristics/hero/:name**

GET: Find specific hero detail by name

  **/characteristics/count**

GET: Count all data in characters



Data Sharing API



  **/heroimgs/**

GET: Find all hero image

  **/heroimgs/hero/:name**

GET: Find specific hero image by name

  **/heroimgs/count**

GET: Count all data in heroimgs



Data Sharing API



  **/matches/**

GET: Find all match

  **/matches/**

POST: Create match

  **/matches/result/:result**

GET: Search all match by result

  **/matches/count/result/:result**

GET: Count all match by result

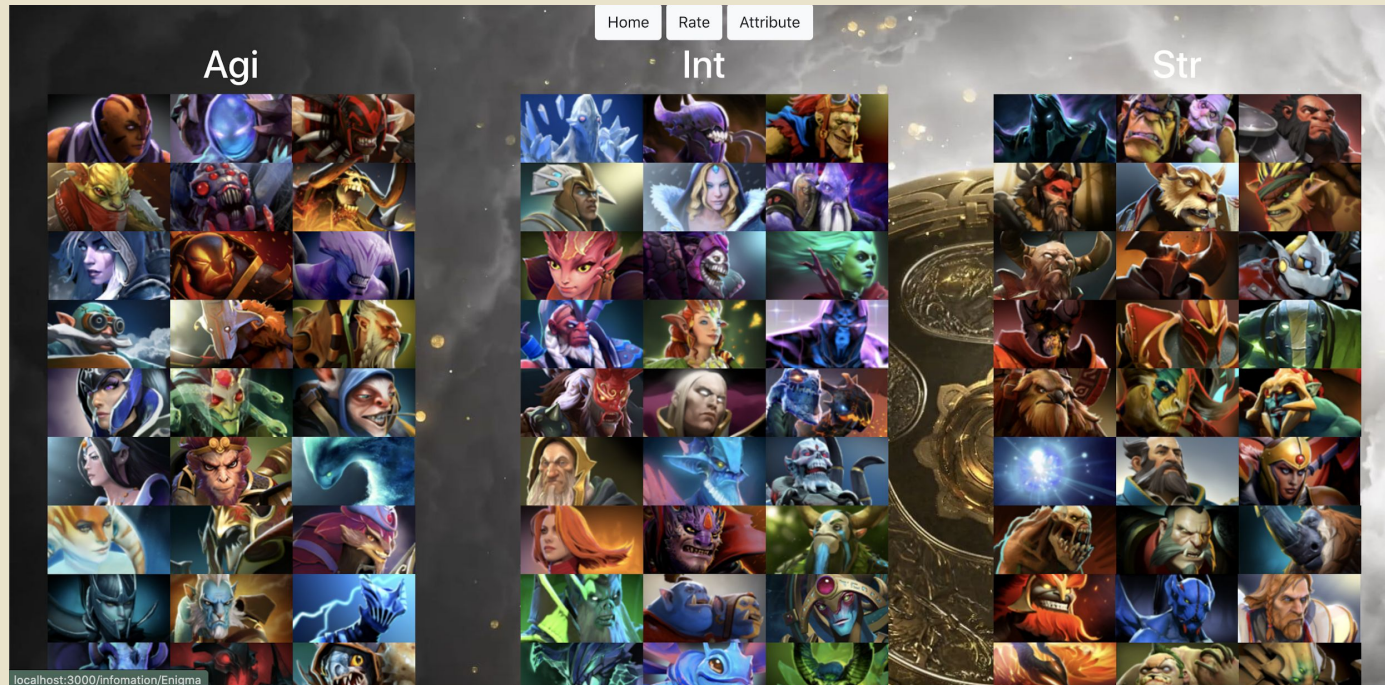




Data Visualization

Data Visualization

Homepage



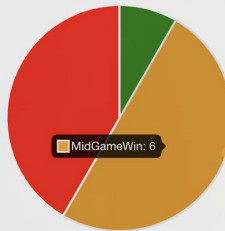
Data Visualization

Match Analyze

	Windranger
Total Analyze Game	100
Total Pick	19
Total Win	12
EarlyGameWin 00:00 - 25:00	1
MidGameWin 25:01 - 40:00	6
LateGameWin 40:01 -	5

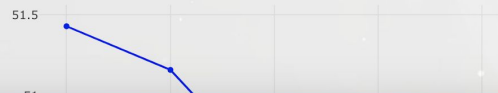
Total Win of Windranger in 100 matches

EarlyGameWin MidGameWin LateGameWin



PickRate Chart

WinRate Chart



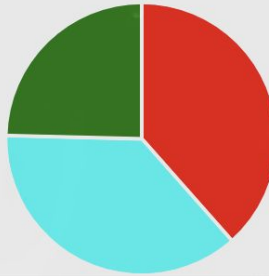
Data Visualization

Calculate Stats By Level

Level: 1 ▾	Arc Warden
strength	25
intelligence	24
agility	16


Status Of Arc Warden

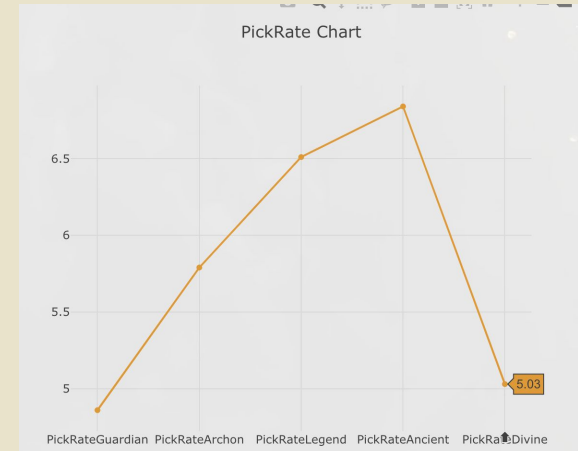
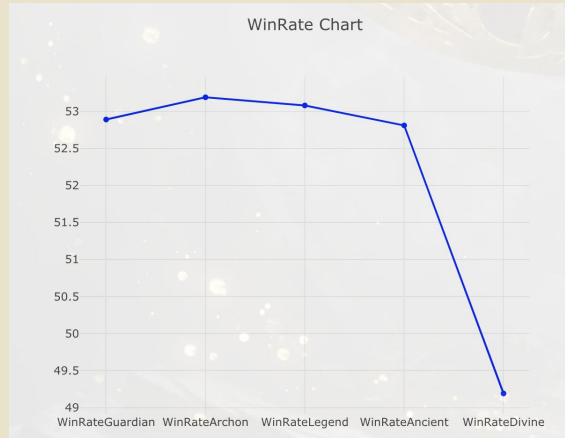
■ strength ■ intelligence ■ agility



Data Visualization

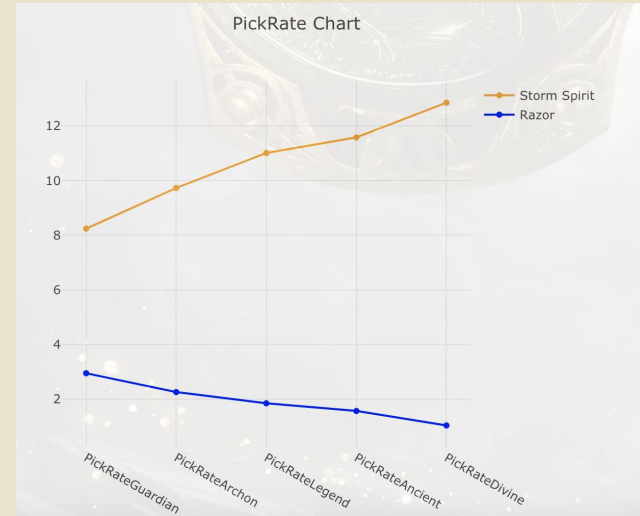
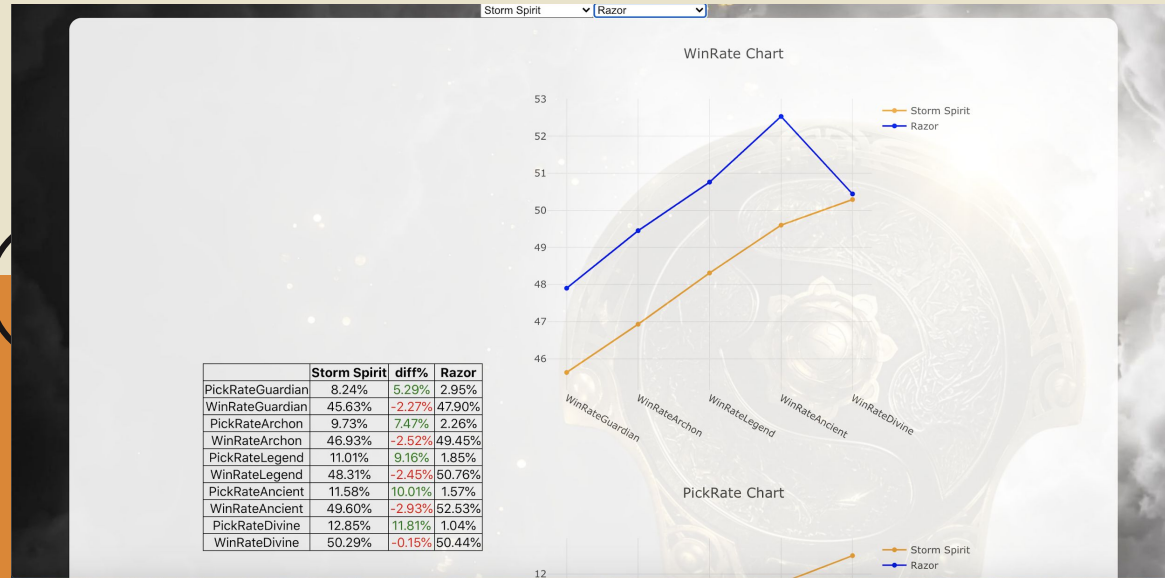
Graph Showing Pick Rate And Win Rate

	Arc Warden
PickRateGuardian	4.86%
WinRateGuardian	52.89%
PickRateArchon	5.79%
WinRateArchon	53.19%
PickRateLegend	6.51%
WinRateLegend	53.08%
PickRateAncient	6.84%
WinRateAncient	52.81%
PickRateDivine	5.03%
WinRateDivine	49.19%



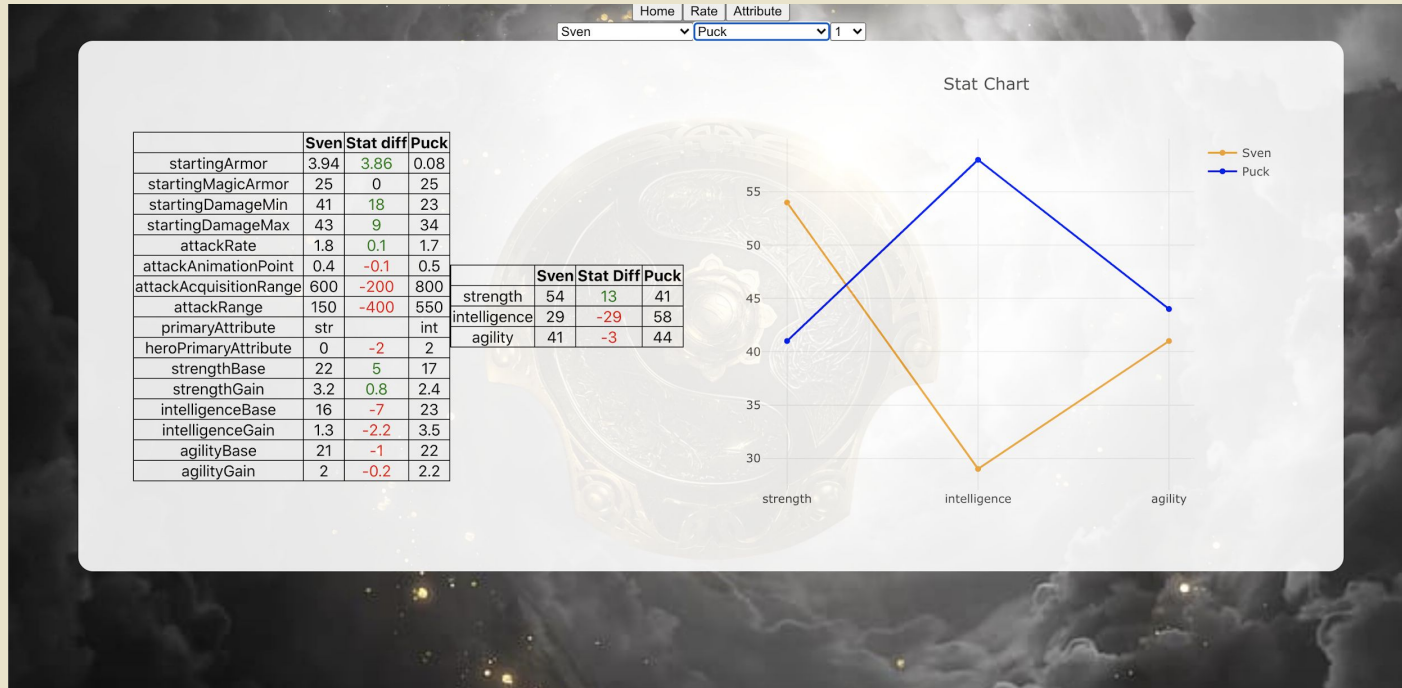
Data Visualization

Compare Two Heroes Pick rate And Win rate And Showing Graph



Data Visualization

Compare Two Heroes And Showing Graph



Group Member

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