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Sports Intelligence Training Framework Based on Image Processing Chip Fusion Multimedia

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Abstract:On the basis of analyzing and studying the relevant theories of image fusion, this paper introduces a variety of fusion methods that can be run on the platform, as well as the method of constructing the fusion algorithm function chip. The decline in physical fitness is getting more and more serious, which has gradually attracted the attention of schoolteachers and parents. All sectors of society are paying close attention to the school's actions. A healthy body is the foundation of students' learning and the driving force for students' development. The way to generate the teaching wisdom of physical education teachers is to first get rid of the constraints of traditional physical education teaching concepts on teaching, improve the professional quality of physical education teachers, secondly strengthen the practical reflection of physical education, strive to improve the management system of the campus, and finally strive to improve the professional skills of physical education teachers. Ability to integrate with Internet technology.

Keywords: Sports Intelligence Training, Image Processing Chip, Multimedia Fusion

1. INTRODUCTION

Combined with the current situation of physical education in colleges and universities, it is not difficult to find that there are some problems and defects in most of the physical training links in colleges and universities [1]. The physical education teaching in most colleges and universities still stays in the traditional teaching mode, and the teaching concept is deeply influenced by the backward concepts in the past, especially the lack of clear teaching and training goals in the process of physical training. With the introduction of science and technology into people's lives, students gradually Addicted to the Internet and lack of exercise in daily life, students often fail in physical fitness tests such as long-distance running and long jump [2].

Schools should gradually change the teaching status of lack of physical training, create activity space for students, allow students to do indoor and outdoor activities, and help students improve their physical fitness [3]. In recent years, with the rapid development of drone technology, the airborne photoelectric imaging system is used as a means of obtaining an important means of aerial imagery, more and more people's attention. The airborne photoelectric imaging platform is an optoelectronic reconnaissance device that integrates [4] high-precision sensor equipment such as visible light cameras, infrared thermal imagers, and laser rangefinders. "Image fusion" is a popular word in the field of image processing, so what is it? Image fusion? [5]

In short, image fusion is an information processing technology that processes multi-source image information to obtain improved new information. With the help of computer-aided design tools designers can build chip-level systems based on a variety of proven solutions [6]. The advantage of this design method is that the internal structure that the designer does not need to consider only needs to know how to use it, so as to focus more on the system-level design, which can be verified and reused to reduce the workload of the design. Increase design efficiency. The built-in high-performance dual-core ARM Mail400 3D GPU processes video, integrates a large number of video interfaces [7].

The audio interface supports multiple formats of audio and video input and output and integrates a high-speed peripheral interface MAC to complete the interaction with off-chip data [8] and supports a 32-bit wide DDR3 off-chip memory interface with a rate of 532MHz. Cultivating students with excellent professional ability and rapid thinking ability not only requires subject professional knowledge, but also needs to form their own physical education wisdom through continuous accumulation on the basis of theory and practice [9].

Physical education teachers should promote their transformation from traditional teaching to intelligent teachers in order to serve and teach better [10]. The content of training is single and poor, which directly affects the teaching quality and level of physical training in colleges and universities. However, through physical training innovation, we can get rid of the constraints and influence of traditional teaching methods, abandon some of the problems left by traditional teaching methods, and further improve the quality of training by innovating and changing training methods and content [11]. At present, the physical education courses in some schools tend to be more formal It is just that the reputation of physical education class is empty, but there is no trace of physical education class [12].

Most of the physical education classes are recruited by teachers of other subjects. Physical education classes can take Chinese classes and math classes, but not physical education classes. In some schools, there is only one physical education class per week [13]. When the airborne photoelectric imaging platform acquires the target image, it is affected by the design and adjustment of the photoelectric platform itself, the jitter of the drone, the refraction of the atmosphere and other factors, resulting in the performance of the target in the image [14]. The output position, direction, size, shape, etc. will be different, and these spatial differences will have a greater impact on the effect of image fusion [15].

Pixel-level image fusion is the most basic image fusion method and the basis of other high-level image fusion. According to the nature of the designed system, the integrated circuit design process can be divided into digital integrated circuit design process and analog integrated circuit design

process. Of course, in an actual system, it usually contains both digital and analog parts [16].

In 2018, NXP launched its latest integrated i.MX 6Dual/6Quad series of multimedia application processor SoCs. [3] The i.MX 6Dual/6Quad series of SoC processors address the growing needs of the automotive infotainment [17], telematics, HMI, and display-based cluster markets, providing high-performance processing capabilities with a high degree of functional integration.[18]

2. THE PROPOSED METHODOLOGY

2.1 The Image Processing Chip Fusion Multimedia

Aiming at the problems of poor contrast, low fusion accuracy, and noise interference of infrared and visible light fusion images of airborne optoelectronic platforms, this paper proposes a new dual-tree complex wavelet (DTCWT) domain combining visible and infrared image fusion methods with region segmentation. Before image fusion, the target original image needs to be pre-processed before fusion. This paper mainly focuses on the image fusion algorithm of infrared and visible light and needs to perform effective and fast operations such as excavation, denoising, and enhancement of infrared and visible light images respectively. In this section, the median filter of the image is implemented using.

The geometric raster unit mainly completes the following tasks: Clipping, cutting out vertices and polygons outside the view area, and back-face culling. Gridding. According to the project requirements, the SoC system circuit studied and designed in this paper, on the one hand, is mainly used for video image processing, and transmits inter-chip, inter-board, and remote data into the chip through a variety of high-speed peripheral interfaces. After the data is internally compressed, encoded and decoded inside the chip, the images captured by the visible light camera and the infrared imager are preprocessed and then transferred to the image fusion hardware platform. The link is transmitted to the ground station for scientific research personnel to perform target identification, landform observation and other work.

2.2 The Sports Wisdom Training Framework

In the process of innovation and development of college sports training, it is necessary to adhere to the principle of scientificity. In short, it is to ensure that the elements of innovation, such as content, methods, and goals, can adhere to the principle of science, in line with the development trend of contemporary physical education teaching and the needs of students' physical training. Demand. Good physical fitness is the foundation to support students' development. Students often need to sit for a long time when studying indoors.

This will have an impact on the physical health of students. Physical education class is the best time for students to relax and exercise. Sitting for a long time will cause a great burden on the cervical spine of students. In physical education class, teachers can help students stretch their bodies. "Internet + education" is different from the early education informatization. By grafting Internet channels in traditional education, education informatization is only a transfer of knowledge, and the form of education has not changed. Adhering to the principle of scientific is helpful for better development of innovation, ensuring the rationality and correctness of physical training innovation, and can demonstrate the significance and role of physical training innovation, so that the validity and reliability of training can be better improved., is fundamentally different from "Internet + education".

2.3 The Sports Intelligence Framework Based on Image Processing Chip Fusion Multimedia

Sports intelligence framework based on image processing chips and multimedia The innovation of sports training in colleges and universities is a systematic and complicated task, and it is difficult to achieve the expected results if it is carried out blindly. Physical teaching, like other subject teaching, also needs certain teaching aids to help Teachers improve the overall effectiveness of teaching. Therefore, the teaching resources of the school should be rich and diverse and should not be too single. For the physical education courses in the school, the school needs to introduce some modern auxiliary exercise equipment to provide students with a variety of choices. Therefore, it is necessary to build a systematic and sound management mechanism to ensure the effectiveness and rationality of innovation. The systematic principle requires that innovators be able to realize the design of sports training. In the process, the cores used can carry out strict timing control on each functional module of the algorithm to ensure the effective operation of the algorithm.

The operation of the fusion algorithm is performed using parallel processing and a large amount of logic resources. Effectively combine the above multiple system modules. The company is the industry's top embedded processor supplier and has a market share above embedded processor. Its business model is also a typical model in the industry, that is, it does not produce and sell chips, but only sells the authorization of chip technology. This thesis participates in the project design of a highly integrated SoC application processing chip based on ARM core. The SoC circuit requires both it can be used as a video codec controller or a traditional application processor, so it needs to integrate multimedia-related IP such as audio and video codec to complete the corresponding audio and video processing functions.

"Internet +" has brought great changes to the development of education. Not only is the teaching medium becoming more and more intelligent, but more importantly, education has become more humanistic. As the center, take the initiative to understand the personality differences of students, and advocate differentiated teaching and teaching students in accordance with their aptitude in terms of teaching methods and content. In the innovation process, problems must be discovered and solved in a timely manner. In the later evaluation stage, the fairness and justice of the evaluation must be ensured. In the final optimization process, the problems encountered, and the evaluation results must be combined to make up and optimize to ensure that the innovation results can meet expectations.

3. CONCLUSIONS

Through the analysis of the hardware fusion system, this paper does some research on the fusion preprocessing of the system, including infrared and visible light image preprocessing and image registration. The image preprocessing adopts the development and design method of the university. Education has always been widely concerned and valued by the society. Physical education, as one of the important links in quality teaching, deserves corresponding attention. Physical training plays an important role in cultivating college students' awareness and habit of exercising

and enhancing their physical quality, and innovation in the mode and content of physical training will help to further improve the overall level of physical training.

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