DATA VISUALIZATION



Politecnico di Milano . Communication Design



中国足球超级联赛

DATA VISUALIZATION OF CHINESE SUPER LEAGUE

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CON TENTS



The theme of this project is the data visualization of the Chinese Super League. This theme is chosen because, on the one hand, football has a huge market in China and many people are interested in the Chinese Super League; on the other hand, the low performance of Chinese football makes people who do not know football biased against Chinese football. It is common to ridicule Chinese football practitioners on the Internet. The purpose of this project is to show the CSL objectively and comprehensively, to enhance understanding and reduce prejudice.

This project is mainly divided into three parts: data visualization of the whole league, data visualization of league teams and Book visualization of league players. The data mainly come from Nielsen company, understand the ball emperor app and Baidu Index. Finally, the project will be displayed in the form of a website. The website is selected because of its accessibility. When facing the same set of data visualization, different users can live different information according to their different background knowledge. The website design is simple and intuitive, choosing the light color data visualization, that is easy to observe is displayed on a black background.

Through this project, I hope to help those who already know Chinese football and love the CSL to re understand the CSL from the perspective of data; second, it can help those who do not understand Chinese football to objectively understand the CSL and eliminate prejudice; It can even help football practitioners find problems in the Chinese Super League and finally help the development of Chinese football.

Key words: Chinese Super League, Chinese football, audience, player, market value.

Il tema di questo progetto è la visualizzazione dati della Super League cinese. Ho scelto questo tema perché, da un lato, il calcio ha un grande mercato in Cina e tante persone sono interessati al CSL; d'altro parte, visto che il risultato di squadra cinese non è bravo, quindi le gente che non interessano il calcio hanno un pregiudizio negativo del calcio cinese. Di solito le persone ridicolizzano gli operatori cinesi nel settore calcio su Internet. Lo scopo di questo progetto è quello di mostrare CSL in modo obiettivo e completo, per migliorare la comprensione e di ridurre i pregiudizi.

Questo progetto è diviso principalmente in tre parti: la visualizzazione dei dati di tutte le partite, la visualizzazione dei dati delle squadre e la visualizzazione del libro dei giocatori cinesi. I dati provengono principalmente dalla compagnia Nielsen, dall'app che si chiama Dongqiudi e dal Baidu. Infine, il progetto sarà visualizzato con una format di sito web. Il sito è selezionato a causa della sua accessibilità. Quando si confronta con lo stesso gruppo di visualizzazione dei dati, diversi utenti possono prendere le informazioni diverse in base alle loro diverse conoscenze su calcio. Il design del sito è semplice ed intuitivo, e ho scelto il colore chiaro per i dati, quindi è facile da leggere con uno sfondo nero.

Attraverso questo progetto, spero di aiutare le persone che già conoscono bene il calcio cinese e amano la CSL a capire la CSL dal punto di vista dei dati; In secondo luogo, può aiutare quelli che non interessano il calcio cinese a comprendere obiettivamente la CSL ed eliminare i pregiudizi negativi; Può anche aiutare gli operatori di calcio a trovare problemi nella Super League cinese e infine sviluppare il calcio cinese.

Parole chiave: Super League cinese, calcio cinese, pubblico, giocatore, valore di mercato.



CHAPTER 01

BACKGROUND INTRODUCTION

What is Chinese Super League 1.1
The history of Chinese Super League 1.2
The meaning of the project 1.3
Project Procedures 1.4



1.1 What is Chinese Super League

The Chinese Football Association Super League commonly known as CSL or CSL, is the highest tier of professional football in China, operating under the auspices of the Chinese Football Association (CFA). Originally contested by 12 teams in its inaugural year, the league has since expanded, with 16 teams and 532 players competing in the 2020 season. A total of 32 teams have competed in the CSL since its inception, with 8 of them winning the title. And foreigner players contributed 16.4% of the players.

Unlike many top European leagues, the CSL starts in February or March and ends in November or December. In each season, each club plays each of the other clubs twice, once at home and another away. With 16 clubs currently in the Super League, teams play 30 games each, for 240 games in the season.

The League is now running under the authorization of the Chinese Football Association, The CSL Company, which is currently the commercial branch of the League, is a corporation in which the CFA and all of the member clubs act as shareholders. It is planned that the CFA will ultimately transfer their shares of The CSL Company to the clubs and professional union, which consist of CSL clubs will be established as the League's management entity.

1.2 The history of the Chinese Super League

The Chinese Super League was created by the rebranding of the former top division CFA 1 A League in 2004 (not to be confused with Chinese Football Association League one, which is the current second-tier league).

2006, CFA□and all the clubs participating in the League jointly funded and established the China Super League Co., Ltd.2008, 16 teams participated in the Super League for the first time.2012, 16 teams in the Super League invested the more than 3 billion yuan in a single season, including stars such as Drogba and Anelka. Since the gambling storm, Chinese society has paid more attention to the CSL and even the world football circles; The box office profit in 2012 was also the highest since the establishment of CSL in 2004.



2014, Ping An insurance (Group) Co., Ltd. of China won the exclusive title right of CSL for the four years.2015, CSL ranked second in the world in terms of the money spent on transfer, after the Premier League.2016, the Olympic power sports purchased the copyright of the whole media of the CSL at the price of RMB 8billion. 2017, Ping An insurance (Group) Co., Ltd. announced that it will continue to be named as the CSL for five years, which will be named by China Ping An League by 2022.2019, Wu Lei, the best striker of CSL transferred to La Liga. Additionly, the China Super League has increased its overseas broadcasting platform to more than 20, covering 96 countries and regions. Guangzhou Evergrande won the China Super League for the eighth time and kept up with the eight top league title record held by Dalian

In 2023, the League of China Super League will expand to 18 teams, implementing the "men's football with women's football" model of the CSL club, and took the establishment of professional women's team as one of the access conditions of the club, and promoted the development of women's football.





1.3 The meaning of the project

Through this project, people can have a clear understanding of CSL. It is of great significance to show Chinese football to people in domestic and abroad, and help them know the development of football in China, a place that seems not to welcome football so much. In the news about Chinese football reported by Western media that I have read before, it is more about the news is not objective enough, or not even related to football itself, which leads to people's impression that China is like a soccer desert. Through this project, people can see that each game of CSL has an average of 30 thousand spectators and soccer is popular in China. The focus of CSL will return to soccer itself to show a more objective and comprehensive CSL.

For the football industry's followers and practitioners can conclude some basic rules of Football League through the data visualization of this project: the club needs to make rational recruitment for the team (the data visualization of this project shows that Guangzhou Evergrande, the most successful Chinese club in the past decade, is not the one that spends the most money), or a club with a long history will leave valuable assets to the local city, such as the football market brought by a good fan base and solid youth training (the average attendance rate of Dalian is obviously not proportional to its current performance, and the players from Dalian account for one fifth of all the domestic players of CSL). These rules will be helpful to soccer practitioners.

Like all soccer leagues in the world, CSL has its own problems. This project highlights some problems through data visualization. For example, the policy of the football association has a great influence on the league. In the data visualization of players in Chapter 3.3, we can see that the number of Korean and Australian players in CSL has decreased sharply after 2018, which is related to the policy changes of the Chinese Football Association for foreign players in Asia.

To sum up, through this project, on the one hand, can return to football itself and show the readers a more comprehensive and objective CSL. However, data visualization in this project also reflects some disadvantages and irrationalities of CSL, hoping to make some contributions to the development of CSL and even Chinese football.

1.4 Project Procedures

How to treat Chinese football rationally as a fan? What is the current How to treat Chinese football rationally as a fan? What is the current situation of investment and players of Chinese professional football? To help people more clearly understand that the CSL is the core of this project.

- 1: Survey the audience data of CSL, such as the popularity of related topics, portraits of CSL fans. the data mainly come from the report of Nielsen company, Baidu Index and the official website of CSL.
- 2: Collect the relevant platform and data of CSL (mainly from the transfer market. Com, All Football app.) and think about the visual model suitable for these data.
- 3: Design visual charts based on data and problems.
- 4: Design an interactive network platform to show these charts clearly, so that the public can more easily access to relevant information and understand the CSL.



CHAPTER 02

Why it matters

Research Introduction 2.1

How is the Chinese society support on football? 2.1.1 What is the Chinese ambition on football? 2.1.2

Queries 2.2

Related research analysis 2.3

Data visualization video on CSL market value. 2.3.1 "China and football "report released by Nielsen company. 2.3.2



2.1 Research Introduction

How is the Chinese society support on football?

In China, the vigorous development of football benefits from China's extensive economic and sports industry strategy. President Xi Jinping's personal interest and his desire inspired to the campaign to host the FIFA World Cup one day. The investment of Chinese enterprises in the domestic league has changed it from obscurity to competition attracting real global star players. In the past three years, Chinese clubs have made remarkable expenditures on international players, and the influx of foreign talents has helped to promote the global popularity of CSL and make it more attractive to international broadcasters this season, for the first time, sky sports have promised to broadcast CSL's matches live, and the evening matches will be broadcast at lunchtime in the UK on weekends.

According to Nielsen's data, although the NBA ranks first among the five most popular sports events in China, football occupies three seats in the remaining four, and the rest is the world table tennis championship. Statistics show that 35% of the urban population in China are interested in football, and 6% of them participate in football. Although this proportion is far lower than the world average, considering the huge population base of China, the total number of people is also ranked first in the world.

In October 2014, the Chinese government, through the General Administration of sports, put forward a plan to build a sports industry of 5 trillion yuan (813 billion US dollars) by 2025. This strategy involves all aspects from promoting fitness to encouraging foreign investment in sports. Through the opening of the previous complex administrative approval process. It is against this background that many well-known Chinese enterprises, including Wanda Group, Alibaba group and so on have invested. Kaisa group has set up a multi-billion-dollar fund to help build new sports facilities in China.

What is the Chinese ambitions on football?

According to the points of the Asian major league teams released by the Asian Football Association, the Super League is ranked first in Asia although its market value is only third in Asia. It can be seen that China Super is competitive in Asia from the level of professional clubs. But China's national team ranks only 75 in the world and ninth in Asia. It is unsatisfactory for Chinese fans, so the ultimate goal of Chinese fans and Football League is to improve the national team level.

AFC CLUB COMPETITIONS RANKING

Rank	Team	Total Points	Fifa Points	Fifa Points (0%)	Club Points	Club Points (100%)	2019	2018	2017	2016
1	CHINA PR	100	0	0.000	72.867	100.000	17.350	16.200	24.567	14.75
2	QATAR	97.644	0	0.000	71.150	97.644	15.900	19.850	13.400	22.00
3	JAPAN	93.321	0	0.000	68.000	93.321	21.800	13.850	21.850	10.50
4	SAUDI ARABIA	88.449	0	0.000	64.450	88.449	26.350	10.000	18.600	9.500
5	KOREA REPUBLIC	85.979	0	0.000	62.650	85.979	13.600	18.350	9.950	20.75
6	ISLAMIC REPUBLIC OF IRAN	81.724	0	0.000	59.550	81.724	11.500	18.850	16.200	13.00
7	UNITED ARAB EMIRATES	61.87	0	0.000	45.083	61.870	7.633	8.100	11.350	18.000
8	THAILAND	51.189	0	0.000	37.300	51.189	5.050	16.200	15.050	1.000
9	IRAQ	48.992	0	0.000	35.699	48.992	8.300	8.633	8.933	9.833
10	UZBEKISTAN	45.562	0	0.000	33.200	45.562	9.000	9.400	5.050	9.750
11	AUSTRALIA	40.896	0	0.000	29.800	40.896	2.600	7.300	5.900	14.000
12	JORDAN	33.852	0	0.000	24.667	33.852	7.967	7.633	4.900	4.167
13	PHILIPPINES	32.13	0	0.000	23.412	32.130	4.782	5.843	8.120	4.667
		rate in	10-2		ners reserve	aureur -	0.000			-

To reach this goal, football is now part of China's school system, with major clubs and their owners investing heavily in grassroots projects and facilities - Guangzhou Evergrande, one of China's most mature professional football clubs (in 2015, Guangzhou Evergrande spent twice as much on international transfers as any other club in the CSL, according to FIFA, the company has worked with Real Madrid to develop a training academy, which have 50 football fields.

In April 2016, CFA announced its plan to make China a "world football superpower" by 2050,

With the goal of improving the level of participation, we will rapidly increase the number of training centers and stadiums across China, especially by 2030, with one football field for every 10000 people. At the professional level, performance targets have been set for the men's and women's national teams.





Why it matters . DATA VISUALIZATION OF CHINESE SUPER LEAGUE

2.2 Queries

1.41Billion PopulationMillion Football fans

What is the age and gender distribution of Chinese football fans?



Female fans of Shandong Luneng http://www.ppsports.com/article/photos/606813.html



According to Nielsen, of China's 1.41 billion people, 187 million are interested in football. Among them, 90% were male. In terms of age structure, most Chinese fans are middle-aged, accounting for 42% of fans aged 30—39, which is quite close to the average age of Chinese. Followed by fans aged 20—29 and 40—49, accounting for 24% and 19%, respectively, while young and old fans accounted for only 5% and 10%, respectively.





As mentioned before, the naming right of CSL belongs to the Ping An Insurance Co., Ltd., so insurance companies account for 46% of the sponsorship fee of CSL. The rest are clothing (sports equipment) sponsorship, automobile, beverage and real estate sponsorship. According to the world football report, advertisements on TV and LED screens are mainly cars, beverages, alcohol, sports products and pharmaceuticals.

What is the sponsor and advertisemnt of CSL?

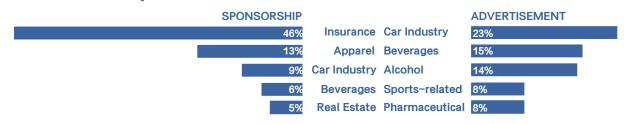
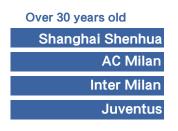


Figure below clearly shows that both the La Liga giants and two Manchester clubs tend to be younger in their interests. People over the age of 30 — a group that may have more disposable income - are more likely to be interested in Serie A clubs AC Milan, Inter Milan and Juve, the legacy of the Seria A, the first international football league to be broadcast to China in the 1980s. The super Coppa Italiana, the opening match between the annual League and Cup titles, has been held four times in China since 2009.

What is the most popular football club in China?







Guangzhou Evergrande
FC Barcelona
Real Madrid
Manchester City

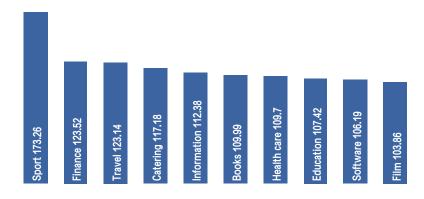
Under 30 years old



Real Madrid's business activities in China https://view.inews.qq.com/w2/20200403A03VQL00?tbkt=E&strategy=&openid=%7B OPENID%7D&uid=

From this picture, we can see that CSL's target group index is the highest among people who like fitness and sports, reaching 173.26. The other top 10 were finance (123.52), travel (123.14), cataling (117.18), information (112.38), books (109.99), health (109.7), education (107.42), software (106.19) and movies (103.86).

What is the target group index of CSL?









2.3Related research analysis

Data visulization video on CSL market value.



PP Sports Carnival released a data visualization video in July 2020, which clearly shows the change of CSL team's value in the past decade with the motion graphic of the column chart.

"China and football "report released by Nielsen company.



The report "China and football" released by Nielsen data analysis company mainly shows the portraits of Chinese who are interested in football, the investment of Chinese enterprises in China and European football market, and the application of Chinese sports media. Some data, such as the portrait of Chinese football audience, are helpful to this project, but the report does not discuss the specific situation of CSL teams and players in detail.

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CHINESE SUPER LEAGUE - WHO OWNS WHAT?

The property sector is particularly well represented amongst the 16 owners of clubs competing in this season's Chinese Super League. The investors have seen the potential in clubs of terms of acting as catalysts for wider develo of cities and areas surrounding stadiums (the model of building multi-purpose new stadiums, surrounded by retail, ents is well-established across Europe - AS Roma's new stadium project is a prime example leisure and residential develo



- Jilin Yatai Group (real estate, coal mining, securities)
- G CHONGQING LIFAN
 Lifan Group
 (motorcycles, cars, spare parts)
- D GUANGZHOU EVERGRANDE
- Evergrande Real Estate Group (60%); Alibaba (40%)
- Guangzhou R&F (property developers)

 SHANDONG LUNENG TAISHAN F HANGZHOU GREENTOWN

Source: Nielsen Sports market intelligence

n



JIANGSU SUNING Suning Appliance Group (retailers, online retail)

Liaoning WHOWIN
Lisoning Sport Technology College/
Huludao Hongyun

Luneng Group (electric energy provider)

- G HEBEI CFFC
 China Fortune L SHANGHAI GREENLAND SHENHUA Land Development Greenland Group (developer) HENAN JIANYE

 Jianye Residential Group (real estate)
 - - N SHIJIAZHUANG EVER BRIGHT Hebel Ever Bright Real Estate Development Co.
 - TIANJIN TEDA
 Tianjin TEDA Group
 (state-owned enterp
 - P YANBIAN FUNDE Yanbian Sports Bureau/Fur Holdings Group (insurance

Source: FIFA TMS

BIGGEST TRANSFER FEES PAID BY CHINESE SUPER LEAGUE CLUBS

The spending by Chinese dubs on international players over the past three years has been eye-catching, with the influx of foreign talent helping to drive global awareness of the Chinese Super League and make it more attractive to international broadcasters – this season, for the first time, Sky Sports has committed to live broadcasts of CSL matches, with evening games airing in a lunchtime slot on weekends in the UK.

According to FIFA's Transfer Matching System, spending by Chinese According to Firsh I ransies matching systems, spending by Linniese clubs on international transfers rose by 60,5% year on year between 2014 and 2015, CSL clubs made headlines again during the 2016 transfer window, with Brazilian Hulk's move from Russian club Zenit St. Petersburg to Shanghai SIPG for a fee reported to be \$61 million breaking the country's transfer record - \$51 million, paid by Juangsu Suning for Shakhtar Donestsk player Alex Teixeira a yay rearlier. CSL clubs have shown their ability to not only spend heavily on transfer fees but also a willingness to pay players substantial salaries which has only seved to increase the chances of top talent moving to China.

2014 TO 2015 CHINESE SUPER LEAGUE SPENDING BY ALL CHINESE CLUBS ON PLAYER TRANSFERS BIGGEST PLAYER TRANSFERS TOTAL SPENDING, MILLION \$ ALEX TEIXEIRA JACKSON MARTINEZ O SPENDING ON PLAYERS FROM EUROPE, MILLION \$ SIPG JS Suning 2014 2015 GZ Evergrande

CHINESE CLUB

OWNERSHIP

The past two years has seen a flurry of major investments by Chinese firms and individuals in European football clubs. Storied names such as AC Milian and Internazionale are now under Chinese control, while stakes in other major teams, notably Alfético Madrid and Manchester City, have been acquired by Chinese investors. Clubs at the top-level in England, France, Italy and Spain are now under Chinese control— Germany's regulations on club ownership have so far prevented any Chinese investment in Bundesliga teams. The map shows a selection of major investments from China across Europe over the past two years.

CHINESE BRANDS AS SPONSORS
Although each investment differs from the others, depending on the company, individuals or club involved, the Chinese government's company, individuals or dub involved, the Chinese government's forbotall strategy appears to have been catalysts. More investments are likely. Although European clubs received over \$35 million annually from Chinese sponsors during the 2015/16 season - the largest spend by a single brand coming from smartphore manufacturer Huwela cross a number of clubs — many Chinese companies and investors appear to have prioritised ownership of the assets themselves rather than aligning with a club through sponsorship

CHINESE SPONSORSHIP OF EUROPEAN FOOTBALL (BY SECTOR) SPORTSWEAR/ EQUIPMENT PHONES HARDWARE OTHER





Source: Nielsen Sports market intelligence



CHAPTER 03

Visualization

Visualization of the League 3.1

- Relevant topic with CSL on internet 3.1.1
- The hottest topic of CSL in the past five years 3.1.2
 - The top 10 expensive transfer of CSL 3.1.3

Visualization on the Teams 3.2

- The market value changes of CSL over the past 10 year 3.2.1
 - Team achievement of CSL over the past 10 year 3.2.2
- The number of audience in each round of game in 2019 season 3.2.3

Visualization on the Players 3.3

- Origin of domestic CSL players 3.3.1
- Top 10 CSL foreign players origin countries 3.3.2
 - Performance of CSL foreign players 3.3.3
 - The goal efficiency of CSL players 3.3.4
- The technology characteristic of CSL players 3.3.5

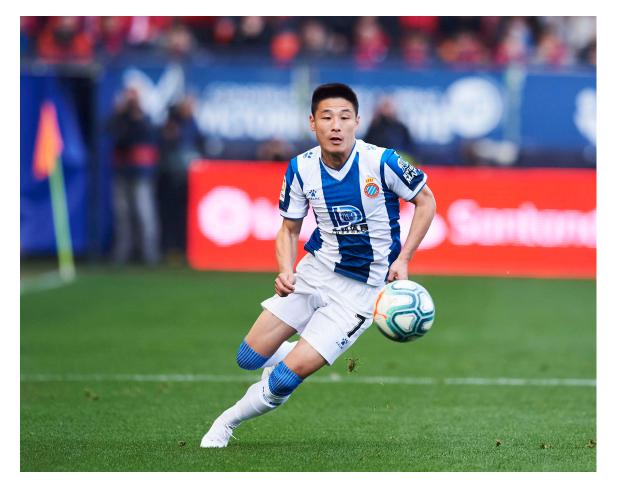
Visualization of the League

Relevant topic with CSL on internet

The hottest topic of CSL in the past five years

The most expensive transfer in the history of CSL

Relevant topic with CSL on internet



Wu Lei is playing in La Liga https://www.sohu.com/a/402245436_100203617?_trans_=000014_ bdss_dkgyxqsp3p:cp=

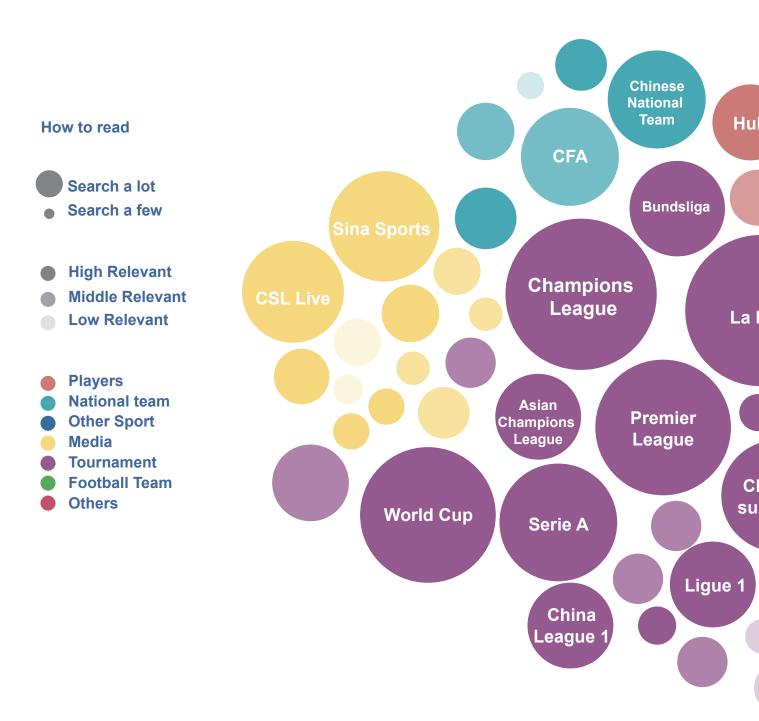
The data of this chart come from Baidu Index. In this visual chart, different colors are used to distinguish the categories of different topics. The size of the circle represents the heat of the topic. The larger the circle is, the hotter the topic is. The lower the transparency, that is to say, the lighter the color, the lower the correlation with CSL. Finally, some hot topics are selected and marked on the circle to make it more visual.

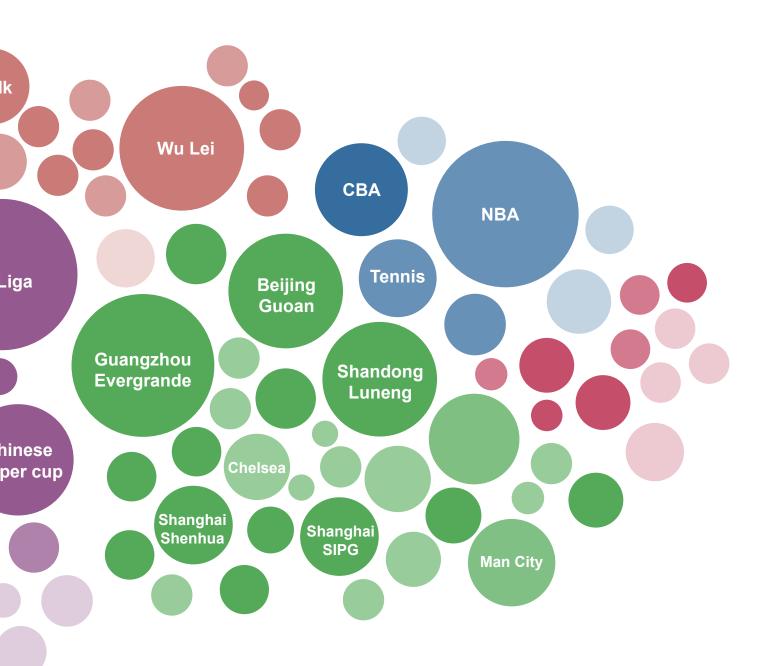
Because this chart shows the total heat of topics in the past six months, what we see on this chart are topics that have been hotly discussed. For example, Wu Lei, who transferred to La Liga after winning the best player of CSL in 2018, is the only Chinese who plays in the European mainstream League. Almost every day in half a year, and he will appear in the hot topic. It can be seen that the Chinese are very concerned about this player. Additionally, the Champions League, Premier League and La Liga are the most concerned leagues in foreign leagues.

Additionally, other topics such as NBA, China national team, World Cup qualifier, CSL live broadcast are also hot topics on the Internet.

Relevant topic with CSL on internet

The data of this chart comes from Baidu index.









The hottest topic of CSL in the past five years

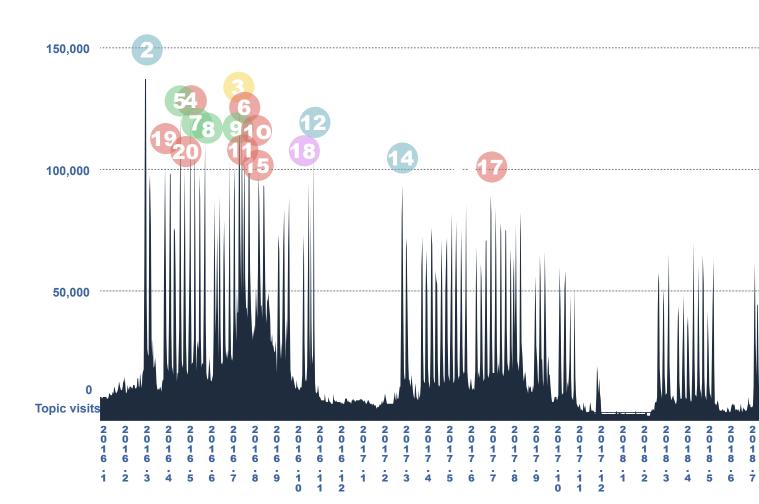
The data source in this figure is Baidu Index. In this figure, the search volume on the Internet with the Chinese Super League as the keyword in recent five years is counted. The number of visits varies periodically with the season. The number of visits on weekends from March to November every year is relatively large because as mentioned earlier, the CSL starts in March and ends in November of the natural year. During this period, the weekend is usually the match day, so the relative traffic is large.

The figure lists the top 20 days of traffic and what happened to the Chinese Super League on that day. After distinguishing the types of events according to color, it is found that the time that can cause the most traffic growth is the competition between strong teams. In addition, the League opener and the generation of champions will also stimulate the growth of traffic. It is worth noting that in July 2020, the COVID-19 Super League semifinals triggered the highest single day visits in history. But on the whole, the visit popularity of CSL is on the decline, and 18 of the top 20 visit days were in 2016.



The hottest topic of CSL in the past five

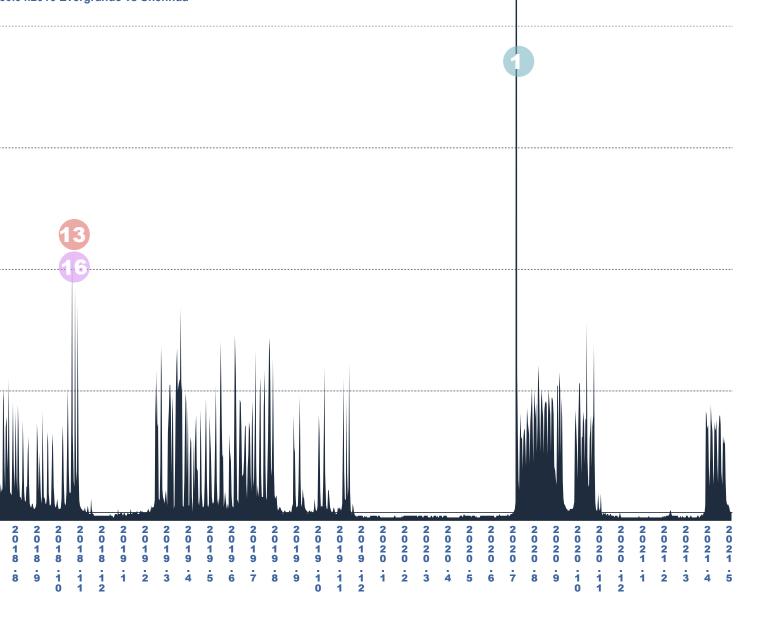




e years

30.10.2016 CSL season ends
03.1.2018 SIPG vs Evergrande
05.03.2017 CSL unveils
21.08.2016 Suning vs Guoan
07.11.2018 SIPG won the championship
08.07.2017 Guoan vs Evergrande
29.05.2016 Guoan vs Luneng
2.04.2016 Guoan vs SIPG
30.04.2016 Evergrande vs Shenhua

24.07.2016 Chongqing vs Shijiazhuang







The most expensive transfer in the history of CSL

The data of this chart comes from Transfer Market.com



1:Oscar
2017 From Chelsea to SIPG

\$66.00m



2:Hulk
2017 From Zenit St.Petersberg to SIPG

\$61.38m



3:Alex Teixeira
2016 From Shakhtar Donetsk to Jiangsu Suning

\$55.00m



4:Paulinho2019 From Barcelona to Guangzhou Evergrand

\$46.20m



5:Jackson Martinez
2015 From Atletico Madrid to Gunagzhou Evergrand



6:Cedric Bakambu 2018 From Villar Real to Beijing Guoan

\$44.00m



7:Yannick Carrasco
2017 From Atletico Madrid to Dalian Yifang
\$33.00m



8:Anthony Modeste
2017 From Koln to Tianjin Quanjian
\$31.90m



9:Ramires
2015 From Chelsea to Jiangsu Suning
\$30.80m



10:Marko Arnautovic
2020 From Westham United to SIPG
\$27.50m

The top 10 expensive transer of CSL

The data source is Transfer Market.com. This chart has been showing the ten most expensive transfers since the establishment of CSL. The bar chart shows their transfer fees. The above questions show some details of their transfer, such as the original team and transfer time. The color of the outer circle is the same as the main color of their current team.

Tevez was losed his magic in Shanghai https://tiyu.baidu.com/news/detail/91af90de226d74e3c95f969aa29961fb





Witsel and Modeste https://tiyu.baidu.com/news/detail/9ff676c841 04a2dc78e77045dfe32c42

There are many unsuccessful cases in the transfer of CSL teams. For example, Drogba, a legendary Chelsea player, was attracted to join CSL with a huge salary, but the team could not afford the salary in his contract so he left the Chinese Super League angrily after a season. And Tevez, after joining Shanghai Shenhua, can't show the performance and professional attitude that match his salary. In the end, he can only go back to Argentina. Because of negative news, for a long time, CSL has been regarded as the last stop before the big players retire, similar to MLS in the United States.

But recently, many players such as Alex Witsel, who are in the period of career rise, in his 28 year old joined Tianjin Quan Jian from Zenit, St. Petersburg in 2017, after showing his competitive level in China and transferred to Dortmund in 2018, and is now the main force of Belgium National team.





Visualization on the Teams

The market value changes of CSL over past 10 years

Teams achievement of CSL over past 10 years

The number of audience in each round of game in 2019 season



A Chongqing supporter https://www.sohu.com/picture/322573253

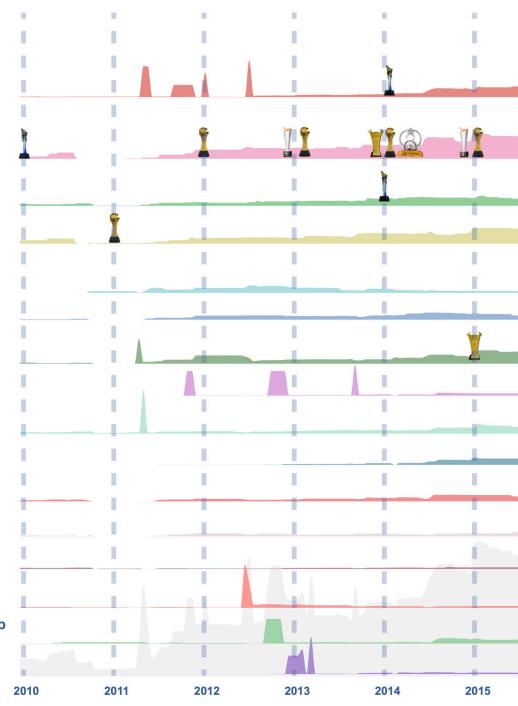
The market value changes of CSL over past 10 years

The data comes from Transfer Market.com. The theme of this chart is the market value changes of CSL teams in the past ten years. As 32 teams have participated in the CSL in the past 10 years, many teams have been disbanded long ago, the 16 teams in this table only show the market value changes of 16 teams in 2021 season in the past 10 years. The grey market value in the bottom line represents the market value change of the whole CSL.

In order to show the relationship between the market value change and the team performance, this figure also lists three important trophies in addition to the CSL Championship, namely the Asian championship, the China Football Association Cup and the Chinese league one championship which is the second tier football league (Because these 16 teams have not been in the top tier league for 10 years) .It can be seen that Guangzhou Evergrande and Shanghai SIPG are the two teams with the most investment, but the champion return rate of Guangzhou Evergrande is much higher than that of Shanghai SIPG.

The market value changes of CSL over past 10 years

The data of the chart comes from Transfer Market.com.





Champion of Asian Champions League



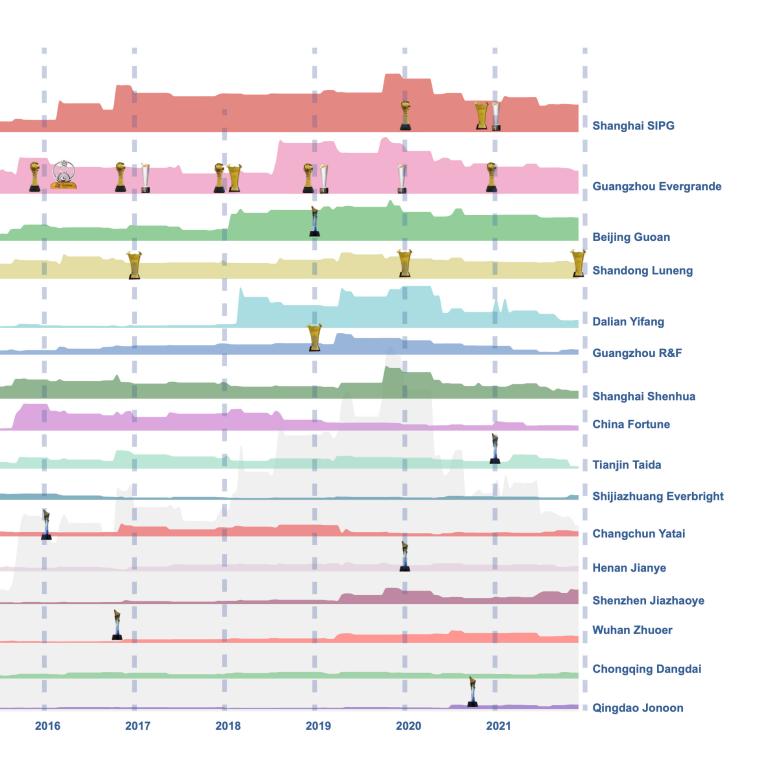
Champion of Chinese Super League



Champion of Chinese Football Association Cup



Champion of Chinese Super Cup



On the whole, the CSL teams in 2016, 2017 and 2018 have relatively large investment, and the market value of the whole league has also increased rapidly. But after 2020, the market value of almost all teams has declined, which has also led to the decline of the market value of the whole league from the first in Asia to the third in Asia. This may be related to the economic downturn caused by COVID-19.

Teams achievement of CSL over past 10 years

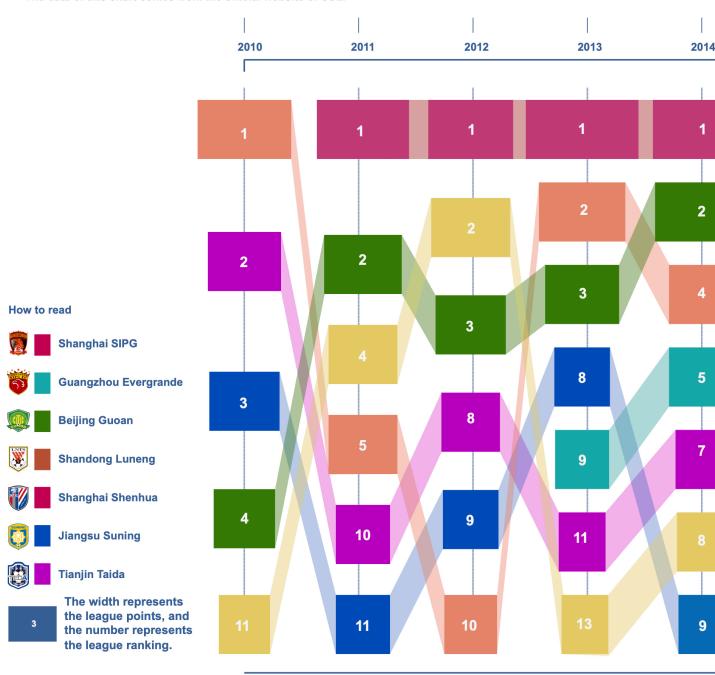
The data in this figure comes from the official website of CSL.As mentioned before, few teams in China can stay in the top league for over 10 years, so only seven teams that stayed in the top league for the longest time have been found for visualization. The width of the square in the figure represents the team's points of that season, and the number on the square represents the team's ranking of that season.

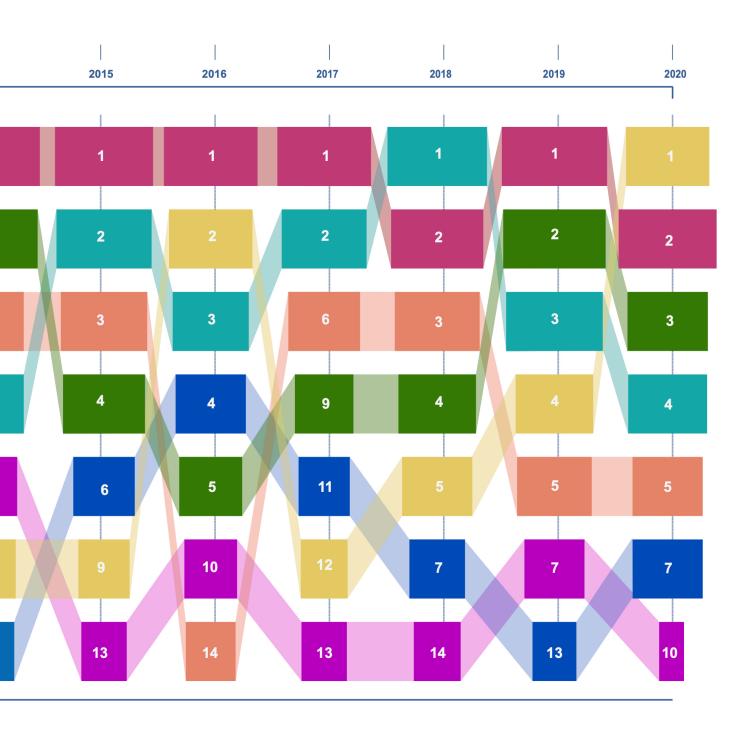
It is worth mentioning that there is an exception In the 2020 season, because of COVID-19's influence CSL abandoned the League system but use the tournament system. As you can see, Jiangsu Suning, the No.One ranked team scored less points than Guangzhou Evergrande, but won the League Championship in the end.



Teams achievement of CSL over past ten years

The data of this chart comes from the official website of CSL.





When Guangzhou Evergrande was still in the Chinese league one in 2010, it once chanted the slogan of "winning the Chinese Super League in three years and winning the Asian Champions League in five years □" which surprised many people. Evergrande immediately opened the money football mode and successfully entered the top league as the first place in the Chinese League one that season. Guangzhou Evergrande completed seven consecutive CSL titles in the 2011-2017 season and won the Asian championship twice in three years from 2013 to 2015 make then became the representative of Chinese football clubs for a time.



Guangzhou Evergrande won the Asian Champions League http://german.xinhuanet.com/2015-11/22/c_134841119_3.htm

And many teams also started the money football model to imitate Evergrande, such as Jiangsu Suning and Shanghai SIPG.But from this picture, we can see that the performance of other teams is far less stable than that of Guangzhou Evergrande. It is worth mentioning that after Jiangsu club got the sponsorship of Suning company, which is also the sponsor of Inter Milan, the market value of Jiangsu Suning was greatly improved, and many Inter Milan players, such as Adele joined Jiangsu Suning, and they won the CSL for the first time in the 2020 season, but due to the withdrawal of the investment of Suning company, Suning club immediately announced its dissolution. Jiangsu created a ridiculous history: the defending champion disbanded in the second year. What's more ridiculous is that Suning did not withdraw all their investment in football. For example, Inter Milan broke the monopoly of Juventus with the support of Suning and won the Serie A title in 2021, which proves once again that the CSL team relies too much on the support of the sponsors. To sum up: if a club wants to be successful, it is impossible not to spend money, but it is not enough to spend money only.

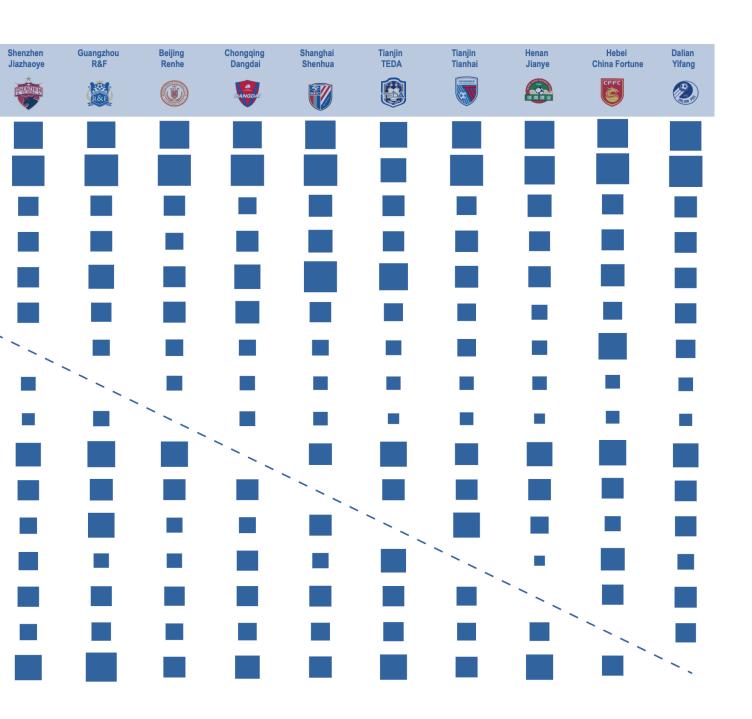






The number of audience in each round of game in 2019 season.

The data of the chart comes from All Football APP Shanghai SIPG Wuhan **Shandong AWAY** Suning Guoan **Evergrande** Lunena Zhuoer HOME Beijing Guoan **Guangzhou Evergrande Shandong Luneng** Shanghai SIPG Jiangsu Suning Wuhan zhuoer Shenzhen Jiazhaoye Guangzhou R&F Beijing Renhe **Chongqing Dangdai** Shanghai Shenhua Legend Tianjin TEDA The audience means that they bought tickets Tianjin Tianhai to watch the match Henan Jianye **Audience Number** Hebei China Fortune 60000 **Dalian Yifang** 1000



The number of audience in each round of game in 2019 season

The data source of this figure is All Football app. The reason for choosing the 2019 season is that COVID-19 has no audience in the 2020 season. In the 2021 season only a few fans are allowed to enter and there are no home and away games, so the 2019 season is the most suitable season to reflect the relationship between the team and the audience.

In this picture, the vertical team is the home team, and the horizontal team is the away team. The size of the square represents the number of audiences on the spot. Horizontally, strong teams like Beijing Guoan and Guangzhou Evergrande will attract more home team fans to watch their home games.

Even the unpopular teams like Beijing Renhe will attract more fans when they meet Beijing Guoan at home. The audience is far higher than the average in the past.

Another phenomenon is that the number of audiences the team attracts has no obvious relationship with the population of the city. For example, the audiences of Shenzhen with a population of 17 million is less than that of Dalian with a population of 7 million. There are 5584386 spectators in 240 matches in 30 rounds of this season, with an average of 23464 spectators. Compared with the average attendance of 22594 in the Super League in 2018, this figure has increased by nearly 800, with an increase rate of 3.8%.

There are more than 40000 attendants in 30 games this season, including more than 50000 attendants in four games. The 23rd round of the top competition between Beijing Guoan and Guangzhou Evergrande attracted 57056 attendants, which is the largest number of attendants this season.

Overall, the number of spectators of the team is mainly affected by the team's performance, in addition to the size of the stadium. It has little to do with the population of the city where the team is located.



Visualization on the Players

Origin of domestic CSL players

Top 10 CSL foreign players origin countries

Performance of CSL foreign players

The goal efficiency of CSL players

The technology characteristic of CSL players



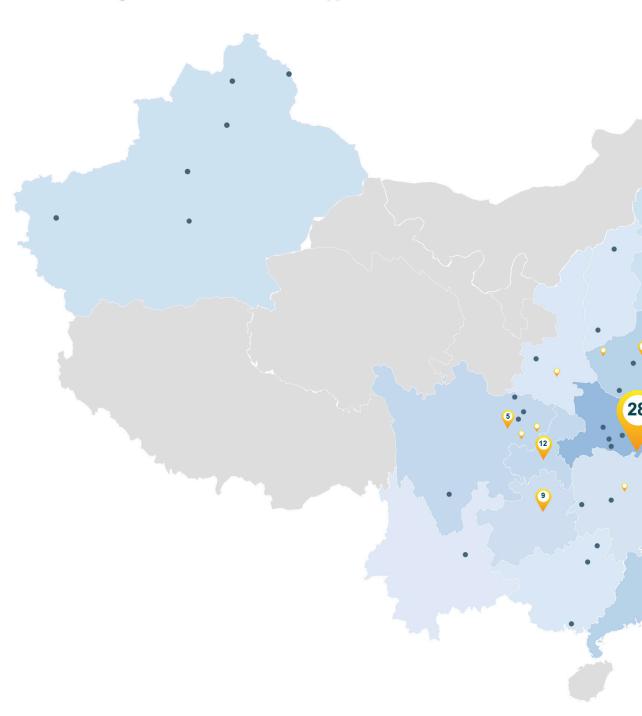
Youth Match between Guangzhou and Shanghai http://www.dfsports.com.cn/jjzgu/ymqu/63229.html

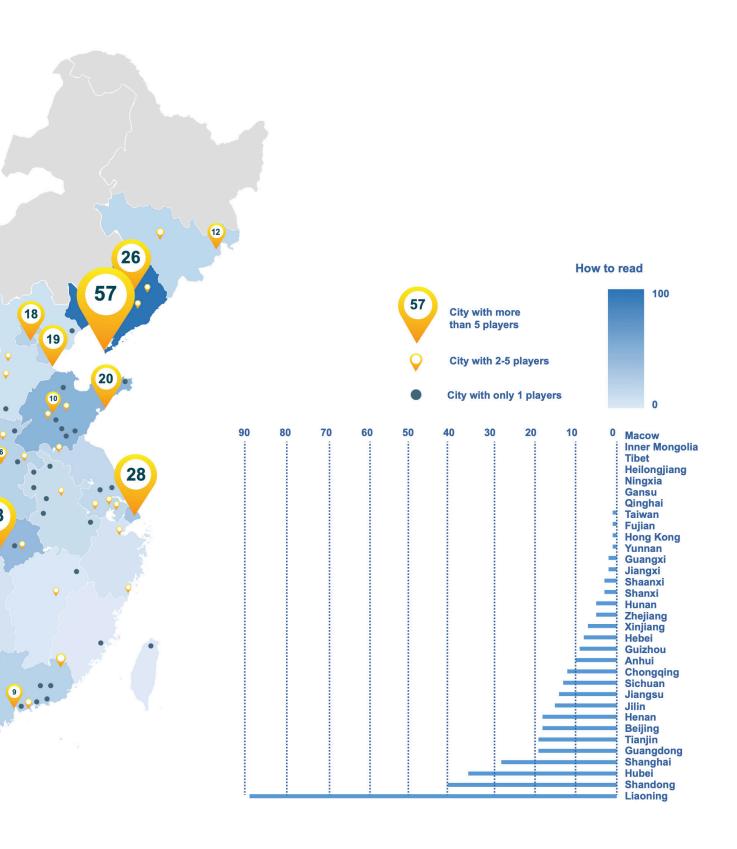
Origin of domestic CSL players

The data in this figure come from All Football app. This map mainly reflects where the CSL domestic players come from. The darker the color on the map, the more the number of players comes from the province. The small blue dot on the map represents that there is one player in the city, and the small yellow icon represents that there are 2-5 players in the city. The big yellow icon represents that there are more than five players in the city, and the number is the detailed number of players in the city.

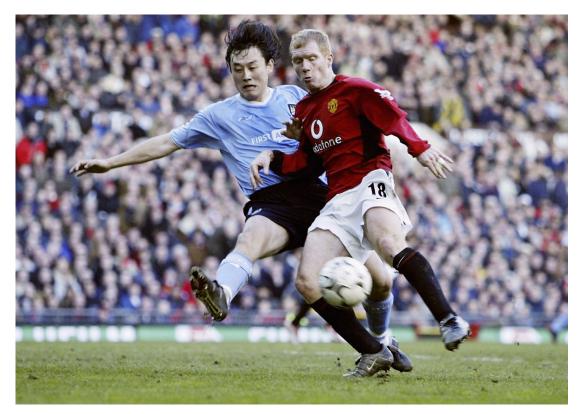
Origin of domestic CSL players

The data source of this figure comes from All Football App.





In the provincial region, Liaoning Province has 86 players, far more than Shandong Province, which ranks second with 40 players. Among them, Dalian city in Liaoning Province has 57 players, which means that in CSL, one out of every five domestic players comes from Dalian city. Meanwhile, there are 26 players in Shenyang city, also located in Liaoning Province. Shanghai and Wuhan, the largest cities in the eastern and central regions, respectively, have also trained 28 CSL players. Shandong Province is the province with the second largest number of players. Qingdao and Jinan, the two largest cities of Shandong province, also produced 20 and 10 players, respectively. Simultaneously, Beijing and Tianjin, the two cities with the best football culture in North China, also have 18 and 19 players, respectively.



Sun Jihai was played in Man City https://www.sohu.com/a/121241197_463728

On the whole, these cities rich in football players have at least one super strong team. The youth training system of these teams has laid a good foundation for the city's football talent training. For example, the national famous Dalian youth-training base (the predecessor of Dalian Yifang), Shanghai Chongming youth training base (the predecessor of Shanghai SIPG) and Guangzhou Evergrande football school. Thus, the youth training system of the club is an important factor to improve the level of regional football.



Li Tie was played in Everton
http://slide.sports.sina.com.cn/slide_2_61364_129038.html#p=1

For Chinese players, it is not easy to play abroad. Because the ability of Chinese players is difficult to play the main force in the European big team, the exposure and salary are far lower than that of the CSL. Many Chinese players who used to play in Europe have gradually returned to China, such as Zhang Yuning, a Beijing Guoan player who used to play for Vitesse in Holland. But for Chinese football, it must be a good thing to have more and more players playing in Europe. At present, China has only one player, Wu Lei, in the European mainstream League. Since he joined La Liga, he has made great progress and gradually become the attack core of the Chinese national team. Take the Chinese team that entered the world cup in 2002 as an example, there were many players play in Europe, including Fan Zhiyi of Crystal Palace and Li Tie of Everton, Sun Jihai of Manchester City and Yang Chen of Frankfurt. It has been proved that staying abroad is an effective way to improve the level of Chinese football. Hope to see more and more Chinese players in Europe in the future.





Top 10 CSL foreign players origin countries

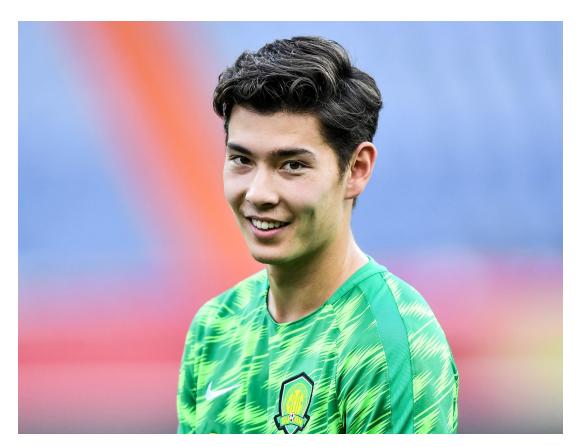
The data in this figure come from the Transfer Market. com. This figure reflects where the foreign players of the CSL team came from the past decade. The darker the country on the right side of the map, the more players from that country join the CSL. Among them, the most is Brazil, 174 Brazilian players have come to China in the past decade. The following line chart shows the number of foreign players in the top ten countries over the years. It can be seen that in any year, Brazil has the most players of all countries.





A more interesting phenomenon is that South Korea and Australia have been in the second and third place after Brazil until 2019, but the number has decreased sharply after 2019. The same thing happened to the Uzbek players. Before 2018, Asian foreign players in CSL will not occupy the quota of foreign players, just as there are restrictions on the number of non-EU players in European teams. However, in 2018, the Chinese Football Association announced the abolition of this policy, resulting in a sharp decrease in the number of Asian foreign players. Only high-level Asian foreign players can stay and use them directly as foreign players, including Kim Minjae, a South Korean player of Beijing Guoan, and Ahmedov, the Uzbek player of Shanghai SIPG.

It is worth mentioning that to reduce the use of foreign players quota in the club and improve the level of the Chinese national team. Since 2019, Chinese clubs have started to introduce foreign football players with Chinese origin who were born abroad and give them Chinese nationality. Promoted by Beijing Guoan, 21-year-old Norwegian Chinese Hou Yongyong became the first Naturalized players in the history of CSL. Then Beijing Guoan went through the naturalization procedures for Li Ke, a 26-year-old British Chinese from Arsenal youth training. Guangzhou Evergrande has gone through the naturalization procedures for Everton player Jiang Guangtai, 26.

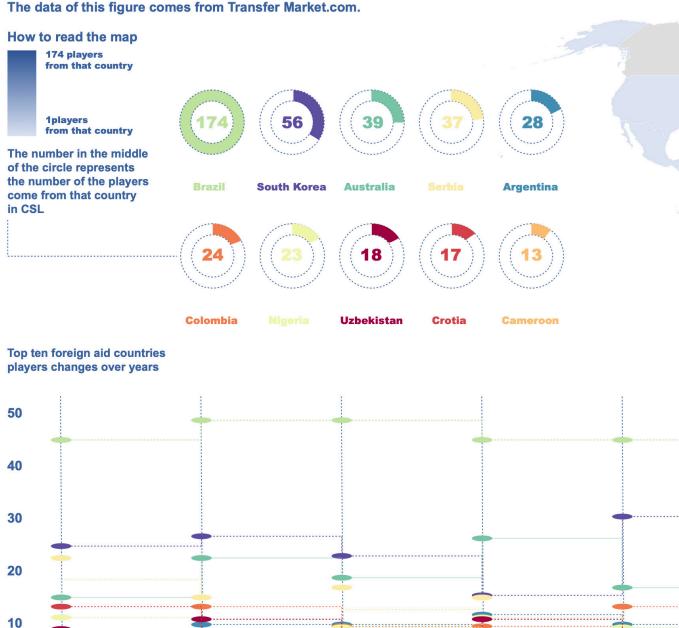


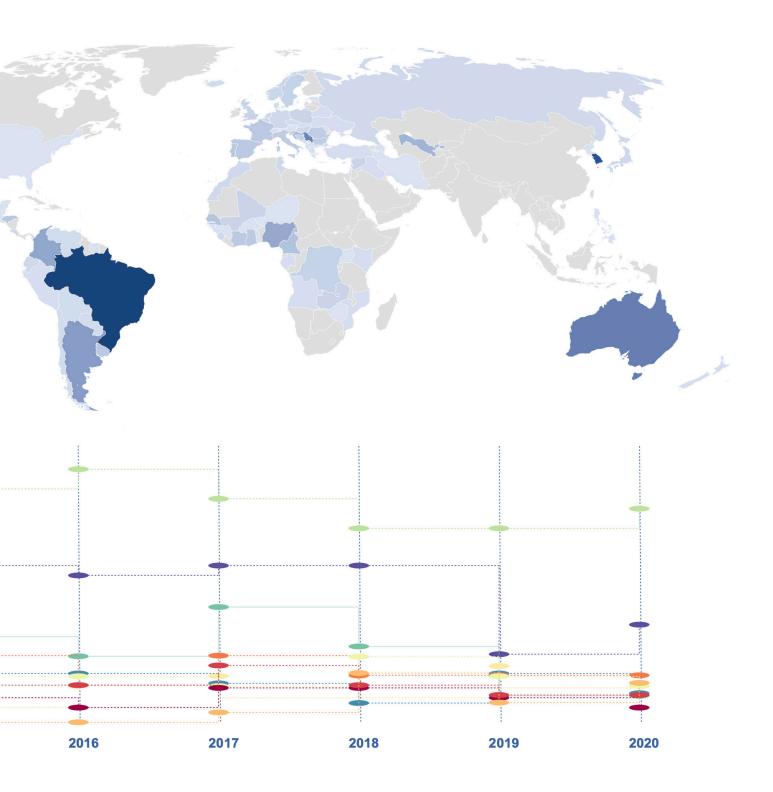
Hou Yongyong joined Chinese nationality from Norway https://kuaibao.qq.com/s/20190806A0F4GO00?refer=spider

After that, naturalized players gradually relaxed the blood restriction. Some players without Chinese origin can also join Chinese nationality, such as Alan and Elkson of Guangzhou Evergrande. Except for Hou Yongyong (who once played for the Norwegian national team), these players are now regular players of the Chinese national team. In the short term, they have indeed improved the level of the Chinese national team, but whether it will help the development of Chinese football talents eventually has always been a controversial topic.

Top 10 CSL foreign players origin countries

The data of this figure comes from Transfer Market.com.





Performance of CSL foreign players

The data in this figure come from the Transfer Market. com. The circle is made up of the total number of players in CSL from the top ten foreign player countries in the past decade. The color represents the country, the size of the box represents the total number of players in the season, the bigger the box, the more the total number of players. The shade of the color represents the number of goals scored by the players of the country in the current season. The darker the color, the more goals.

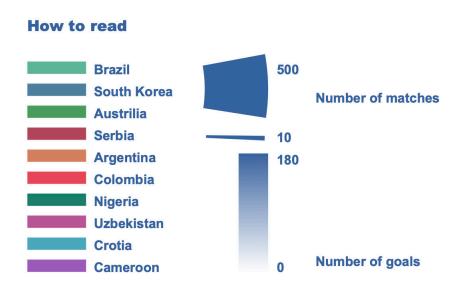
Combined with the previous chart, we can see that in the past decade, Brazilian players not only accounted for one -third of the number of foreign players, but also far ahead of any other country in the number of entries and goals. Among them, Brazilian players scored 185 goals in 2018, accounting for nearly a quarter of the league goals. It is the high performance of Brazilian players in the league that makes the Chinese Super League teams more inclined to introduce Brazilian players. As a result, almost every top player of the Chinese Super League team now comes from Brazil, such as Paulinho of Guangzhou Evergrand, Oscar of Shanghai SIPG, Augusto of Beijing Guoan.

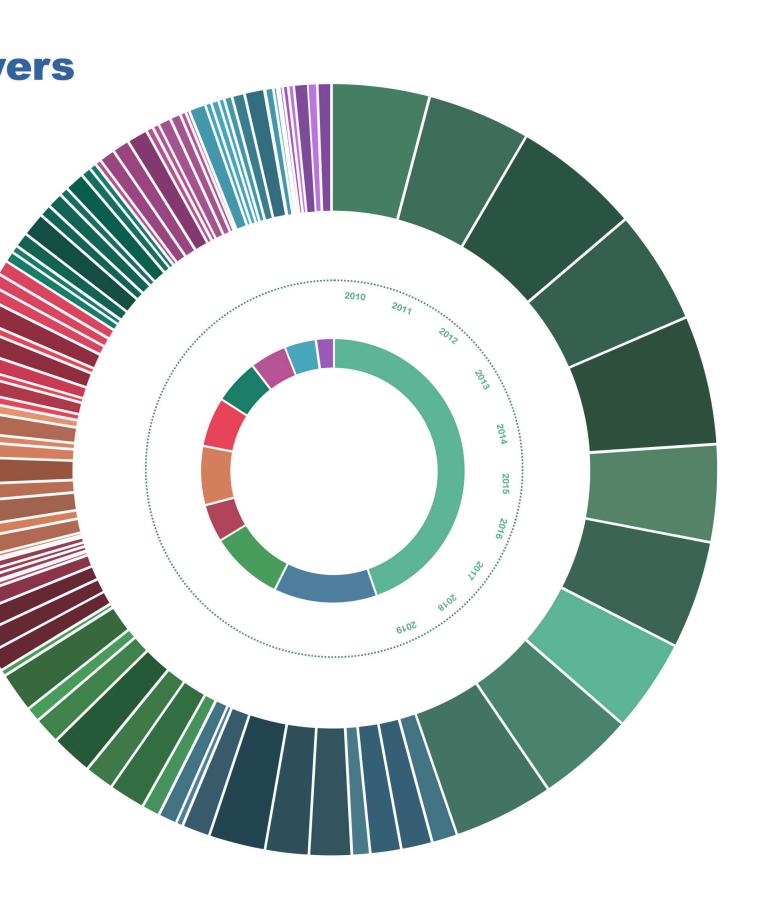
As mentioned earlier, the China Europe Football Association will abolish the policy of Asian foreign players in 2018. It can be seen from this table that the number of players from South Korea, Australia and other countries has changed greatly before and after 2019.



Performance of CSL foreign play

The data of this figure comes from Transfer Market.com.









Performance of CSL foreign players

The data in this figure come from the Transfer Market. com. The figure shows all the players who scored more than two goals in CSL, their age, the number of matches and the number of assists. The abscissa represents the age of these players, the ordinate represents the number of assists of these players, the size of the circle represents the number of goals, and the color of the circle represents the number of games they use to score these goals. The darker the color, the more games they need.



Farewell ceremony of Guangzhou Evergrande legendary player Gao Lin

https://kuaibao.qq.com/s/20191231AZPION00?refer=spider

Of all the players, the one who scored the most goals was Elkeson, a member of Guangzhou Evergrande who was born in Brazil and has now joined Chinese nationality. He scored 112 goals in 176 games. The most efficient scorer is Cameroon striker John Mary, who played in Shenzhen from 2019 to 2021. He has scored 17 goals in 26 games, averaging one goal every 93 min. The local player with the most goals is Wu Lei, who plays in La Liga. He has scored 102 goals in 147 games played by Shanghai SIPG.













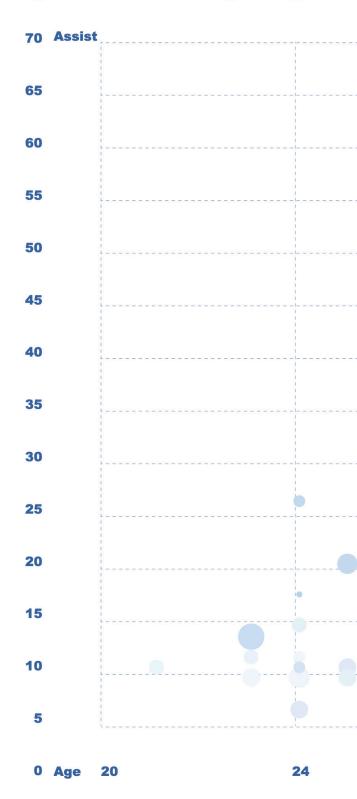


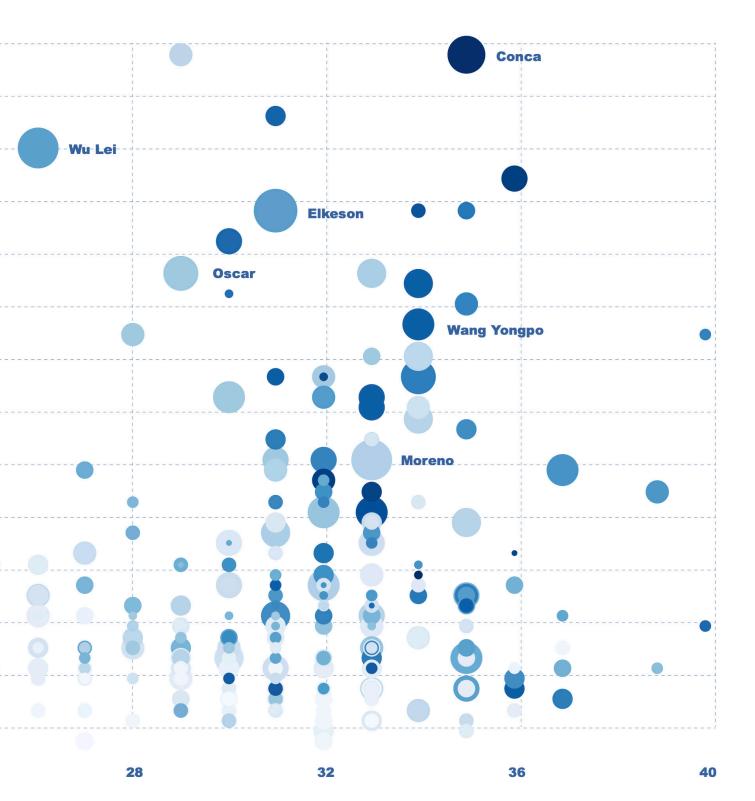




The goal efficiency of CSL player







The technology characteristic of CSL players

The data source of this chart is the official website of CSL. In this chart, the size of the circle represents the time of the player controlling the ball, and the depth of the color represents the average key passes of a player per game. The darker the color, the more the key passes. The abscissa represents the pass success rate, and the ordinate represents the number of passes in a single game. Because there are more than 500 players in CSL, many of them have little playing time. It's hard to read the chart by listing all the players. So here's just a list of players who have played more than 500 minutes in the 2019 season.



Augusto in Beijing Guoan https://www.sohu.com/a/403943449_100253025?_ trans_=000014_bdss_dklzxbpcgP3p:CP=

It can be seen from this picture that the data of several players are obviously better than those of other players. Among them, the 33 year old Brazilian player Augusto of Beijing Guoan is the representative. He has played 152 times since he joined Guoan with 8 million euros in 2016 season, scoring 35 goals and sending 32 assists. This figure is impressive as a midfield player. Now it seems to be a great transfer. Another player with outstanding technique is Oscar, Brazil's midfield player in Shanghai. After joining CSL in 2017 with a record transfer fee of 60 million euros, he has scored 31 goals and sent 52 assists in the past four years.



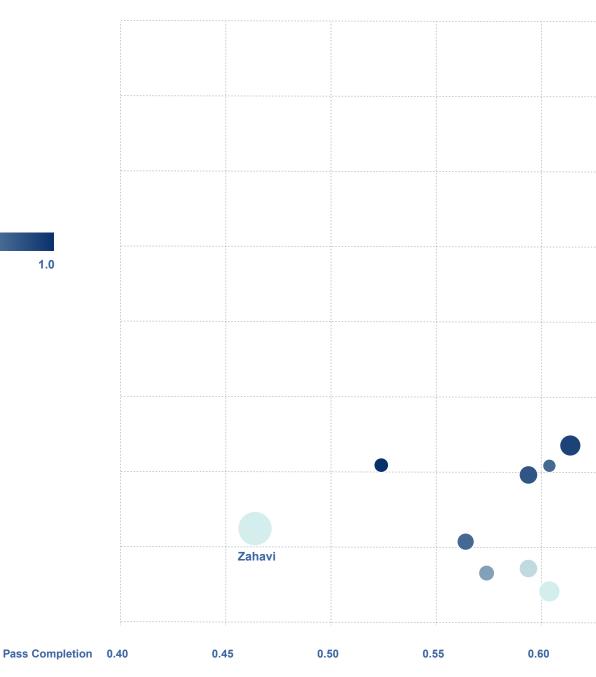
Paulinho in Guangzhou Evergrande https://www.163.com/dy/article/GDEJC2SD0520N3JE.html

Paulinho, a Brazilian player, must be one of the most successful foreign players in the history of CSL. After he transferred from Tottenham to Guangzhou Evergrande in 2015, he performed very well and helped Evergrande win the league and the Asian championship. Paolinio has played for Evergrande for six years, won four CSL champions, one FA Cup and one Chinese super cup. He even had the strength to play in Barcelona for one year. The 2019 season is an excellent year for Paulinho. As a defensive midfield, he has scored 16 goals and 7 assists in the league. Now it's also the main force of Brazil's national team.

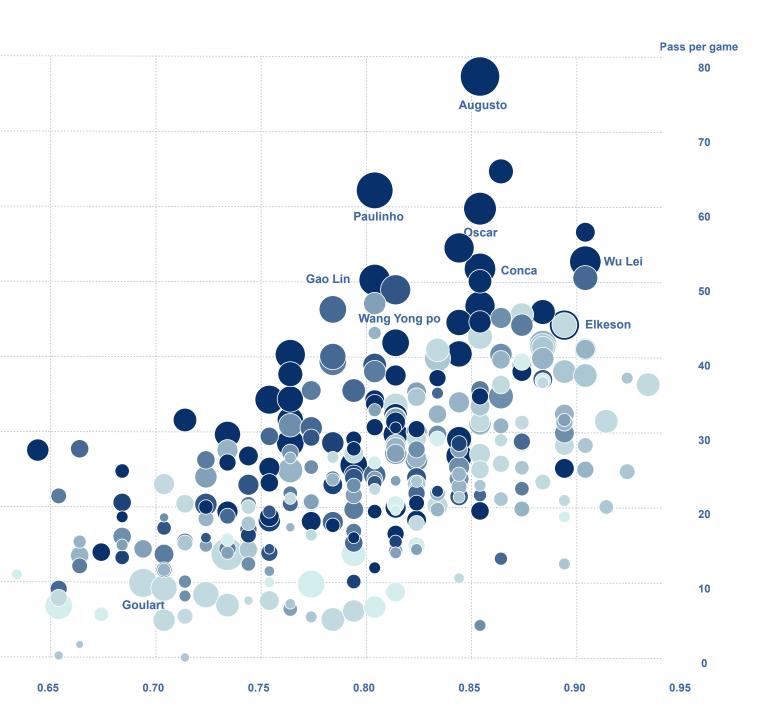
Technical characteristics of CSL pl

The data of the figure comes from the official website of CSL.





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CHAPTER 04

Data Multi-experience

The Platform 4.1

Task Flow 4.2

The Final works 4.3

Data Multiexperience

The Platform

Task Flow

The Final works

The Platform

This project will be displayed through a data visualization website. The reason for choose the form of website to present data visualization is that, on the one hand, Internet is widely spread nowadays. Compared with traditional brochures and other forms, uploading to the network can make it easier for everyone to obtain information through their own mobile terminals; on the other hand, because the website has the real-time update function that the traditional mode does not have, all the data on the website can be updated once a year by season, to avoid the situation that the data visualization loses the reference value after a few seasons. Finally, the website also has interactive functions that other media do not have. For example, in the visualization project, some unit values are too small to be seen by printing. At this time, you can click to display the detailed dataset. Therefore, the website is the most suitable medium to show the project.

Brazil defender Gil https://sports.huanqiu.com/gallery/9CaKrnQhUpw

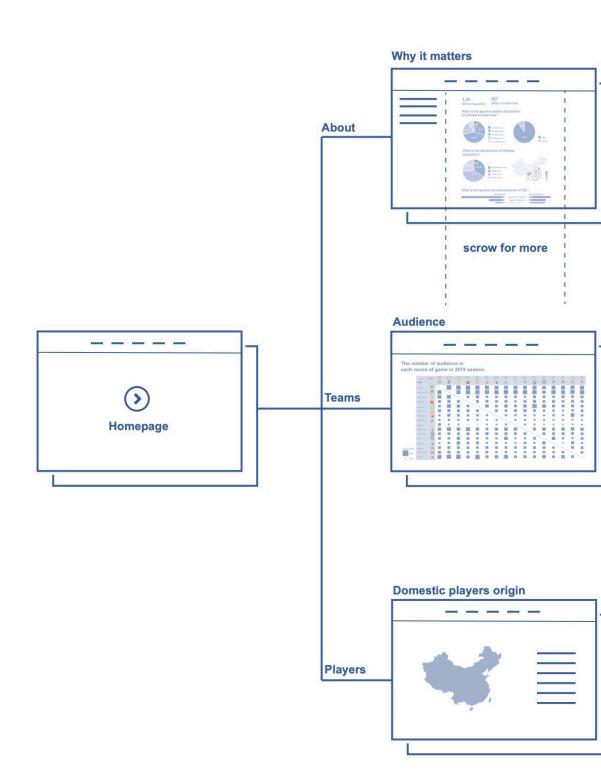


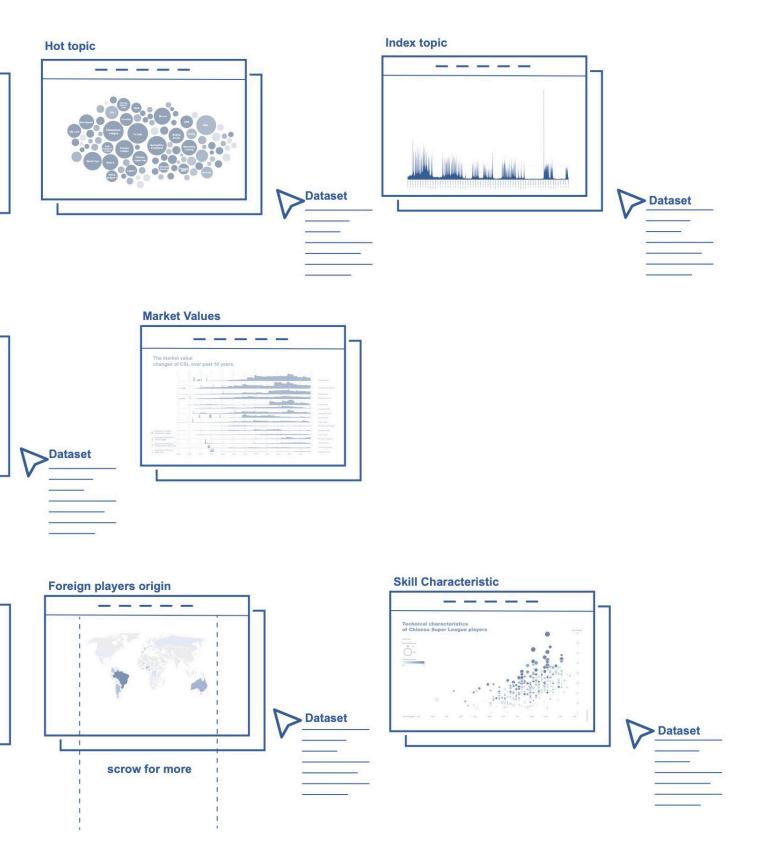
The main structure of the website is as follows: a home page and three pages, which are about data visualization of CSL, CSL teams and CSL players (the visualization of CSL teams is displayed on the about page). Each page contains 3—5 visualization charts, which can be jumped by sliding the mouse or the link of the guide bar on the left side. The reason why the website is constructed in this way is to ensure that the website can clearly display the visual project and keep the network structure concise to the greatest extent. To achieve a better effect of reading data, can also add interaction in the visual page where it is necessary to display its data source by programming. Users can view the detailed data of each unit by clicking.

The main purpose of the website is to show the situation of CSL to users, which determines that the website is not an artistic website. All colors and typesetting should be based on conveying information. So, the black background is selected, and the white and sky blue of the visual chart are conspicuous on the black background. The purpose of this website is to use visualization to convey information. Text is only an auxiliary tool. Therefore, we choose the simple font without decorative line in the selection of font. The color is white and sky blue corresponding to the visual chart, to weaken the sense of existence of text and highlight the importance of visualization. The main purpose of website typesetting is simplicity. In addition to the visualization project in the central area, there are only the paging box at the top and the link box of social media.



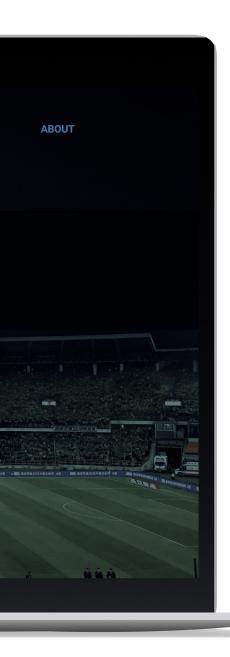
Task Flow of the website

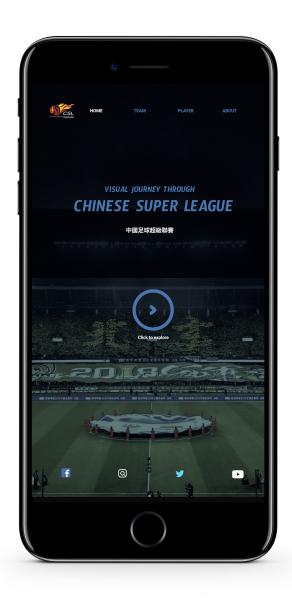


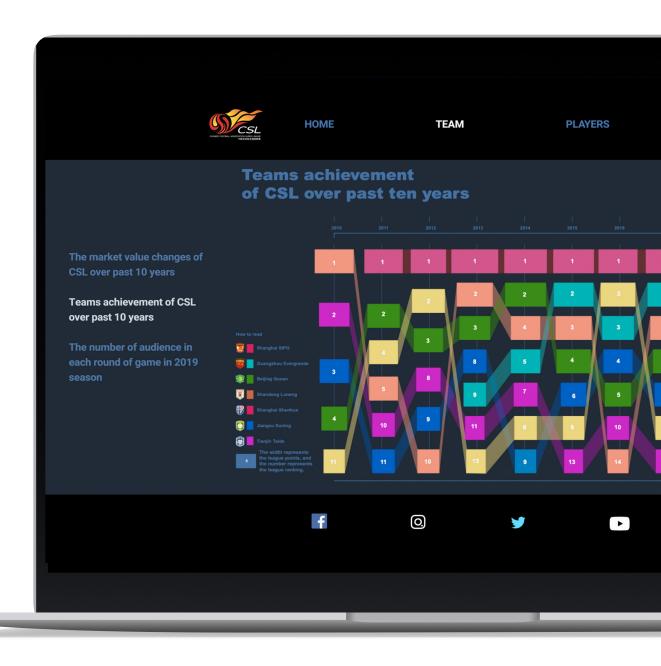


The final works



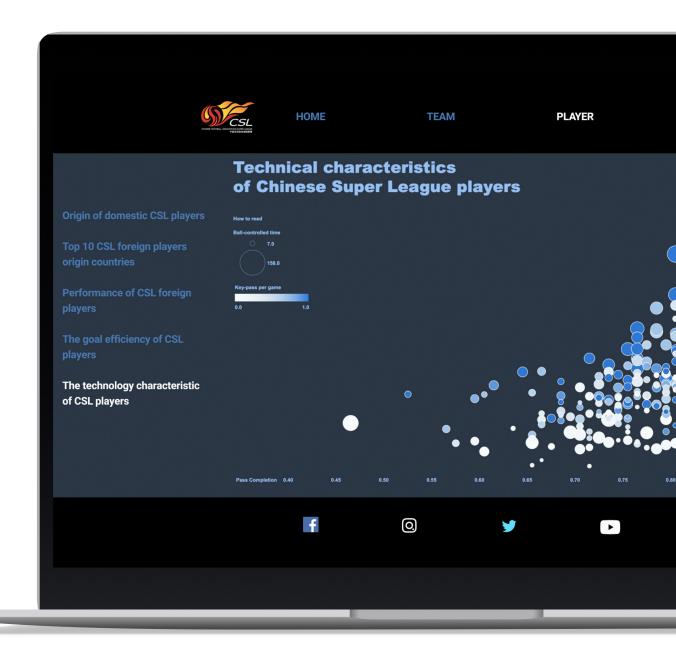


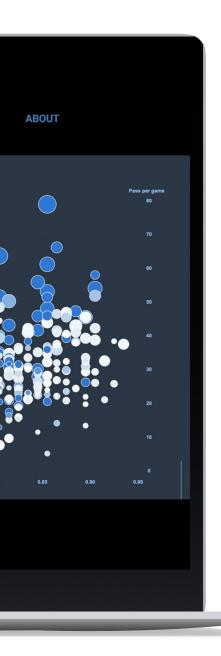


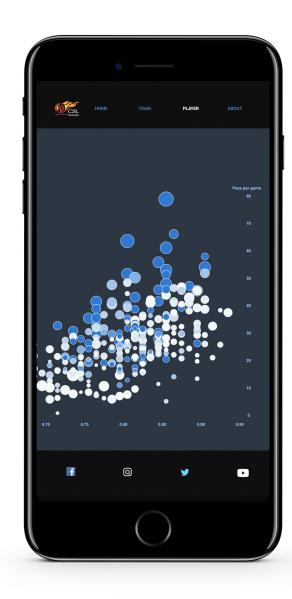


















CHAPTER 05

Conclusion

Conclusion . DATA VISUALIZATION OF CHINESE SUPER LEAGUE

Conclusion

Overall, this project has achieved the goal that to display the CSL objectively and comprehensively readers. For example, readers can find that the CSL is not a place where full of rich crazy Asian guys in the stereotype. Like Oscar, the most expensive player in the CSL, is just a player at the upper middle price in the European mainstream League. Shanghai SIPG, the team with the highest value in CSL, only ranks 17th in Serie A, lower than Genoa and higher than Empoli. If placed in the Premier League, even Norwich, which is the cheapest team in Premier League, is twice more than the market value of Shanghai SIPG. Even in Asia, CSL is not the most expensive League. The value of UAE and Japan League is higher than that of CSL, which proves once again that CSL is not spending money blindly. The value of CSL is a reasonable range in line with China's economy and the overall level of Chinese football. It plays a certain role in eliminating the stereotype of CSL by people who don't understand CSL, both in China and abroad.

Suporters of Chongqing Dangdai

http://www.ppsports.com/article/photos/606813.html



In addition to the objective and comprehensive data display of CSL, and this project promotes the CSL. Therefore, it provides a convenient website for readers to browse and extract data. Compared with traditional media, it can help the communication of CSL more effectively. So that people who have not been in contact with CSL before can be in contact with CSL, attract people to look at football from another perspective rather than viewing on the competition only. Help readers realize that the development of football cannot be achieved overnight but has various complex industries. It agrees with my expectation of this project mentioned in the former chapter.

Additionally, the data in the project can also help some readers who already know CSL very well and even relevant stuff to look at the problem from a different perspective and find some new ideas that they did not know before. Through data visualization in the project, we not only get some expected conclusions but also get some unexpected phenomena. For example, after the outbreak of CSL in 2019, the first round of CSL caused the largest amount of attention in the history of CSL, even five times more than the second popular one. It can be seen that how much people paid attention to the news about the improvement of the epidemic situation at that time. A surprising thing is about the related topic of CSL. The topic of Wu Lei's transfer to Real Madrid once appeared in the hottest topic for a long time this year, but it has never been reported by any official media, but it has stayed in the hot topic list for a long time like a miracle.

Generally, this project playes a certain role for people who have never known CSL, who has a stereotype of CSL or who already know CSL well. We hope that through the data visualization, on the one hand, we can help people objectively understand that CSL is just one of many professional leagues; however, it shows the problems of CSL and hopes it will get better and better.

CHAPTER 06

Reference

Reference

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