

Intelligent Matching System of Parallel Volunteer Scheme Based on Big Data Analysis and Operation of College Entrance Examination

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Abstract

How to accurately grasp the filing law under the parallel voluntary mode and establish a set of scientific and reasonable college entrance examination voluntary registration scheme analysis, selection, design, establishment and filling system is the most concerned problem of the majority of candidates and parents. This paper studies a set of parallel intelligent volunteer matching system based on "two libraries", "two tables", "two models", "two groups" and "two gradients". The system can provide massive information and data services for college entrance examination students and their parents in provinces and cities implementing the parallel voluntary filing and admission mode. Candidates can comprehensively study and judge their college entrance examination strength, so as to provide scientific basis, personalized design, intelligent matching and other services for the analysis, selection, establishment and filling of candidates' college entrance examination voluntary scheme.

Keywords

Parallel voluntary; College entrance examination; Big data analysis; Intelligent matching.

1. Introduction

The college entrance examination in the United States is called SAT [1], which is the national unified learning level test. The SAT test is divided into two parts. The first part is called the comprehensive part, including English and mathematics, which is called SAT1. The second part is the single subject examination, including physics, chemistry, biology and foreign language, which is called SAT2. SAT1 score is a unified requirement of all universities, that is, only when the SAT1 score reaches a certain standard can we have the opportunity to enter the University. The score of SAT2 depends on the requirements of colleges and universities. It is accepted only after passing. The college entrance examination for American students, to be exact, starts from the first year of senior high school. For example, Harvard University rejects many students with full SAT scores every year because their comprehensive quality is not enough. The SAT test in the United States can be taken in middle school, and it can be taken seven times a year. Students can choose their most satisfactory results and send them to college. Some American parents don't even know when their children took the test. The British education system is arguably the most rigorous and flexible in the world. After graduating from junior high school, middle school students have to take an important GCSE examination [2], that is, the general secondary school education certificate examination, which usually takes 8 to 10 courses. The proposition is unified by the British education department and the national unified examination. After passing the GCSE examination, students who want to enter the university must continue to study in high school for two years to prepare for the college entrance examination. For Canada, the college entrance examination is a strange concept. If Canadian middle school students want to go to college, they don't have to take a special entrance examination, so most Canadians don't know what the college entrance examination is. In June every year, when Chinese high school

graduates are busy for the college entrance examination, Canadian high school graduates may have already received the admission notice from the University. Some students will face the admission notice from several best universities and are in a dilemma about which one is better. Although there is no college entrance examination, it is not easy for Canadian high school students to enter a good major in a famous university. The provincial governments are responsible for the management of education in Canada, which leads to the differences in the primary and secondary education system in Canada, and the admission requirements of Canadian universities for students everywhere are also different. The national college entrance examination in Japan is not the final word [3]. National, public and some private universities have a national unified examination in January every year, mainly basic subjects, Mandarin, English, mathematics, Science (Physics, geography, chemistry, Biology) and social subjects. From mid February to the end of March, each school will conduct the second special examination according to its own situation. Therefore, there is no need to study the law of college entrance examination and admission abroad.

In China, there is an annual examination, and the college entrance examination results determine the fate of going to college [4, 5]. This college entrance examination system with Chinese characteristics is not much improving. In this case, the results of the college entrance examination have become the decisive factor in going to college and the last crystallization of the twelve years of hardship. However, only having good college entrance examination results may not be able to go to a good university. It also has a great relationship with the scientificity and rationality of voluntary reporting. Especially in the non parallel voluntary mode, there is often a phenomenon of "big and small years" in the enrollment and filing data of colleges and universities. It is this phenomenon of "big and small years" that makes it impossible to accurately judge the regularity of college admission. After the implementation of the parallel volunteer mode, although this phenomenon of "big and small years" has been greatly improved, and even there is basically no problem of "big and small years", the difference of college placement scores is relatively stable, the college entrance examination scores of students are flattened, and the admission scores of various majors are not different. Compared with the unequal volunteer enrollment mode, it is more regular, but what kind of law is it, No one has studied it yet.

After the college entrance examination, each candidate should choose the most suitable university and major according to their own college entrance examination results and other conditions. This is not only the goal, but also an important problem to be solved in the process of voluntary filling. However, over the years, examinees have faced major problems in the voluntary filling in of the college entrance examination, such as difficult prediction, difficult analysis and difficult choice. The use of the network or the college entrance examination voluntary filling reference system can only query the highest score and average score of colleges and universities in a certain year. There is no lowest filing situation (score, difference, provincial ranking and other data), and the law of filing and admission to colleges and universities can not be found. The law of filing and admission in Colleges and universities is the most concerned and troublesome thing for every candidate and parents in the process of voluntary filling in the college entrance examination.

2. Research Significance

Although the parallel voluntary enrollment mode has been implemented for many years, and the operation modes of provinces and cities are almost the same, the lowest, average and highest scores of the same university in different provinces and cities and their provincial rankings are different every year, and the lowest, average and highest scores of the same university in the same province and city are different every year. The highest score line and its

ranking in the whole province are also different; Considering that different majors of colleges and universities are in the same province and city, and the lowest, average and highest scores of the same major in different provinces and cities and their ranking in the whole province, there has been a huge and massive amount of data on the enrollment of more than 1000 colleges and universities and their majors in all provinces and cities in China for so many years since the implementation of parallel volunteer. At the same time, these massive data will appear in different channels, and even the same data will have different results in different channels. This brings a lot of inconvenience to candidates and parents when analyzing the data related to the college entrance examination. Through the R & D and application of this platform, it can easily provide accurate large amount of information and massive data services for candidates and parents.

For the vast majority of candidates and parents, after the announcement of the college entrance examination results, they are thinking about the same question. What university do I want to go to? What's your major? According to this way of thinking, candidates and parents began to list a large number of colleges and universities of their own mind, and to query the investment data information of these colleges and universities in previous years. For another way of thinking, first rank the (average, minimum) filing scores, differences, rankings and other data information of colleges and universities in previous years, or the average value of filing data in several years from high to low in descending order; Then, using the positive operation method of the system, infer that their college entrance examination scores are equivalent to those in previous years. Then, it is easy for candidates and parents to find colleges and universities suitable for them, so candidates and parents will select colleges and universities they may go to and choose the colleges and majors they want. This voluntary filling method has strong pertinence and scientificity.

In the parallel volunteer mode, candidates fill in several parallel but orderly college volunteers, and file according to the ranking of candidates' college entrance examination results and the order of college volunteers in accordance with the principle of "score first and follow volunteers". The files submitted by candidates are regarded as the first volunteer and are selected by colleges and universities. Moreover, based on the announcement of the college entrance examination results, the minimum admission score line of the batch and the number of online candidates in each section, the equal volunteer is a way for candidates to fill in the volunteer within the specified time. The popular saying is "knowing the score, the line and the position", which can overcome the blindness of filling in the volunteer without knowing the score, the position and the admission line, Effectively solve the problem of registration errors caused by inaccurate evaluation.

3. System Design

Now there are some software for voluntary filling in the college entrance examination on the market, which is mainly divided into several aspects: focus on preparation before the examination. For example; College entrance examination knowledge focus, review plan before examination, teacher lecture and so on; Focus on introducing various colleges and majors and providing reliable information; Simulate the voluntary reporting system and train the skills of voluntary reporting. Distribute the stages before, during and after the test.

At present, there are "the first college entrance examination network", "volunteer treasure", "college entrance examination volunteer network" and other college entrance examination volunteer filling guide pages on the market, as well as mobile app forms of college entrance examination volunteer filling systems such as "college entrance examination e volunteer", "Lexue college entrance examination", "college entrance examination volunteer filling consultant system" and "gaotu volunteer", which are in "promotion mode", "operation mode",

"business process" "Learning fee / charging mode" and "function point / special function point" are different.

It is understood that at present, there are various college entrance examination voluntary analysis systems. On the one hand, they directly compare the absolute data of the examinee's score and the provincial ranking with the actual data of the college entrance examination admission score and the provincial ranking in previous years; on the other hand, they ignore the changes in the number of examinees participating in the college entrance examination every year, the changes in the enrollment plan of colleges and universities, and the actual data of each province. At the same time, it does not take into account the number of candidates admitted in advance, the number of candidates who may fail in the actual admission, the expansion of college enrollment plan, the number of people who failed in the previous batch and other data. In short, the existing college entrance examination voluntary query system mostly carries out absolute data analysis in the analysis of college entrance examination data. Qualitative analysis, lack of relativity, quantitative.

This article collects, collects, collects, statistics, analyzes and calculates the data of the college entrance examination, such as "batches control line", "enrollment plan", "minimum placement line", "one minute and one table", the scores of candidates and their provincial rankings, and so on, so as to establish the "two models" -- the mathematical model of positive operation and the mathematical model of inverse operation; at the same time, it generates "two libraries". "Two tables", "two groups" and "two gradients", so as to develop a set of "one key intelligent matching system of parallel volunteer scheme based on college entrance examination big data analysis and operation".

After the examinee enters the system, first, after pulling down the options such as "province", "subject", "batch" and "year", as long as the data such as "college entrance examination score" or "provincial ranking" are input with one button, the system will automatically start the "positive direction operation mathematical model" to calculate the relevant big data within the system, and then the examinee's college entrance examination data of the current year can be calculated (scores, provincial rankings, scores of super batch lines, etc.) correspond to the equivalent amount of this data in the past year; secondly, based on the equivalent amount of this data, combined with the requirements of "two gradients", through the "mathematical model of parallel volunteer differential operation". The system can automatically match a set of parallel voluntary scheme groups; then, according to the school running conditions, professional settings, enrollment plans and other factors of colleges and universities, combined with personal interests, career intentions, future development and other factors, candidates can independently check the interested colleges and universities in the parallel voluntary scheme group to determine a set of scientific parallel voluntary scheme groups. Finally, candidates can predict the possible minimum investment line of colleges and universities in the parallel voluntary scheme according to the "mathematical model of reverse direction operation", and then judge the accuracy, reliability, safety and risk of the parallel voluntary scheme, so as to provide candidates with one click intelligent matching design service for the parallel voluntary scheme of college entrance examination.

(1) "Two libraries" -- establish two databases of "each batch control line" and "the lowest investment line of colleges and universities"

(2) "Two tables" -- generate "one point and one paragraph table" and "list of minimum investment score line and its provincial ranking"

(3) "Two groups" -- Design "parallel volunteer group" and "parallel volunteer Scheme Group"

(4) two models -- two mathematical models of "affirmative operation" and "inverse direction operation".

- establish "positive direction operation mathematical model"

Based on the public big data of college entrance examination such as "one point and one section table", "batch control line and its provincial ranking" in previous and current college entrance examination, $WP = [(wb-ws) / (db-ds)] * (DP-DS) + WS$ "positive direction operation mathematical model" is established to convert the individual "college entrance examination data of that year" (score, provincial ranking, etc.) into "college entrance examination data of previous years" (score, provincial ranking, etc.) That is, calculate the "equivalent data of previous years" of the examinee's personal "college entrance examination data of that year" (see the "list of equivalent data of previous years of examinee's data of that year") and then take this as the basis to match the "benchmark volunteer" in the examinee's parallel volunteer group from the "list of minimum filing score line and provincial ranking" of each batch of parallel volunteer admission in Colleges and universities.

- establish "mathematical model of reverse direction operation"

Based on the public big data of college entrance examination such as "one by one table", "batch control line and its provincial ranking" in previous and current college entrance examination, a "reverse direction operation mathematical model" is established: $DP = [(db-ds) / (wb-ws)] * (wp-ws) + DS$, and the "reverse direction" mathematical operation is carried out to predict the recruitment level and position of colleges and universities in that year, that is, the "parallel volunteer scheme" finally selected and determined is calculated Then, compare with the examinee's personal "college entrance examination data of that year" (score, provincial ranking, etc.), verify the "positive direction" calculation results and the scientificity, rationality and accuracy of the setting of "parallel volunteer scheme" based on this.

(5) "Two gradients" -- set "College gradients" and "specialty gradients"

4. Summary

After the development of "one click intelligent matching system for parallel volunteer schemes based on big data analysis and operation of college entrance examination", parallel volunteer schemes (groups) can be provided for candidates through Internet, mobile terminal (APP) and other means and methods Analysis, selection, establishment and filling service. After registration and login, candidates can select year, province, batch, subject and other options through the drop-down menu within a certain authority, and fill in the candidates' personal "college entrance examination data of the current year" (score or provincial ranking, etc.), and the system will automatically associate with the background database to enter the parallel voluntary admission of each batch of ordinary colleges and universities "List of the lowest grade line and its provincial ranking", and automatically start the "positive direction operation mathematical model" system, "parallel volunteer grade operation mathematical model" system, "parallel volunteer scheme (Group)" design system, "reverse direction operation mathematical model" system for calculation and analysis, so as to design several sets of parallel volunteer schemes (groups) for candidates Finally, candidates will conduct a comprehensive and comprehensive analysis on themselves according to their personal hobbies, professional interests, professional intentions, employment direction and other factors, in combination with the geographical location of colleges and universities, school running conditions, school types, discipline advantages, specialty settings, enrollment plans, school running forms, etc., and select and determine a set of candidates in each scheme group of the above-mentioned parallel volunteer groups It is a "parallel volunteer scheme" with scientific and reasonable gradient matching the data and information of the college entrance examination.

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