

Design of Computer-Aided Platform for College Students' Mental Health Education Based on Wisdom Test Algorithm

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Abstract: This paper proposes an algorithm framework for generating pairs of combined test case sets based on particle swarm optimization. When generating test cases, the framework uses particle swarm optimization to try to generate test cases with strong combined coverage capability, and studies the search space. The network environment is described. Undergraduate mental health education system. The system has a clear process and strong practicability, which can reduce the burden of teachers, improve work efficiency, and provide effective support for college students' mental health education. Various analysis methods are used to extract eigenvalues from signal analysis and modeling. The evaluation system has been completed, and the psychological stress evaluation system adapted to the clinical needs of the existing hospital has been completed.

Keywords: Computer Aided Platform, College Students' Mental Health, Wisdom Test Algorithm

1. INTRODUCTION

In April 2008, the National College Student Mental Health Education Work Forum was held in Wuhan University [1]. The forum pointed out that the mental health of college students in my country is generally good, and college students are not a high-risk group of psychological problems. However, under the new situation, the pressure faced by college students generally increases [2]. Through the analysis of the software product under test, the tester can obtain an instance composed of factors and selectable values. If sufficient testing is required, the corresponding full-combination test case set needs to cover all possible value combinations between any factors. When the instance is more complex [3], that is, it has multiple factors or some of the factors have multiple selectable values. In intelligent traffic management, target vehicle monitoring, traffic flow statistics [4], illegal vehicle tracking, etc. can be achieved by accurately detecting vehicles. Therefore, how to correctly identify and detect vehicles is of great significance [5].

Object detection involves identifying objects of interest in an image, determining their location and categorizing them. Quick and accurate detection of traffic incidents can assist injured individuals [6], reduce casualties and property losses, but also reduce secondary accidents caused by one accident. Widely used in research to identify states of psychological stress. Research has shown that there is indeed [7] a very strong link between psychological stress and heart rate variability. Heart rate variability also fluctuates irregularly when the autonomic nerves are deranged and irregular [8].

In the 1980s, in addition to the United States, western countries such as Germany [9], France and the United Kingdom began to apply computer technology to psychological assessment, and developed rapidly and achieved certain results in these fields [10]. In the information system of these psychometric assessments. To sum up, it is clear that the exploration and realization of the content of

psychological counseling is relatively in-depth [11], and great progress has been made in both the effective interpretation of the theoretical part and the follow-up innovative exploration. It is only clear in the research conducted by the author that there are deficiencies in the service effects of each consulting system itself [12].

Software testing can be classified into black-box and white-box testing, based on whether the tester considers the internal structure and characteristics of the software system [13]. Combination testing is a black-box testing method that employs a small set of combined test cases to detect failures caused by factors or interactions between them [14]. The use of network technology-supported mental health education methods can complement the traditional approach and encourage student participation [15], for the deficiencies of the traditional mental health education method and stimulate the enthusiasm of students to participate. Harman and Jones first proposed the concept [16] of search based software engineering (SBSE) in 2001. This field attempts to use meta-heuristic search techniques to solve a class of software that [17] can be transformed into combinatorial optimization problems with reasonable computational cost Engineering problems [18].

However, most psychological knowledge on the Internet is not specifically for college students. Therefore, colleges and universities should build The field of search-based software engineering (SBSE) was first proposed in 2001 by Harman and Jones [16]. SBSE aims to use meta-heuristic search techniques to solve a class of engineering problems that can be transformed into combinatorial optimization problems with reasonable computational cost, as soon as possible. The former has good detection accuracy, but the detection efficiency is slow, such as R-CNN [17], Fast R-CNN [20], Faster R-CNN and other algorithms. In the latter, the image data is input into the network, and the candidate frame is no longer extracted separately, and the whole image is directly convolved and pooled [21], and then the effective feature

layer is extracted and then returned to the target category and target area. The control center of the intelligent transportation system monitors and collects information such as traffic flow and road conditions on the road section [22].

In terms of system design, we fully consider the non-objective probability of test results presented by psychological scales under subjectivity and environmental factors, and propose [23] a comprehensive psychological stress assessment method that combines psychological scales with electrophysiological parameter detection. The method is based on overcoming the detection error of pure psychological scale. As a child of the emperor [24], mental health is the foundation of academic achievement, career success, and happiness in life. Therefore, when college students encounter mental health problems, if they can get psychological counseling services in time, they can eliminate psychological obstacles and relieve psychological [25] pressure in time. Relying on the Android system based on Linux 2.6 version, its core services will cancel some of the functions in GUN/Linux in addition to replacing them with new functions. For example, missing functions such as Alas, Pang, Glibc, etc., Cairo is also replaced by Skia [26].

2. THE PROPOSED METHODOLOGY

2.1 The Smart Test Algorithm

The evaluation of course teaching effect in my country's c Consider the system compatibility test example in Figure 1(a), which has 4 factors {Database server, Web server, Browser, Router}, and each factor has 3 selectable values. For example, the factor Database Server has the selectable value set of T is {Oracle, SQL server, MySQL}. From this table, we can see that the 17 test cases in this table can completely cover all combinations of three different factors and their possible values in the software system T under test, the number of test cases is visibly reduced, manpower and test costs are saved. If a full combination test case set is generated, the scale of the test case set is $3^4 = 81$. The SSD target detection algorithm has excellent detection efficiency and accuracy among the current mainstream algorithms, so many scholars choose the SSD target detection algorithm.

When modifying the weights, it is necessary to consider not only the influence of the error on the gradient, but also the influence of the change trend of the error on the surface. A momentum value is added to the increment of each weight value. Based on the research of other scholars, this paper improves the network structure of the SSD algorithm with reference to the pyramid network, which can more accurately realize vehicle target detection. In Definition 2, t is the parameter of the combined coverage criterion, which is also called coverage strength in some literatures. When $t=1$, it is called the single factor coverage criterion; when $t=2$, it is called the pairwise combined coverage criterion; t When $= k$, it is called the full combination coverage criterion. As the coverage strength increases, the SSD algorithm performs dense sampling at different positions of the image, and then uses the convolutional neural network to extract features for target detection.

2.2 The College Students' Mental Health Education

Quality education is the conceptual pillar of the construction of an information-based teaching model. Making full use of computer network technology to carry out college students' mental health education is a new measure to strengthen and improve college students' mental health education under the

new situation. At present, the mobile smart terminal market is in a situation where various smart systems coexist. In addition to the main Android smart system, there are Nokia Symbian system, BlackBerry system, Microsoft Windows Phone system and Apple IOS system.

Currently, Android, Windows Phone and IOS are widely used in the market. The college student mental health management system aims to provide easy access to mental health consultation services, real-time assessment of psychological conditions, and presentation of assessment data to teachers and schools. To improve the accuracy of vehicle detection under complex traffic conditions, this paper proposes a method that combines high-level feature maps with rich semantic information and low-level feature maps with rich location information. There are many counselors in the counseling center who can provide services, and each person's professional background and life experience are inconsistent. There will be differences in the focus of services. Therefore, the obtained system needs to be able to support the operation processing such as effective access control for the retained consultants.

According to the psychological characteristics of college students, this module sets up sections such as psychological dictionary, psychological abstracts, college students' psychology, and college students' career planning. This module is the entrance of the whole system, it is actually an information release system. The SSD target detection algorithm has the following advantages: first, the fully connected layer is no longer used, and the calculation efficiency is improved; second, there is no requirement for the size of the input image, and the size is uniformly modified after the image is input, which is more flexible.

2.3 The Design of Computer Aided Platform for College Students' Mental Health Education

Due to the complex traffic conditions, the detection accuracy of vehicles is a special micro-traffic simulation system, VISSIM 510 software developed by German PTV company is used. From the aspects of speed, comfort, convenience, economy and safety, the service level of expressways in my country is divided into four levels, and the simulated expressway service level here is set as three levels. The proposed method is evaluated using the VISSIM 510 software developed by the German PTV company. The expressway service level in China is categorized into four levels based on speed, comfort, convenience, economy, and safety, and the simulated expressway service level in this paper is set to level three.

The constructed system needs to refer to the logical interaction control completed with the server to update and maintain the SQLite information during the function execution, so as to ensure the business logic work that can be obtained locally. of completion. The following figure shows the detailed information of the overall structure diagram of the system logic built on the basis of Android mode. Each particle in the particle swarm algorithm is learning from each other. In addition to its own cognition, the particle also has social cognition, that is, it constantly learns from particles that are better than itself. The population propagates iteratively in this way, and all its particles can tend to an optimal position within the operational range. Testing is the core functionality of this module. After the teacher logs in successfully, the process of adding a psychological test is as follows: first add

the name of the psychological test, and then add questions to the test.

3. CONCLUSIONS

This paper proposes a pairwise combination testing algorithm framework based on particle swarm optimization. The framework provides two test case set generation strategies: one based on one-test-at-a-time strategy. College students' mental health education is a complex and hard work that requires the participation and joint efforts of teachers, college students and their parents, and takes various forms and methods. In the system, in the college student mental health management system, structured data is stored in a relational database (MySQL), and text data is stored on the SAN. The system involves many relational queries and transaction processing.

4. REFERENCES

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