Overall Design of Intelligent Wardrobe System

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Abstract. Functional design of the smart wardrobe. At present, some online shopping has been able to achieve a simple virtual fitting, such as Taobao's fitting room, QQ show, fitting nets and so on. Dressing network also provides a show with features, providing a brand with Selfie with the fitting with three modules, but it is clear that the fitting network with the trial focus on the function of the show in the show, and the proposed fashion consultant Service is completely different.

Introduction

Smart wardrobe is not just a virtual fitting, but the integration of various types of resources on the basis of research, forming a holistic clothing product solution plan. By constructing a web portal, forming a targeted database of clothing portfolio (wardrobe), embedding clothing virtual fitting module, clothing dynamic display module, it will produce an intuitive, realistic clothing matching effects.

Thesis: System Components of the Smart Wardrobe

This design of the smart wardrobe mainly can achieve the following three aspects of the function. Intelligent wardrobe system design includes the following sub-module instructions:

"Data Analysis and Business Intelligence" - Subsystem, The system's Features Will Include:

1. Obtaining the encapsulated data and model from the distributed storage terminal to realize the data access and import with permission;
2. Achieving unstructured data processing and storage;
3. Achieving a wealth of statistical analysis, data mining and business intelligence algorithms and models, based on distributed computing platform, we can make data processing, basic statistics, advanced statistics and data mining;
4. Achieving data analysis results mapping and output based on web graphical interface;
5. Providing open API for user's own modeling and secondary development to achieve the integration of third-party plug-ins.

"Clothing Digital Try On" - Subsystem, The System's Features Will Include:

1. The data import and export of apparel 3-D data and texture images;
2. Scene model maintenance and management;
3. Data import and export of human body, face model and texture;
4. To achieve the human body model data and clothing data modification and maintenance through 3d data modification and maintenance;
5. A variety of graphics processing algorithms such as clothing, human body, face model and other 3-D data adaptation and merging to realize the virtual try-on function;
6. Rendering, transmission and storage of the 3d composite model in the scene;
7. To achieve open API interface, which is conducive to third-party application development;
8. The above functions due to web-based framework conducive to the development of Internet applications.
"Model Digital Capture and Management" - Subsystem, The System's Features Will Include:

1. To achieve interface, access to third-party 3-D scanning equipment, and to acquire scan data;
2. Implement a number of 3-D reconstruction algorithms as an aid;
3. To achieve the model file package according to a given standard;
4. The realization of local model file management system is conducive to the storage and distribution of model files;

VR Rendering - Subsystem, The System's Functions Will Include:

1. Develop and implement the interfaces, be access to third-party VR display equipment;
2. The transmission, storage and management of model data;
3. A number of 3-D scene rendering algorithms are implemented for rendering in 3D in VR environment;
4. Develop and realize the interface so as to achieve human-computer interaction;

Distributed Computing Platform, The System's Functions Will Include:

1. Based on the common application framework such as map-reduce & hadoop, it will realize the distributed version of the aforementioned algorithms such as data analysis, graph geometry calculation and so on, and then guarantee the cloud function of the system;
2. Develop interface to realize system deployment on the third-party cloud platform;

Data Encapsulation, Cloud Storage and Transport Management - Subsystem, The System's Functions Will Include:

1. Encapsulate, encrypt and package the data according to the standard of the file protocols such as the 3d scanning model and other data;
2. The realization of the cloud storage, transmission and management of model files will be based on the requirements of the third-party cloud storage platform;
3. The subsystem constitutes the basic platform of "smart wardrobe".

User Frontend - Subsystem, The System's Functions Will Include:

1. To achieve the local file import and export, maintenance and other management functions;
2. Local human-computer interaction interface will achieve the data maintenance and operation;
3. To achieve the results of the local try on and other 3D scene rendering results show;
4. The system needs to be achieved based on the PC side, mobile terminal and so on;

In the system it will integrate the analysis and forecast of fashion trends, fashion apparel, personalized wardrobe management (portfolio management) and other functions, so as to provide support for the enterprises’ product planning and e-commerce, but also to provide consumers with fashion guidance.

Intelligent wardrobe system is a collection system integrating trend analysis and forecasting, product design, product mix, intelligent clothing with recommendations, personalized wardrobe management. In addition to involving the three-dimensional virtual fitting technology, the portal development, technology embedding, data Interface and it has a relatively large workload, but also a relatively large research point. The establishment of a platform includes applying data center of the system data, making the application of the system users and businesses operate the system through the platform.

With the continuous development and improvement of information and technology, the integration into the 3D virtual clothing fitting-out system and the smart wardrobe with the latest and most authoritative fashion information will be a powerful tool for becoming a fashionable person and a brand enterprise. Smart wardrobe will provide consumers with a stylish, intuitive, personalized tidy wardrobe, so that consumers no longer have to worry about wearing on different occasions. Intelligent wardrobe provides popular information, virtual fitting, costumes with design, brand apparel business planning and marketing, especially network marketing can provide an intuitive portal to promote apparel sales and branding. Intelligent closet line closet consultants
provide personal clothing image design services for high-end users and it has a certain market potential.

**Personalized Clothing Network Custom Research**

With the further development of high technology and the overall improvement of the apparel industry, the design of smart wardrobes can also be supplemented with personalized virtual models. By borrowing the human body motion capturing system, the virtual models show a variety of "master" habits: sexual movements and temperament, make dress more personal. At the same time, it can be added to automatically predict a user's favorite mode, automatically recommend a simple pattern, greatly reducing the cost of artificial designers.

With the rapid development of modern society and production technology, people are more and more demanding for product personalization and fashion. They are no longer satisfied with the basic material functions of commodities, but pay more and more attention to their cultural connotations and consumption process spiritual enjoyment and aesthetic pleasure. Therefore, the design of modern clothing has gradually evolved into the development of fashion and creative products, becoming an important branch of the modern creative industry. Changes in fashion trends make apparel design, production and sales cycle significantly shortened, leading to the escalation of modern garment manufacturing technology, digital information technology and digital computer technology have penetrated into all aspects of textile and garment production.

Conform to this trend of development, personalized clothing network making will become a research hotspot clothing fashion product development field. This research aims at the digital design of garment products and the demand of advanced manufacturing technology. It integrates high-tech such as image digital processing technology, computer technology and information fusion technology into fashion design and engineering. It mainly studies the information resource management of fashion creative product design and development, digital design, simulation integration system and other content, so as to build a fashion clothing product design and advanced manufacturing technology knowledge platform. By personalized clothing customization system we can achieve the whole process of clothing network custom data driven.

After twenty or thirty years of development, the field of digital clothing products mature, such as garment CAD design, plate making, and even product life cycle management software has been gradually widely used, and all kinds of intelligent manufacturing equipment, such as flexible hanging system, automatic cutting beds, etc. have also become more and more popular in garment enterprises. However, the customization of personalized clothing networks requires that these systems must be organically integrated and system operated, and currently no mature technology can be realized. Personalized clothing network customization, based on big data, achieves the tailor making, also needs massive data support. For example, in the process of plate making, after inputting the body size data, CAD will automatically match the most suitable body version, and in the course of CAD pattern change, a data change will cause changes in other parts of the body. Therefore, the massive data analysis and mining, the establishment of human size and template matching data model, design matching principle is the key to study.

For example, product recommendation system is a very important way of competition of the e-commerce business. In situations with more rich data, product-recommended analytics will be more accurate. When we go to Amazon and Dangdang microblogging, to buy us a commodity, we will see and continue to be recommended by the system to us. According to this data, more than a third of revenue of the Amazon will come from the recommendation system.

**Summary**

You can use big data to analyze the sales volume of various apparel materials, analyze social network data to get popular quarterly materials and to predict the market trend. Many hot topics in the online community often precede the release of some trend forecast agencies and you can use big data to make an environmental analysis. For example, if you find that logistics and capital flows are well controlled during your business, sales are declining, it may be related to the environment. At
this time, we need to analyze the environment knowing whether it is the price reducing by the competitors that takes away our sales or the weather, or some information on the social network which has led to changes in our external environment. Environmental analysis can effectively discover the external business environment. In addition, through the collection of customer evaluation data we can improve the user experience based on the product design and improvement presented by the consumers.

References


