Report

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Capstone Project – League of legends European championship

1. Introduction

League of legends is one of the most popular multiplayer online battle arena games. I have played this game for years and I have enjoyed the competitive stage of this game, especially the League of Legends European championship or LEC. If you are familiar with the competitive stage of League of Legends you realize it is an ever-changing game, with a new patch every week and teams going in and going out of the professional stage. Because of this, I wanted to see if we could find something interesting reviewing the data from the LEC match results. To minimize the changes we will select the data from the years 2020 to 2022.

2. Data

The data for this project was obtained from https://www.fandom.com/ through the scrapy framework.This was not an easy job, as the page is not built in semantic html, hence, we needed to give some specifications according to the given year and to the table presented inside the page. Before obtaining the data, we looked at the robots.txt file which did not specify we could not download the data and requested permission to scrap the webpage, which they agreed for educational purposes. Although RIOT games provides this information if requested, the obtained dataset is a good place to start exploring the data and getting to know the available information.

Here is the preview of the data set scraped:

	season	week	patch	team_1_blue_side	team_2_red_side	score
0	LEC 2020 Spring Season	Week 1	10.10	G2	MAD	1 - 0
1	LEC 2020 Spring Season	Week 1	10.10	VIT	SK	0 - 1
2	LEC 2020 Spring Season	Week 1	10.10	MSF	RGE	0 - 1
3	LEC 2020 Spring Season	Week 1	10.10	S04	XL	0 - 1
4	LEC 2020 Spring Season	Week 1	10.10	FNC	OG	0 - 1
...	...	...	...	...	...	...
537	LEC 2022 Summer Season	Week 8	12.11	SK	G2	0 - 1
538	LEC 2022 Summer Season	Week 8	12.11	VIT	RGE	0 - 1
539	LEC 2022 Summer Season	Week 8	12.11	MSF	FNC	0 - 1
540	LEC 2022 Summer Season	Tiebreakers	12.14	XL	VIT	1 - 0
541	LEC 2022 Summer Season	Tiebreakers	12.14	FNC	MSF	0 - 1

542 rows × 6 columns

As it is shown, there are 542 different columns where the data from 2020 to 2022 is contained.

3. Methodology

First, we changed the name “OG” related to “origen” team to “AST” on “team_1_blue_side” and “team_2_red_side” as origen rebranded as astralis in 2020. Then we needed to extract the data from the score field as the way it is formatted does not allow us to perform calculations with it. To perform this we created a new dataframe and extracted the unique values from “team_1_blue_side”, to obtain all the team names and then we create a new field for every team with 1 if they win, -1 if the lose and 0 if they did not played that day, then we group this information by week and season to see the winning trend of every team.

The obtained table was the following:

	season	week	patch	G2win	VITwin	MSFwin	S04win	FNCwin	RGEwin	MADwin	XLwin	ASTwin	SKwin	BDSwin	season_week
0	LEC 2020 Spring Season	Week 1	10.1	2.0	-2.0	-2.0	-2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	LEC 2020 Spring SeasonWeek 1
1	LEC 2020 Spring Season	Week 2	10.2	4.0	-4.0	0.0	-4.0	2.0	2.0	0.0	0.0	2.0	-2.0	0.0	LEC 2020 Spring SeasonWeek 2
2	LEC 2020 Spring Season	Week 3	10.2	6.0	-6.0	2.0	-6.0	2.0	0.0	2.0	0.0	2.0	-2.0	0.0	LEC 2020 Spring SeasonWeek 3
3	LEC 2020 Spring Season	Week 4	10.3	4.0	-8.0	4.0	-6.0	2.0	2.0	2.0	0.0	4.0	-4.0	0.0	LEC 2020 Spring SeasonWeek 4
4	LEC 2020 Spring Season	Week 5	10.3	4.0	-8.0	4.0	-6.0	4.0	2.0	2.0	0.0	4.0	-6.0	0.0	LEC 2020 Spring SeasonWeek 5

Please note this new table contains 50 columns of information.

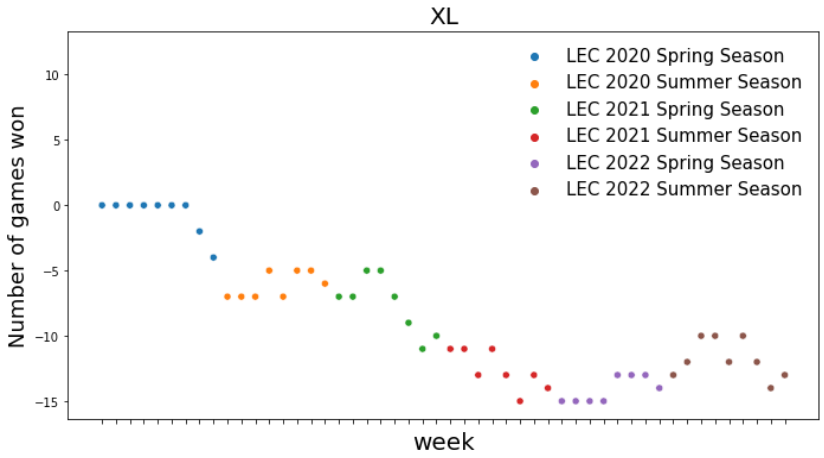
Now, we created graphs for every team, except “BDS” as “BDS” bough SK04 spot on 2022 and does not provide a wide range of information. We will see this further on our winrate table.

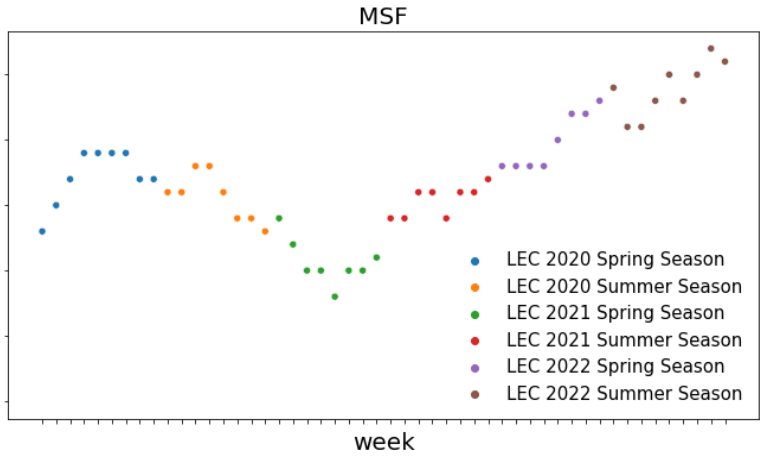
Lastly we created a winrate table, where we compare how many games the team played and how many of these games they won. This is what out table looks like

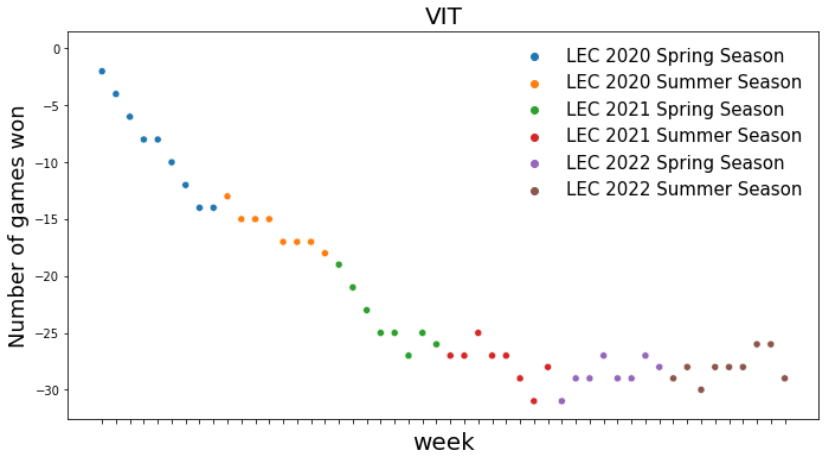
	%winrate
G2winrate%	69.4
RGEwinrate%	68.5
FNCwinrate%	60.2
MADwinrate%	60.2
MSFwinrate%	55.6
XLwinrate%	44.4
ASTwinrate%	38.9
VITwinrate%	37.0
SKwinrate%	37.0
S04winrate%	24.1
BDSwinrate%	6.5

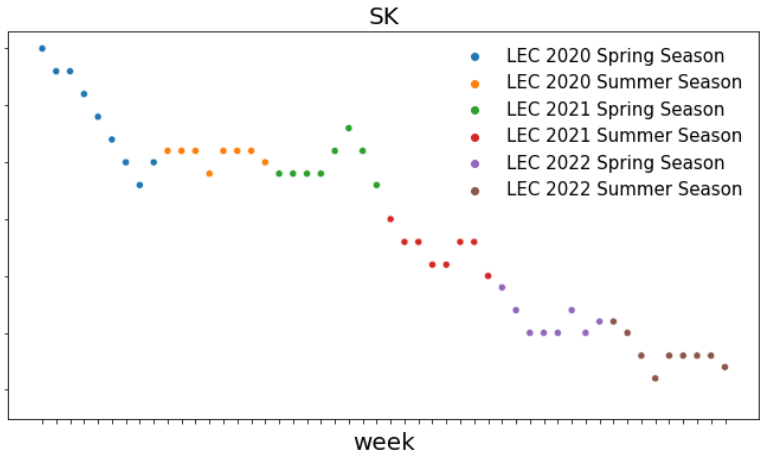
4. Results

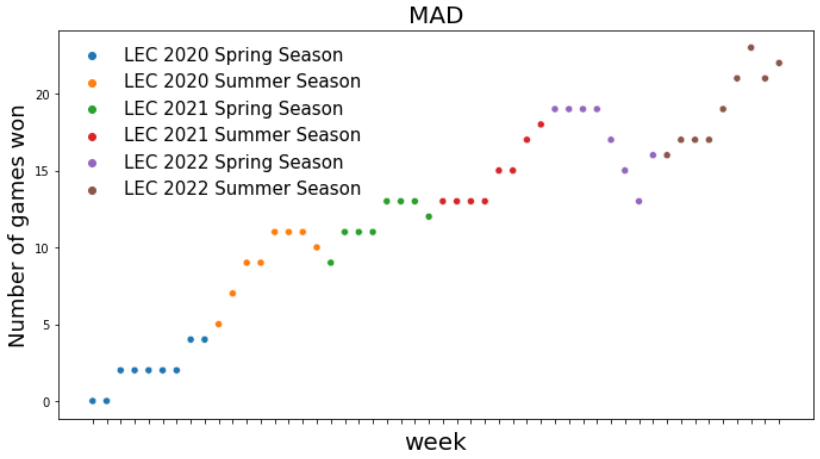
We graphed the results obtained from processing the data using seaborn and matplotlib.pyplot. Here are the trend of every team that has existed from 2020 to 2022.

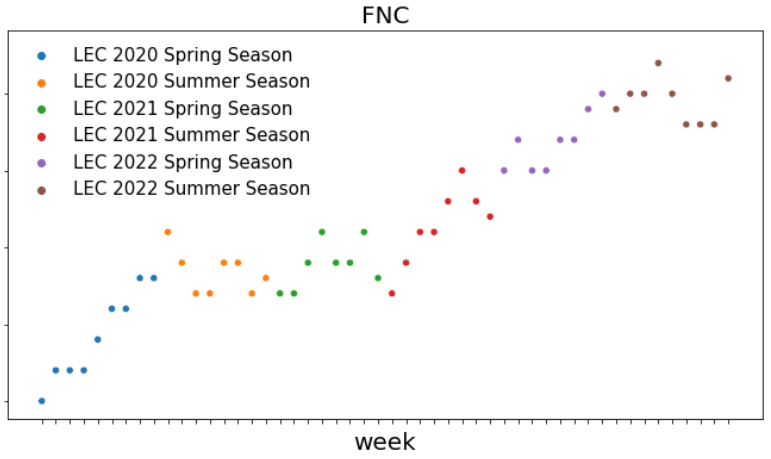


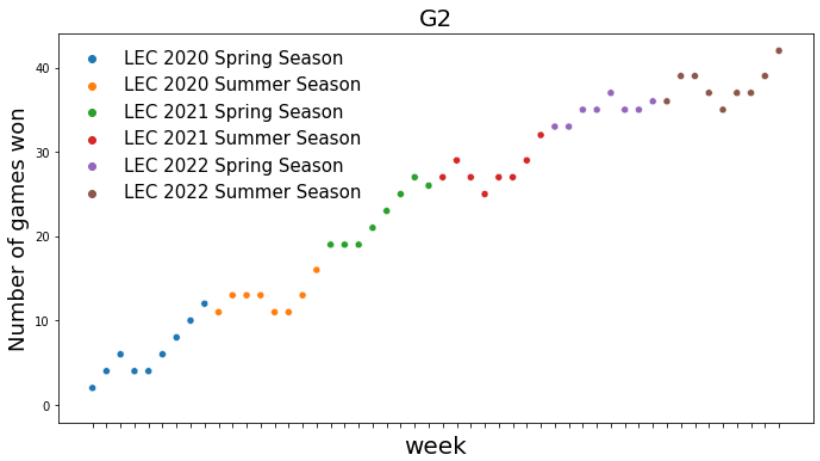


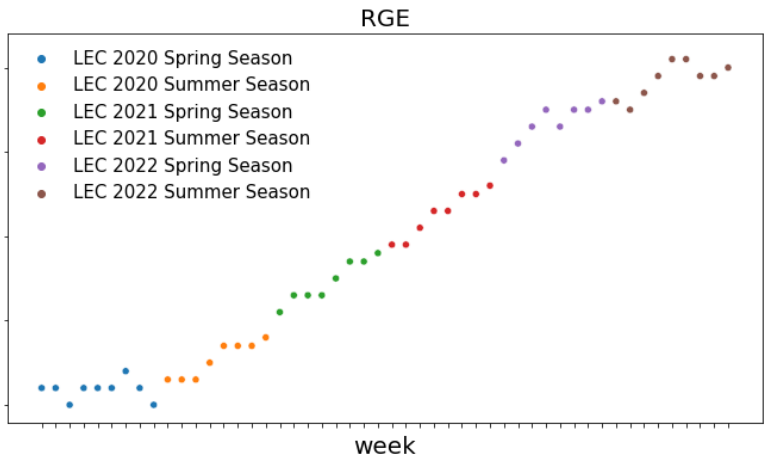





MAD
LEC 2020 Spring Season
LEC 2020 Summer Season
LEC 2021 Spring Season
LEC 2021 Summer Season
LEC 2022 Spring Season
LEC 2022 Summer Season
Number of games won
0
5
10
15
20
week


FNC
LEC 2020 Spring Season
LEC 2020 Summer Season
LEC 2021 Spring Season
LEC 2021 Summer Season
LEC 2022 Spring Season
LEC 2022 Summer Season
week


G2
LEC 2020 Spring Season
LEC 2020 Summer Season
LEC 2021 Spring Season
LEC 2021 Summer Season
LEC 2022 Spring Season
LEC 2022 Summer Season
Number of games won
0
10
20
30
40
week


RGE
LEC 2020 Spring Season
LEC 2020 Summer Season
LEC 2021 Spring Season
LEC 2021 Summer Season
LEC 2022 Spring Season
LEC 2022 Summer Season
week

5. Discussion

The results of the trends make sense. We found out graphically that most teams are not affected by changes inside the season. Regardless of the week, they will tend to follow their losing or winning trend. We see teams do not improve or get worse over time but keep their normal trend unless an outside event occurs. For example astralis changes on 2020 declining to change from Origen create a downward trend they have not recovered from which was a huge outside event, but on the other hand FNC trend was barely affected when Rekkless left in 2021. Another example of this is that VIT and G2 changed most of their teams in 2021. Nonetheless their trends continued. Thus we find that teams rely not only on players but on their whole staff for their performance.

Furthermore, analyzing the data we see that despite every esports news media seeing FNC as the main rival of G2, it was actually Rogue the team that has always followed the same winning trend from G2 and should be considered the main team to rival G2 dynasty in the LEC. Hence, RGE winning the LEC in 2022 may have not been luck but destiny as they consistently as G2 have kept the winning trend every season.

6. Conclusion

The information available from the League of Legends European Championship is a very interesting source to get insights into how the esports scene of the game is developing. I think it is important we see esports as a whole team and not just a transactional stage of players the way football works. Changing the view on this may help with some of the issues we currently have on the professional stage. Like the burnout players suffered or increased the viewership of the game.

Extra: If you notice this information obtained is consistent and follows a pattern of behavior, thus, we may be able to create an AI capable of predicting every matchup. Keep exploring my github for this new amazing project