FAKE REVIEW RECOGNITION SOFTWARE

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Introduction

Fake detection is a software that help users **identify fake reviews** within seconds when people shop online using **artificial intelligence** based on analytics database.

Background

When you are shopping online …

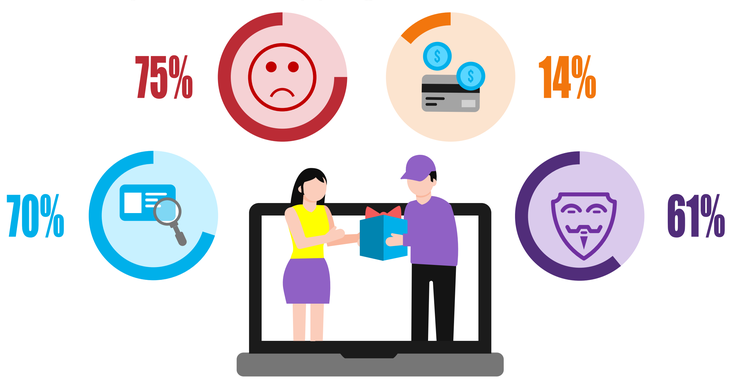


Figure 1. Some statics on online shopping

- 70% of US consumers read reviews before buying online (Ben Fisher,2018).
- 75% of consumers have read a fake review in 2018 (Ben Fisher,2018).
- 11%-14% companies pay for online reviews.(Elizabeth Dwoskin, Craig Timberg, 2018)
- 61% of electronics reviews on Amazon are 'fake' (Greg Sterling,2018).
- Americans waste about $5.5 billion on gift shopping because of fake reviews on 2012 Christmas(Migs Bassig, 2012).
- For some popular product categories on Amazon, the vast majority of reviews appear to violate Amazon's prohibition on paid reviews.
- The fake reviews made by the Internet Water Army are flooding the Internet.

Features

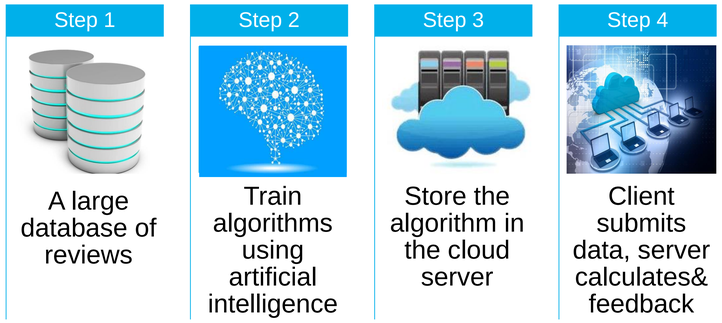
- **Accurate fake reviews recognition :** Our software can detect and recognize fake reviews when people shop online. Based on the large database reviews, we used a machine learning method to train an artificial intelligence algorithm to recognize fake reviews. This software can also evaluate the credit of online stores by judging whether an online store hires the Water Army.
- **Multi-platform** : Our software can be used on multiple platforms including **mobile phones, tablets and personal computers.** There are also software and browser plug-in versions available on your PC.

Figure 2. Software on multiple platforms

- **Based on analytics database and machine learning :** We use advanced technologies such as analytics database and machine learning as technical support to detect the fake reviews.

- **More personalized features:** We provide users with a variety of personalized features. Users can choose:
  - ➢ Whether to block false reviews
  - ➢ Detect every review or evaluate the credibility of online stores
  - ➢ Whether to block reviews from users who have posted fake reviews
  - ➢ Different shielding strength

Simplified technical route



Software Interface

Figure 3. User interface in apps

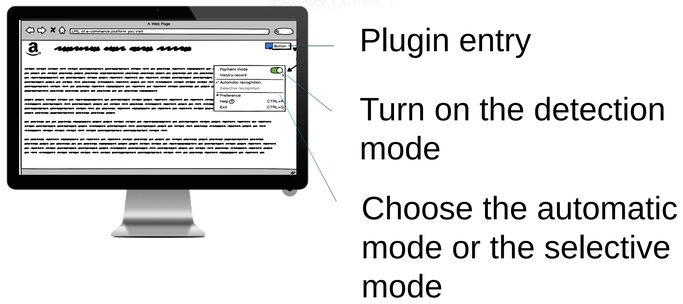


Figure 4. User interface in browsers

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2.Dwoskin, E. and Timberg, C., 2018. How merchants use Facebook to flood Amazon with fake reviews. The Washington Post, 23 April 2018. p.10.
3.MarketingLand. 2018. Study finds 61 percent of electronics reviews on Amazon are 'fake'. [ONLINE] Available from: https://marketingland.com/study-finds-61-percent-of-electronics-reviews-on-amazon-are-fake-254055. [Accessed 2 April 2019].

Intelligent Logistics Robot for Terminal Distribution

GROUP 36
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Abstract

Through comprehensive market research and risk assessment, our team put forward the concept of intelligent logistics distribution robot as a new product.

The emergence of intelligent logistics distribution robot not only reduces the increasing cost of manual distribution, but also effectively improves the efficiency of logistics distribution and meets the needs of e-commerce platform.

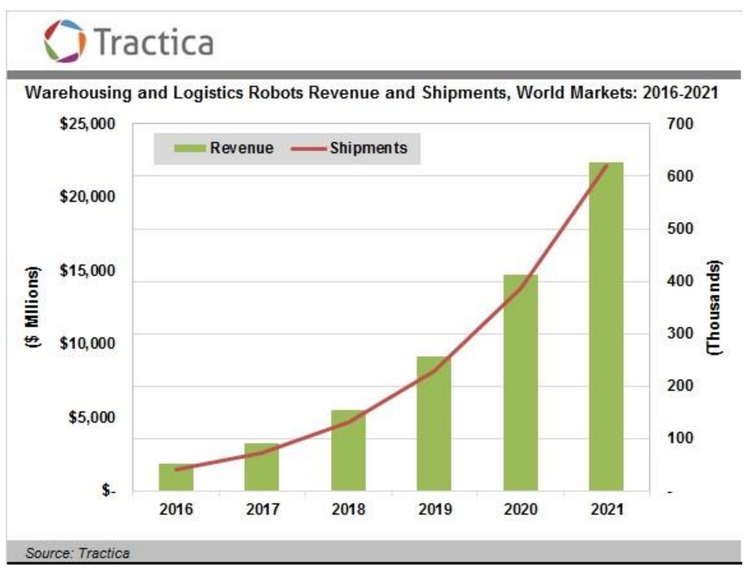

Figure 1. The Trend of Logistics Robot Market

Background information

In recent years, the traditional logistics industry model can not match the rapid development of e-commerce business model. The existing distribution robot market continues to grow rapidly and is expected to reach $20,000 by 2021(Tractica survey, 2017).

Figure 2. Concept mappings

Discussion

Logistics distribution robots have many difficulties in engineering technology. Our team's product concept is based on the development prospects of existing technology.

A successful robot terminal distribution needs to meet the expectations of time, safety and utility, and has the functions of intelligent identification, automatic driving and battery life.

Figure 2 (see above) shows two product concept maps in the. The main difference between them is the energy utilization and mechanical operation. The similarity lies in the interaction between 5G and cloud computing and data center to continue path judgment and intelligent identification.

The first concept map shows the box robot. One delivery of limited size express packages.

The second concept map shows wheeled robots. It is possible to transport express packages of varying sizes in collaboration with other robots.

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Dot points

For automatic driving, our team's product concept relies on cloud computing. Through the image information transmitted by the robot itself and the road camera, the intelligent trained cloud gives path instructions, and records and stores them for future use by the robot.This is similar to existing warehouse robots(Geek+, 2019), except that the path is not well designed.

Figure 3. Some intelligent logistics distribution robot

Conclusion

At present, the growth of logistics market can not be ignored. Although the commercialization of distribution robots is still difficult, some conceptual products have been proposed and are being commercialized.

On the one hand, our products have unique features, such as the flexibility of automatic obstacle avoidance, two-dimensional code path recognition. On the other hand, the development of virtual reality, artificial intelligence and other technologies will make the industry enter a new round of equipment upgrading.

References

[1] Tractica survey(2017). Retrieved April 13, 2019, from https://www.tractica.com/newsroom/press-releases/warehousing-and-logistics-robot-shipments-will-reach-620000-units-annually-by-2021/

[2] Geek+(2019). Retrieved April 12, 2019, from http://www.geekplusrobotics.com/

Shared reality communication devices

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The powerful features of devices

As a 3D web conference product, we are striving to display the features of high efficiency, convenience and "reality". Under our unremitting efforts, our team design the shared reality products with the following four new concepts Fig.1 shows how the devices work.

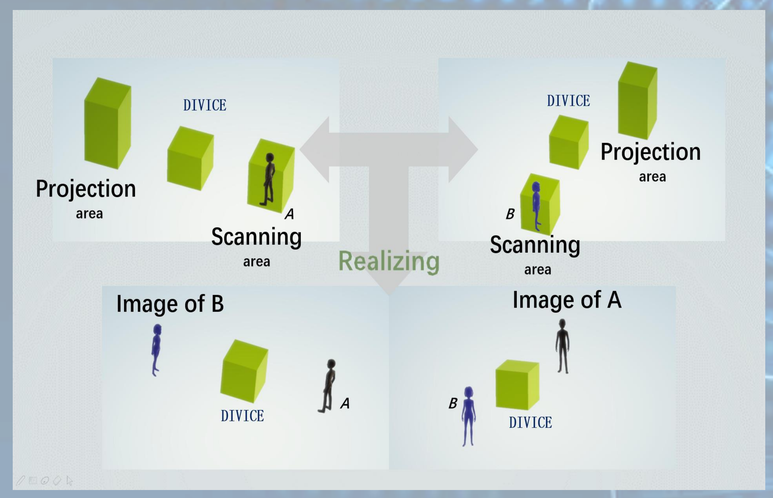

Figure 1. Model of share reality communication devices

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High-quality 3D human figures' construction

This technology can enhance the realistic feeling of 3D projection. It has several functions to achieve this such as eye contact and gaze-tracking, voice-amplifier and noise-elimination, and multi-view displays. Fig.2 shows the ideal case with the function.

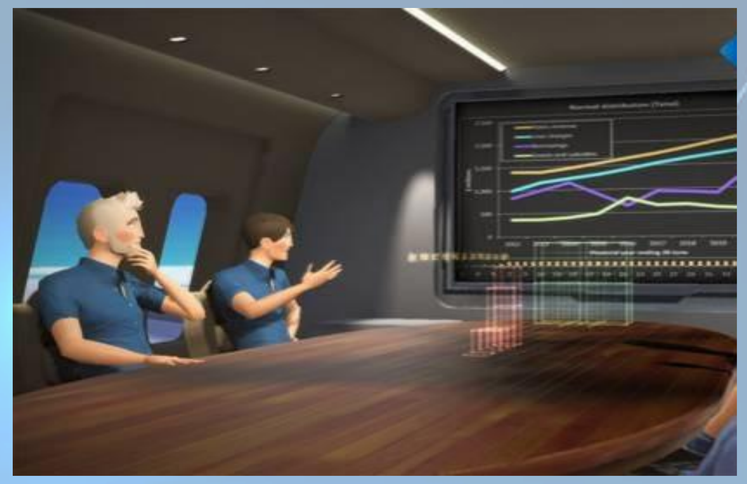

Figure 2. Product concept: high quality 3D projection function

Multiparty data processing platform

This function allows people to process and manipulate the same file at different terminals at the same time. It greatly improves the efficiency of document processing during meetings by simplifying the interacting process (Nilsson, S., Johansson, B. and Jonsson,2009). Fig.3 shows the shared-files functions which can be realized by the platform.

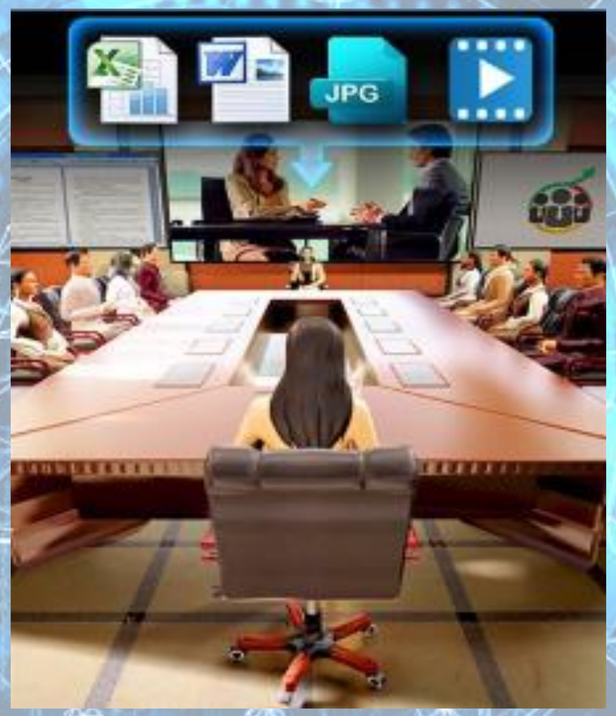

Figure 3. Share files in meetings by using the multiparty data processing platform function.

Figure 4. Tangible interface which can recognize humans gesture and deal with it.

Tangible personal interfaces

The product concept allows for individuality that at each sites the viewers can independently have meeting-related data files tailored to his/her needs. So we can freely decide the physical layout and state of the virtual content such as scaling and shifting with the hand-posture recognition system. Fig.4 shows how the function works. User can manipulate and covey the data by their hand's movements.

Instructional visual aids

This product concept offers instructional visual aids for users in its interface to locate the exact work-pieces in mobile disassembly tasks, such as annotations and context-sensitive help (E. Prytz, S. Nilsson, A. Jönsson, 2010). Fig.5 shows the ideal circumstance while using the product.

Figure 5. Instructional visual aids for people to have a better understanding of what instructor shows in the statistics and diagram

References

1. Nilsson, S., Johansson, B. and Jonsson "Using AR to support cross-organisational collaboration in dynamic tasks" International Symposium on Mixed and Augmented Reality 2009
2. E. Prytz, S. Nilsson, A. Jönsson, "The importance of eye-contact for collaboration in AR system" International Symposium on Mixed and Augmented Reality 2010

Wearable Smart Mask

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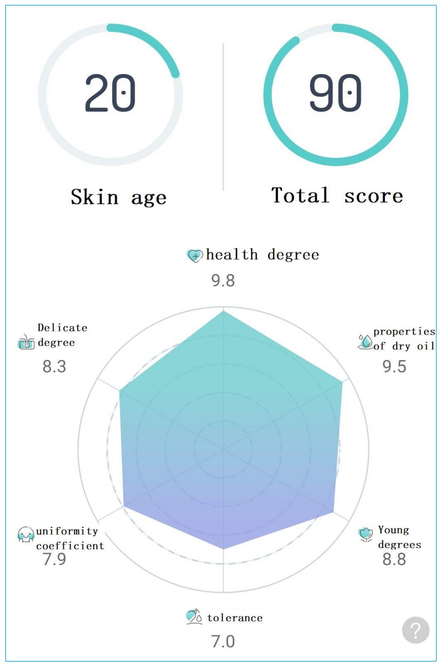
Introduction

The high speed of the technological developments leads to rapid pace of modern people. Our team proposes a new product concept called “Wearable Smart Mask” which can improve the modern people’s quality of life by helping you make up, skin care, clean and so on automatically and it can also let you know your facial skin condition immediately as well as giving you wise suggestions through the application in your mobile phone.

Function A. Face Detection

The “Wearable Smart Mask” check the skin dry degree, oil degree, scars, dark spots, acne, pore size, black head, skin age and other elements automatically. Wearable Smart Mask determines quickly the user's skin quality and generates reports, which are sent to the Wearable phone with details. Users can see their skin ratings, skin ages and skin tone ratings on the bundled phone.



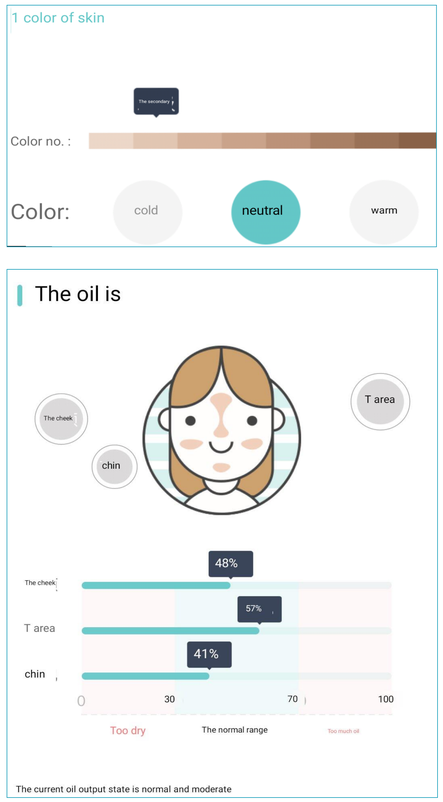


Fig.1 product concept feedback to the user's skin quality score.

Fig.2 product concept map

Function B. A Quick Facial Cleanser

According to the skin conditions detected in the first step, user can choose washing face, skin lotion, lotion, cream and sunscreen. This step focuses on the user's dry skin and pore size, in order to choose the right amount of skin care products.

Function C. Personalized Makeup Function

Wearable Smart Mask can quickly scan the face of the user, and quickly makeup on the basis of its facial features. Mainly adapt to the user's eyebrow and lip shape.

Function D. Send Tweets

Wearable Smart Mask recommends skin care and makeup products based on the skin characteristics of users. The content sent by category includes: introduction of the product, matching degree with users' skin quality, etc.

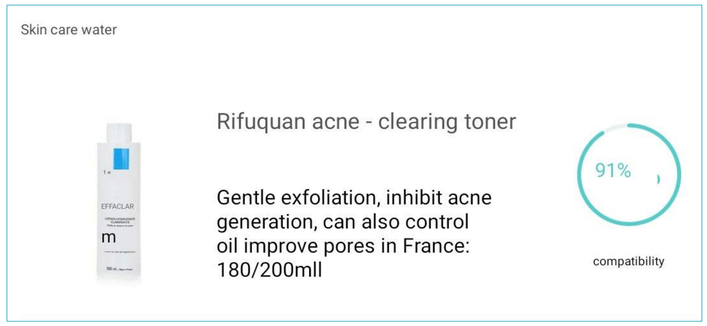


Fig.3 The product concept recommendation interface

Mission Statement

Our target market is customers with daily skin care needs and time constraints. Our business goal is to occupy the intelligent beauty market.

Our market expectations

At the initial stage of the product concept launch, our sales expectation was 1 million.

Conclusion

Our new product concept is a smart mask with precise skin care and make-up function aimed at saving time. In the dual demand of saving time and fast skin care, "Wearable Smart Mask" as a brand new product concept can quickly occupy this part of the market share.

Smart Earphones with AI Translation

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Group 69

I. Introduction

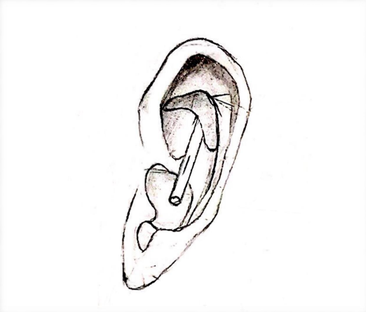

Figure 1. Concept Map

Semi-in-ear smart head-phone with AI translation function, which use the inner ear hanging structure, equipped with charging case and have IP34 waterproof and dustproof function.

II. Product Key Concept

1.AI Translation

With Automatic language recognition. In actual use, when the user talks to someone who uses other languages, our headset will translate and express the other person's words in the user's native language through the built-in voice assistant.

2.Endurance

The battery life of the Bluetooth headset is the most important performance of the customer, and it can be solves from both the headset and the charging case. You can also choose a large capacity battery or customize it.

3.Appearance

A. Model

The easy drop of headsets is a common problem. Our team has proposed a new solution - the inner ear hanging structure. By adding headphones to expand the skeleton, to adapt to the human auricle structure, while using silica gel material, to achieve better fit and anti-shedding.

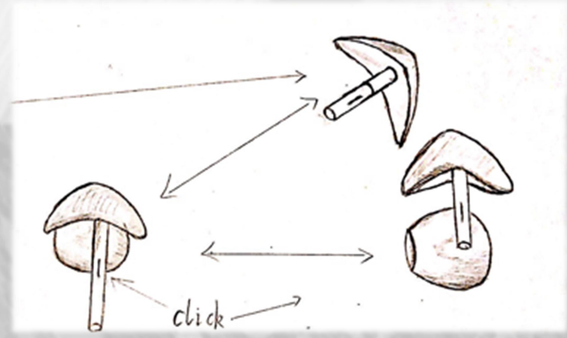

Figure 2. Appearance

B. Design

In order to meet the customer's requirements for the colour of the product as simple as possible, our products are only black and white, simple and elegant, or with the combination of dark gold and bright silver, low-key luxury.

III. Conclusion

First, we take many measures to select smart headsets market for voice interaction.

Second, we choose business people and technological enthusiasts as target customers. And their requirements are concentrated in appearance, technology and sound quality. Appearance and technology are core issues.

Finally, we initially generated more than twenty concepts. Through screening, our final concept is semi-in-ear smart headphones with AI translation function, which use the inner ear hanging structure, equipped with charging case and have IP34 waterproof and dust-proof function.

Reference

Crazy learning English.(2018).Ten translation skills which could be mastered quickly.[online]Available from:http://m.sohu.com/a/253310971_151250

Intelligent guide rod

—— for blind people

System installation

We will use a concept tree to show the advantages in the intelligent guide rod.

Storage of energy -- Rechargeable battery

The walking stick is the object which moves at any time, moreover the walking stick is light, may carry. We determine the rechargeable battery as the energy source.

Material -- Carbon fiber

Carbon fiber is of moderate price, high strength, good fatigue resistance and corrosion resistance.

The plastic is easy to be damaged and the material is not elastic enough to protect the electronic devices. The price of alloy material is too expensive.

Detector -- Ultrasonic

Ultrasonic has good anti-interference and moderate propagation distance.

Lidar is very expensive and large in size. The anti-interference of the infrared detection accuracy is too poor and the detection distance is very short.

Transmission – Bluetooth and Vibration

It is easy to fail to broadcast in a noisy environment. Bluetooth headsets are easy to use, just need regular charging.

In terms of voice transmission, it is easy to fail to broadcast in a noisy environment. Wired earphones will affect the use of users' products, especially for the users with poor vision.

If the sound command is not very clear in the noisy state of the surrounding environment, we decided to add vibration mode to feedback whether there are obstacles around. Obstacles within a meter will cause three indirect vibrations of the rod, and the closer the distance, the shorter the interval.

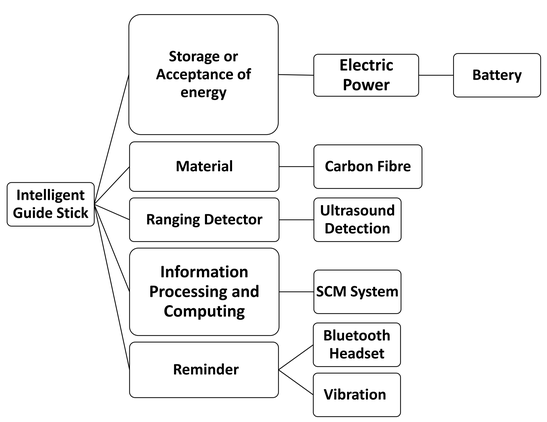

Chart 1. The general concept classification tree of the intelligent guide rod

Introduction

For most normal people, life is so wonderful because the world is colorful and different things can be seen every day. But those with visual impairment can not appreciate this beauty, because the world in their eyes is just endless darkness. The existing traditional guide tools can actually provide some help for the life of the blind, but these tools still have greater inconvenience and security risks.
In this product development, we want to design an intelligent guide rod that can actively feedback the obstacles ahead to users. Help the blind to live like ordinary people.

The following is the product concept map:

Figure 1. The product concept map

Appearance Design

Our team brainstorms the shape of the guide rod. This shape of the intelligent guide rod is more conducive to helping blind people use it.

Anti-wear rubber

As for the specific shape and material of the guide rod, we believe that anti-wear rubber is added at the bottom, and a camera is added on the rod body to identify traffic lights and assist detection.

Non-slip rubber

For the guide rod handle, we designed a non-slip rubber on the side of the handle, which is fixed on both sides of the handle to prevent release and enhance the touch sense of the blind so as to better find the position of the handle.

Reference

[1] Jin Tan.11-13 Aug.2012. Development of Ultrasonic Equipment Using Microcontrollers. *2012 International Conference on Computer Science and Service System.*
[2] Li Xuehai. Practical tutorials PIC microcontroller [M]. Beijing: Beijing University of Aeronautics and Astronautics Press, 2002. 151-169.

System Design

From the previous survey, we summarized the following problems of blind people with existing products:

Blind people don't want to bump into people or objects while walking.

Blind people can't see the road which will go awry or even fall.

Walking sticks are too tactile and smooth to hold.

The main problem we are studying now is how to transmit the risk factors in the surrounding environment to the blind through voice broadcasting. Meanwhile, our team also considers the convenience and usability of the product. Since the main problem is relatively complex, we divide it into the following key sub-problems:

The main sending detection device detects the objects in front of it.

Auxiliary detection devices supplement and confirm the detection of main devices.

The information processor processes the detection information and obtains the position of the obstacle.

Using voice broadcast to remind users.

Figure 2. overall black-box

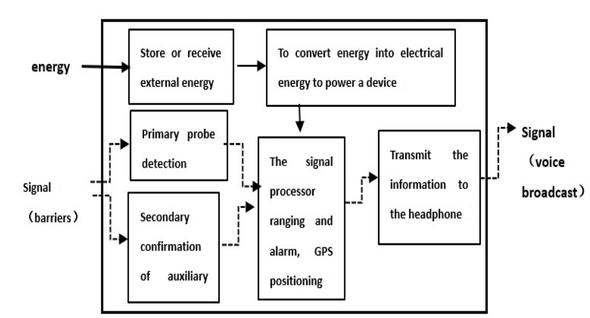

Figure 3. Displays a detailed diagram of sub-functions

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ARLAB Box: A Novel Experiment Simulator

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The Product Idea on AR Lab Imitation Platform

A. Develop a box platform named ARLAB for group and individual experiments imitation.

B. Utilize in AR simulative technology, optical motion capture and high speed 5G net-work.

C. Support intellective interactions among users.

D. As figure 1, AR product has brighter market potential.

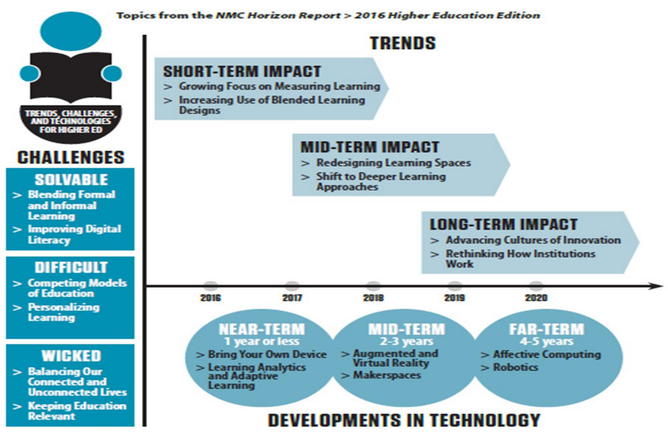

Figure 1. The development trend of AR product .

ARLAB Concept Realization on Lab Imitation

As figure 2 shows, our product concept allows users to operate virtual lab equipment to accomplish experiments. The user performs series of experiments by manipulating virtual-experimental instruments. Furthermore, user's interaction with virtual-test equipment has been realized by AR technology.

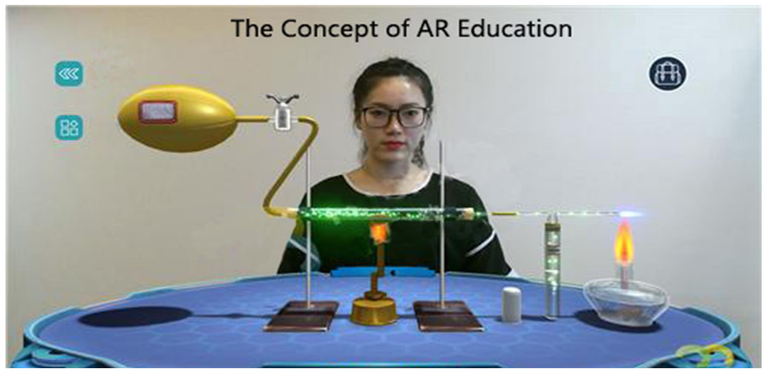

Figure 2. The concept of AR education products.

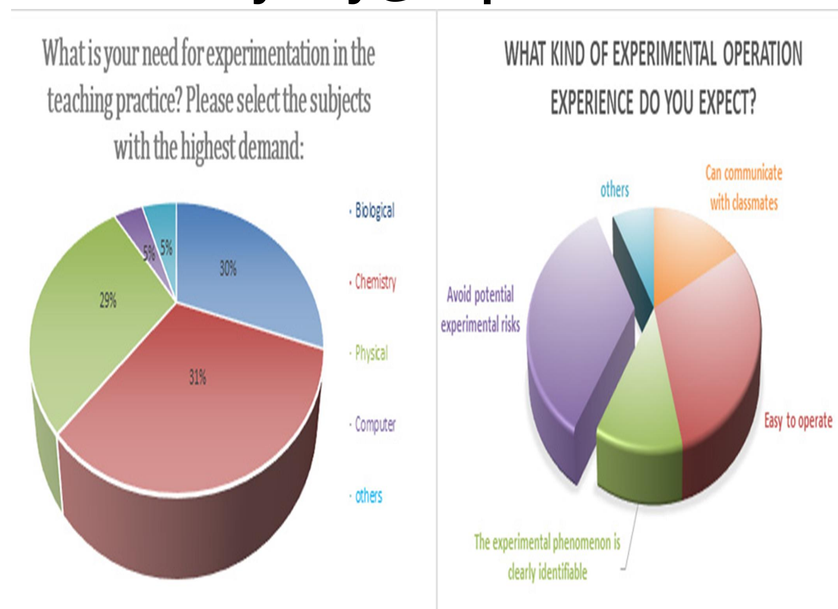

Figure 3. The proportion of customers' need .

Customers' need Identification

A. Chemistry is required to the highest demand on experiment imitation.

B. Avoid potential experimental risks.

C. Instant communication with classmates

D. Simple and convenient operation

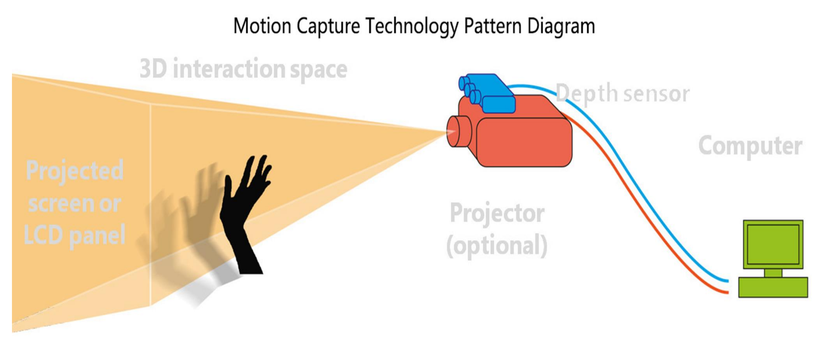

Figure 4. Optical motion capture technology schema.

The Core Technology of ARLAB BOX: Optical Motion Capture

As figure 4 shows, our team decided to adopt optical motion capture technology. The camera transmits the human motion to the central processor, letting the computer know the person's location.

Figure 5. The appearance of the final product.

ARLAB Box appearance and function description

ARLAB Box Appearance:

A box platform with LCD screen applied with USB, blue-tooth interaction.

ARLAB Box Function Description:

A. Support varied experiments by group

B. Instant teachers' instructions

C. Maintain the security of experiments

D. Contain various experiments applied with specific knowledge

Conclusion

ARLAB Box can simulate real experiments by using AR algorithm and optical motion capture technology to solve the shortage instrument problem.

References

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2. Ubi Interactive(2014). Ubi Interactive: Turn any surface into a touch screen. Retrieved April 2, 2019, from https://www.youtube.com/watch?v=Iu2XH5p_hMM

Auxiliary Exoskeleton: Walk Easily and Live Healthily

Auxiliary Exoskeleton

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Product description

The Auxiliary Exoskeleton is a newly developed product of our team to assist users in walking. It is light and durable, equipped with the most advanced communication technology and efficient and safe battery. In assisting walking, we use state-of-the-art technology to achieve the perfect match of the power unit of the product to the complex walking movements of humans. Our products also use a number of high-precision sensors that help detect vital signs and accurately and timely perform what users want.

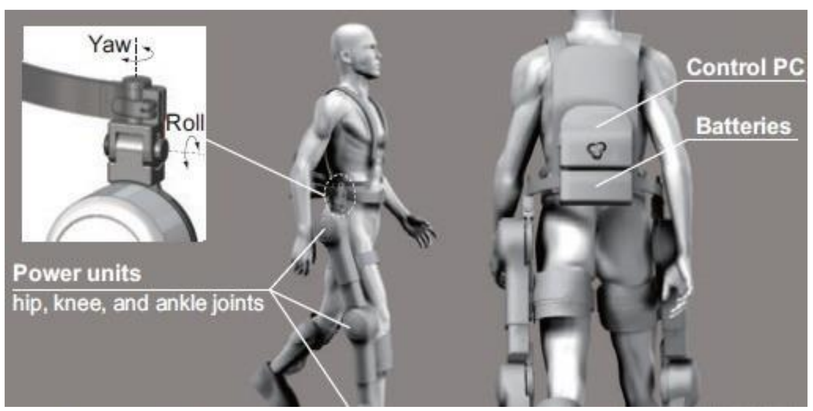

Figure 1. Auxiliary Exoskeleton design

Help the user walk again

In the power single use, we use carbon fiber as the skeleton, the joint uses the alloy, and the hydraulically driven skeleton completes the walking action. The ergonomic design ensures the comfort of the user, and the high-precision sensors covered around the skeleton ensure the consistency of the mechanical movements with the user. Whether you are a person with a disability or an elderly person, as long as you are walking inconvenient, come and use our new products to help you walk freely.

Walk for a whole day after charging for two hours

We have designed a new high performance battery for the new product. It charges fast and has a large capacitance. Its excellent energy conversion minimizes the daily cost of auxiliary exoskeleton. The battery is placed on the back and the weight is taken by the exoskeleton.

Figure 2. Auxiliary Exoskeleton back battery design.

Figure 3. Auxiliary Exoskeleton movement unit.

Your private health management center

We use motion sensors and biosensors to collect users' data and monitor their vital signs.A large number of high-precision sensors collect your vital signs such as blood pressure, respiratory rate, heart rate, body temperature, etc. during use. These data are transmitted to the data center through the network, and users can see their vital signs data and reports when they log in to their ID.

Figure 4. Sensors on the skeleton.

Best bridge between doctors and users

When our product collects a user's vital signs data, a data report can be automatically generated in the data center, and the user can choose to upload a report to their attending doctor. The doctor can grasp the user's recovery and give medical advice at any time. And users can also better understand the process of our products helping them recover through data.

Smart Reading Glasses

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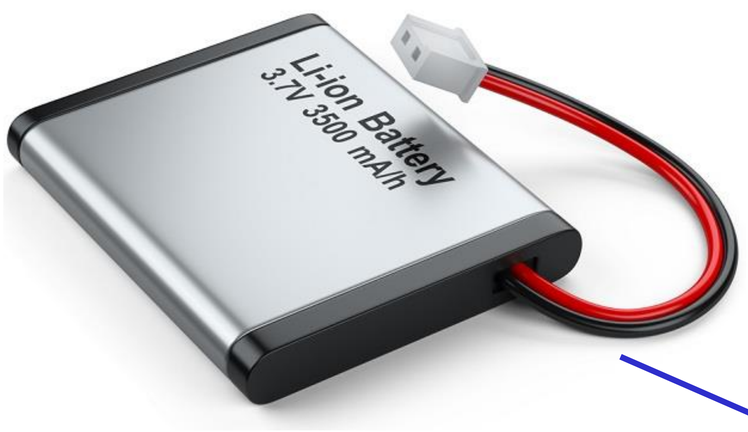

Figure 1. Example of Lithium Battery

Power Supply – Lithium Battery

Lithium Battery's power consumption under working condition does not exceed 2% per hour of the total power and the battery loss per year does not exceed 4%(ELE Times, 2019).

Meeting the customers' demand for ultra-long electric quantity and the long service life.

Figure 2. Infrared Induction Controllers

Control Mode – Infrared Induction

Infrared induction controller make the customers complete the conversion, selection and other operations with simple hand movements, which helps to eliminate the limitations of time and space. Our product aims to meet the needs of customers for fast, convenient and sensitive operation.

Product Reviews

Smart reading glasses are designed for establishing intelligent reading mode which aims to free reader's hands and create a better reading experience.

The target customers of the product are ALL people who love reading such as students and the elders, casual readers and the lovers of wearable device.

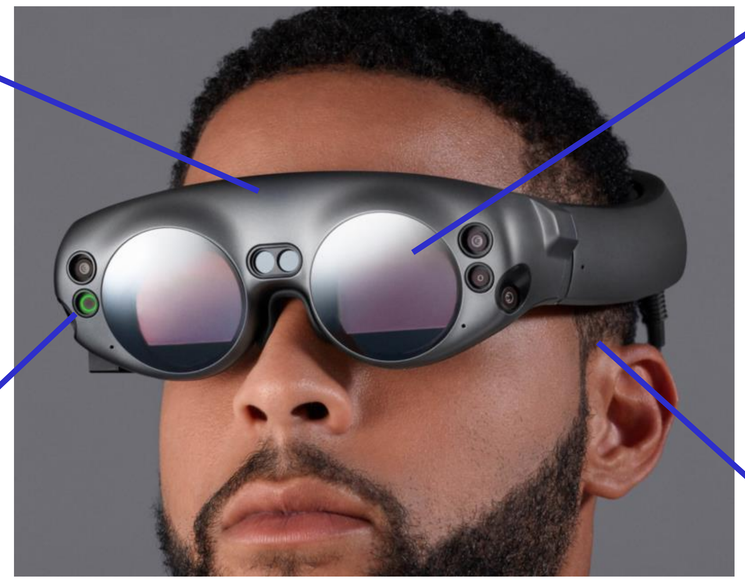

Figure 5. Ideal Product Model.

Smart reading glasses are committed to providing users with better reading experience, so as to improve people's interest in reading, improve people's reading quality, and ultimately improve the overall reading level of the society, and help the country enter a new era of reading. The user only need to wear the smart reading glasses. After that, they may get access to the reading space freeing hands and protecting their hands.

There are four key components in our product: power supply, control mode, data transmission, and display.

References

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Figure 3. Color Ink Screen

Display – Color Ink Screen with Optical Projection

Optimizing the reading experience of customers, expanding the reading field and basically making the customers' eyes without discomfort in the case of continuous use for 3 hours, meeting the needs for customers to protect their eyes.

Figure 4. "Wi-Fi + Bluetooth + USB" Module with Android OS

Data Transmission — Wi-Fi, Bluetooth and USB with Android OS

Realizing the connection between glasses and the Internet through Wi-Fi, basically ensuring the network speed for 128 MB/s and realizing the data sharing between glasses and other intelligent products through Bluetooth and USB integrated in Android OS for meeting the needs of customers for quick access to a variety of information.