

Hi, here I am!

I'm Joyce  
and this is my story...

“

I am designing.  
Designing for better use,  
designing for a better world,  
and thinking outside of the box,  
small changes may change the world



**Nannan Lu**

Human Robot  
Interaction Designer

**MAJOR** Industrial design

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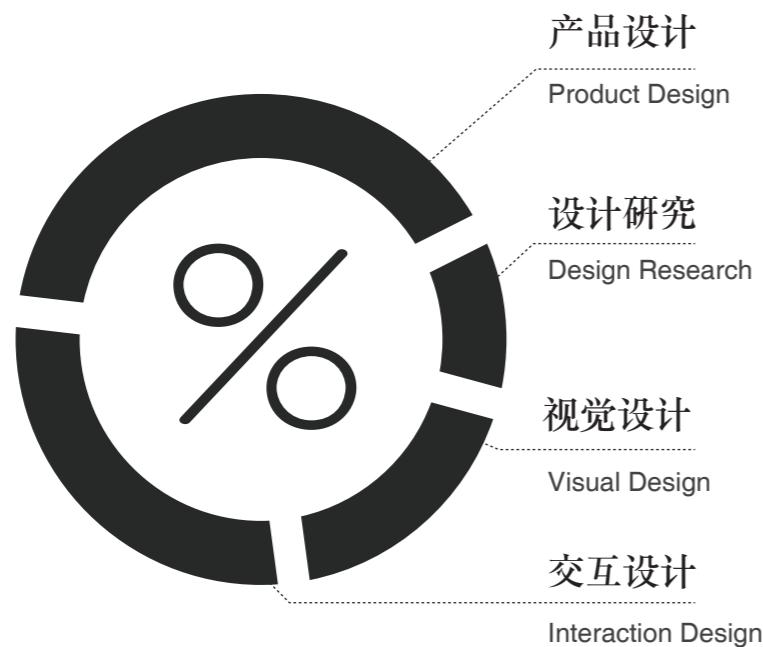
**SCHOOL** Zhejiang University ( Bachelor & Master )

**SPECIALITY** Concept Rising + Concept Outputting

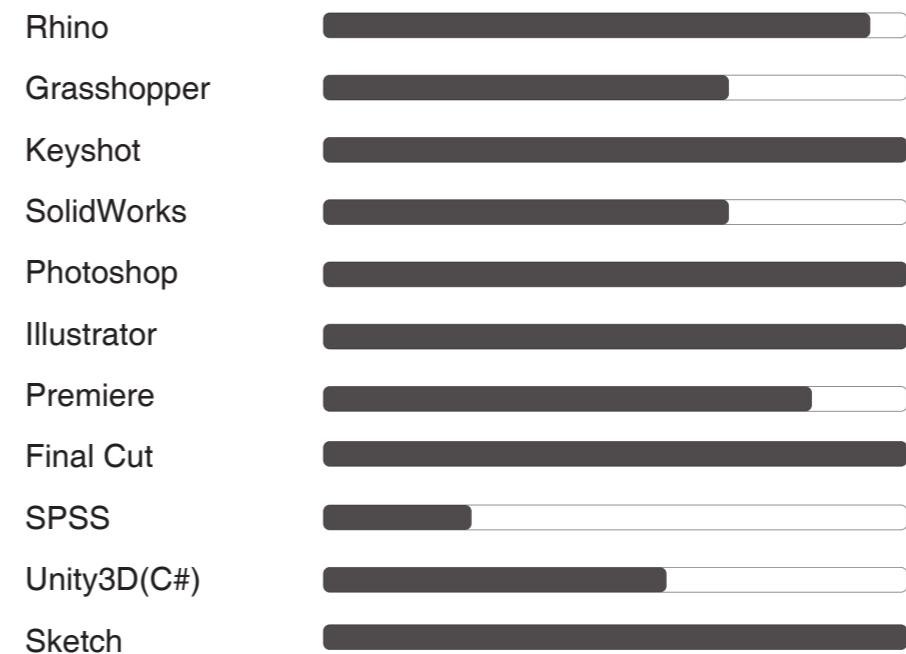
EXPERIENCE	<p>2013 3months ID Intern Feish Design, Inc., Hangzhou      2013 6months UI Parttime Yunmake Technology, Inc., Hangzhou      2014 1month UI Intern Alibaba, Hangzhou      2016 6month ID Intern Microsoft Research Asia, Beijing</p>																					
	<p>2013 Exchange student - University of SUTD &amp; Zhejiang University      2014 Exchange student - University of Navarra in Spain      2015 Exchange student - Southern Taiwan University of Technology</p>																					
	<p>In school, I received more than 20 awards in domestic and international industrial design competitions. International awards are as follows:</p>																					
AWARDS	<table border="0"> <tr> <td data-bbox="845 578 936 620">2013</td><td data-bbox="1127 578 1969 620">Winner, Red Dot design concept award:best of best</td><td data-bbox="2039 665 2182 706" style="vertical-align: top;">Stablow</td></tr> <tr> <td data-bbox="845 629 936 671">2013</td><td data-bbox="1127 629 1969 671">Winner, Red Dot design concept award:best of best</td><td data-bbox="2039 715 2334 757" style="vertical-align: top;">Truly Touch-Type</td></tr> <tr> <td data-bbox="845 680 936 722">2013</td><td data-bbox="1127 680 1787 722">Winner, Red Dot design concept award</td><td data-bbox="2039 766 2252 808" style="vertical-align: top;">Double Warm</td></tr> <tr> <td data-bbox="845 731 936 757">2014</td><td data-bbox="1127 731 1574 757">Winner, iF concept award</td><td data-bbox="2039 817 2267 859" style="vertical-align: top;">Bamboo Light</td></tr> <tr> <td data-bbox="845 777 936 803">2014</td><td data-bbox="1127 777 1757 803">Finalist, Young Asian Designers award</td><td data-bbox="2039 868 2267 894" style="vertical-align: top;">Timing Pill Jar</td></tr> <tr> <td data-bbox="845 828 936 854">2014</td><td data-bbox="1127 828 1787 854">Winner, Red Dot design concept award</td><td></td></tr> <tr> <td data-bbox="845 865 936 891">2015</td><td data-bbox="1127 865 1787 891">Winner, Red Dot design concept award</td><td></td></tr> </table>	2013	Winner, Red Dot design concept award:best of best	Stablow	2013	Winner, Red Dot design concept award:best of best	Truly Touch-Type	2013	Winner, Red Dot design concept award	Double Warm	2014	Winner, iF concept award	Bamboo Light	2014	Finalist, Young Asian Designers award	Timing Pill Jar	2014	Winner, Red Dot design concept award		2015	Winner, Red Dot design concept award	
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	<p>During my undergraduate period, I obtained academic scholarships several times, and graduated as an outstanding graduate. After school, I was active in the entrepreneurial team. Our team has been recognized as follows:</p>																					
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## — professional skills — 专业能力



## — software skills — 软件能力





— 产 品 概 念 —  
Design Concept

Start with small changes, Team Work

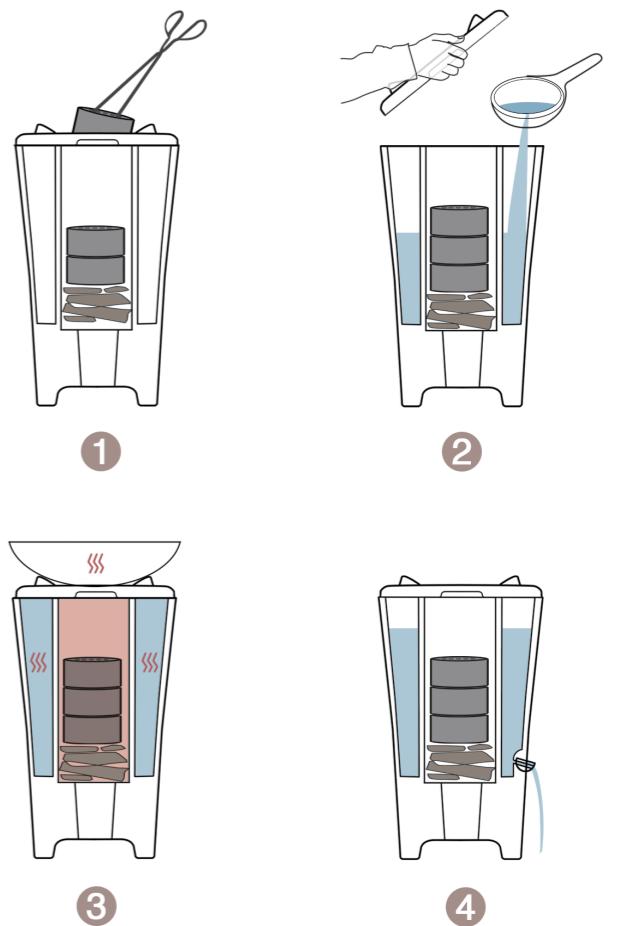
## Double Warm

Team Leader

在中国农村大量使用着传统煤炉，每年消耗着很多未清洁煤炭。DOUBLE WARM是一个能够双向加热的煤炉，在烧热炉灶的同时，加热在煤炉隔板中的水，用以餐后的餐具清洁。

Double Warm is a multi-functional and eco-friendly coalstove. There is a water-store layer around the furnace.

By this special design, people can boil water while cooking. The extra heat is put to full use. It improves the energy efficiency and conveys the philosophy of making the best use of everything. Additionally, it helps the poor save money and time.



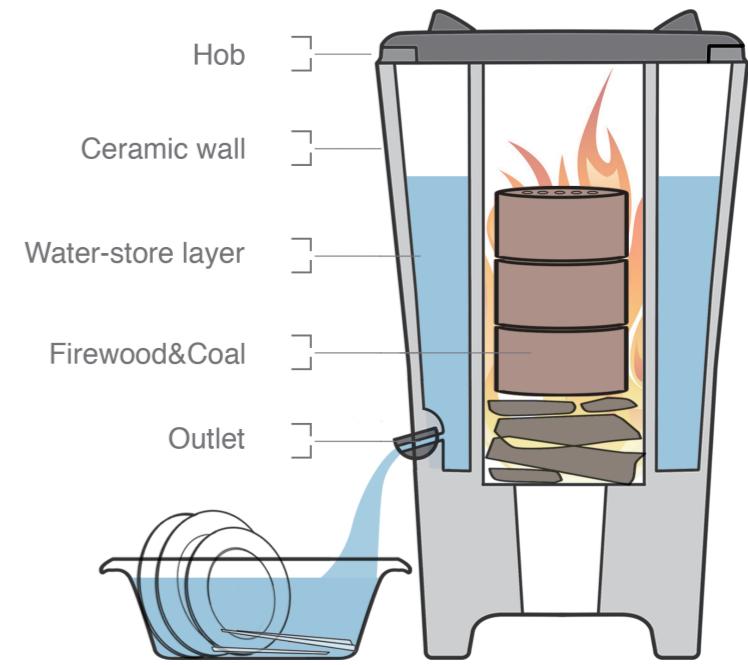
- 1 Add firewood and coal
- 2 Open the hob and add water
- 3 Cook and boil water at the same time
- 4 Press the side outlet to get boiled water

## Double Warm

Team Leader

DOUBLE WARM的设计灵感来源于天地地方的东方思想。在节约能源外，它将中国传统文化和陶瓷工艺很好地结合在一起。

The form of Double Warm is inspired by the ancient Asian idea that the Earth was square and Heaven was round. It combines ancient culture with ceramic art, providing convenience and aesthetics to people in addition to saving energy.



In developing countries, around 2.5 million people still rely on coal for cooking. However, there is a huge heat loss in burning coal. In such an energy-deficient society, every bit of recourse should be fully utilized. On the other hand, there are millions of people who don't have the access to basic hygiene. Poor hygiene is the leading cause of death, killing more than 14,000 people each day. DOUBLE WARM is meant to make the most of energy and provide hot water that has multiple uses like washing.



reddot  
design award  
best of the best 2013

## Luggage Sitter

Team Leader

当我们独自旅行时，行李箱往往会带来很多的不便，Luggage Sitter能够帮我们很好地照看行李箱，你可以随心所欲地睡觉，上洗手间啦。

While traveling alone, luggage always brings a lot of inconvenience. Luggage sitter can help you look after it when you need to sleep, go to the washroom or do other things while waiting for a flight.



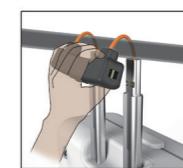
- 1 pull out your luggage handle



- 2 put the locking wire around some object.



- 3 lock it



- 4 adjust the code





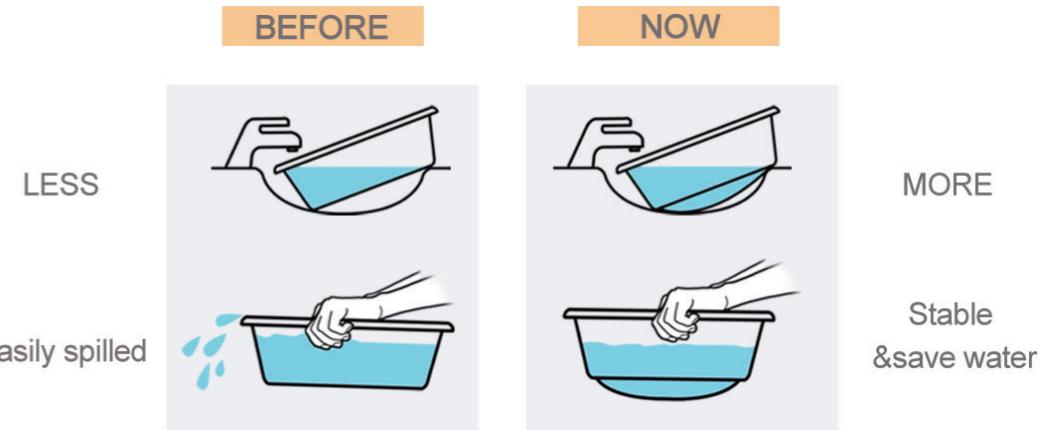
reddot  
design award  
best of the best 2013

## Stablow

Team Leader

用脸盆装水时，总是轻轻一晃就撒出。  
Stablow 拥有一个软质的脸盆底部，可以防止装水时水花四溅。同时，在放在洗脸槽装水时也可以接到更多的水。

It's not easy to carry water in a washbowl, for only a little shake can make the water spill over. Stablow is a washbowl with an elastic bottom, which can prevent the water from spilling out. Besides, Stablow makes full use of its volume and saves water for the environment. Stablow is fitted for all kinds of environments and provides people with a more convenient and comfortable experience.





IF Top 100 in 2014

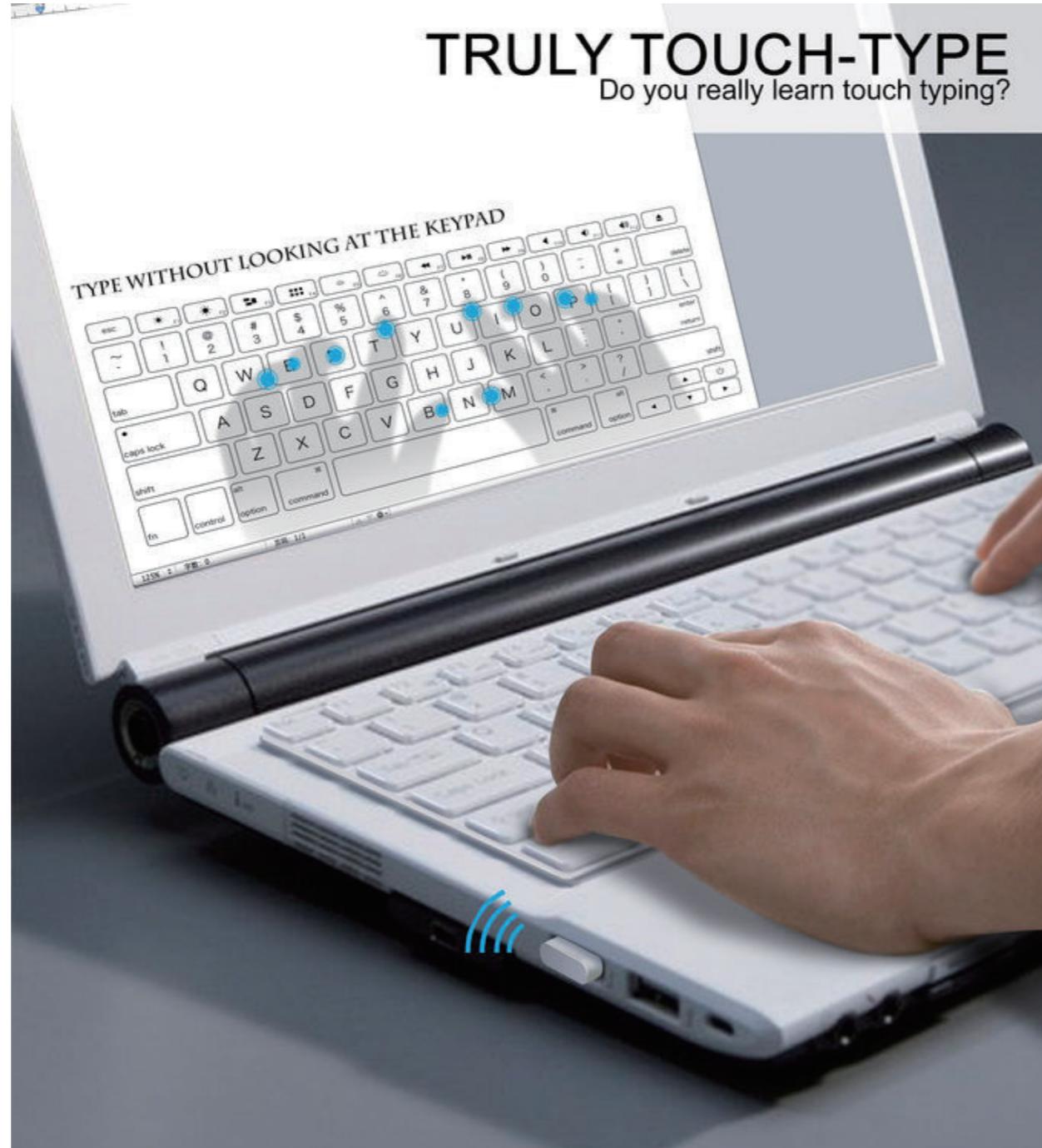
## TRULY TOUCH-TYPE

Team Leader

你真的会盲打吗？研究表明只有不到10%的电脑用户会盲打。TRULY TOUCH-TYPE能够帮PC用户真正学会盲打，手在键盘上的位置能够通过红外感应反馈到电脑屏幕上。在提高工作效率的同时，你甚至可以在被窝里工作啦！

According to statistics, less than 10% of PC users can really touch type. TRULY TOUCH-TYPE membrane keyboard helps all PC users learn-touch-typing. TRULY TOUCH-TYPE detects the position of both hands and feeds it back to the computer screen, so that users do not need to look down at the keyboard when typing.

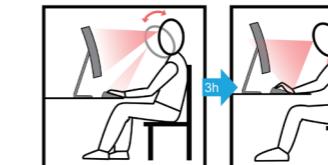
It improves work efficiency and also frees the cervical vertebra and lumbar at the same time. You can also put the keyboard somewhere out of sight such as on your lap or even under the covers in bed!



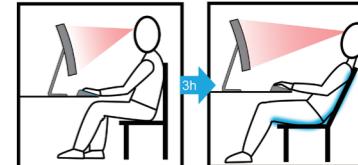
# TRULY TOUCH-TYPE

Do you really learn touch typing?

BEFORE

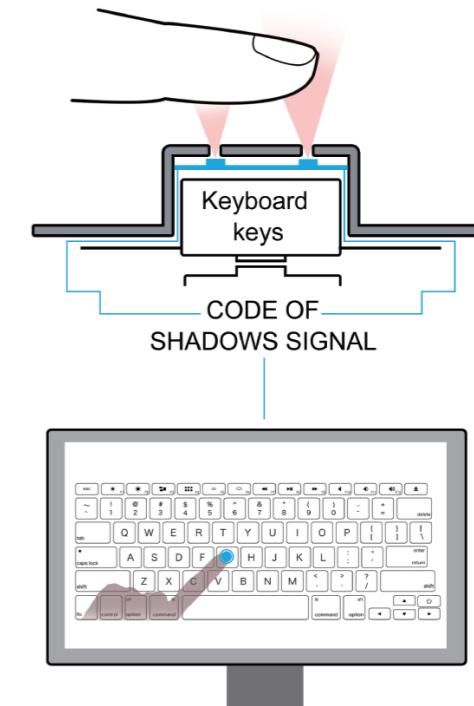


NOW



People who can not touch type often have severe cervical and lumbar pain after long-term use of computer. And their productivity is affected as time goes by.

TRULY TOUCH-TYPE can help people get rid of the shackles of the keyboard. People can adjust posture as they like when using the computer, even put the keyboard somewhere out of sight.



The computer display  
the position of the finger moves.



reddot design award  
best of the best 2015

## Timing Pill Jar

### Guidance

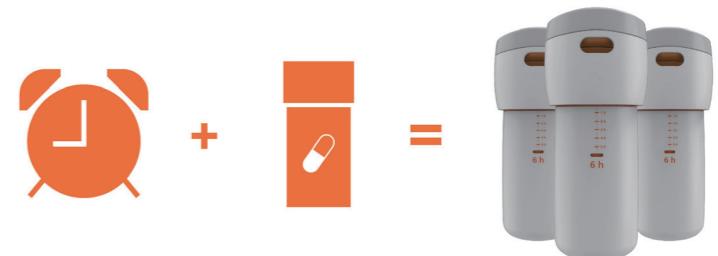
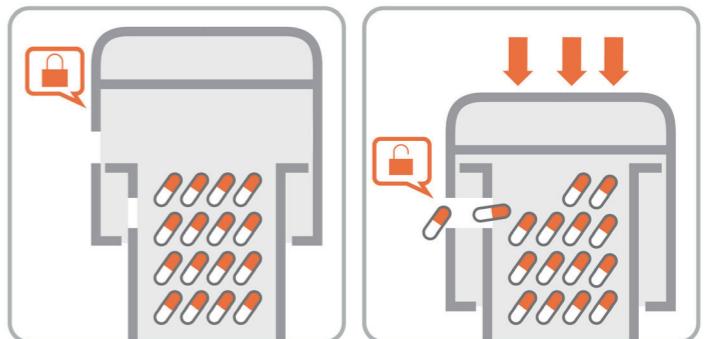
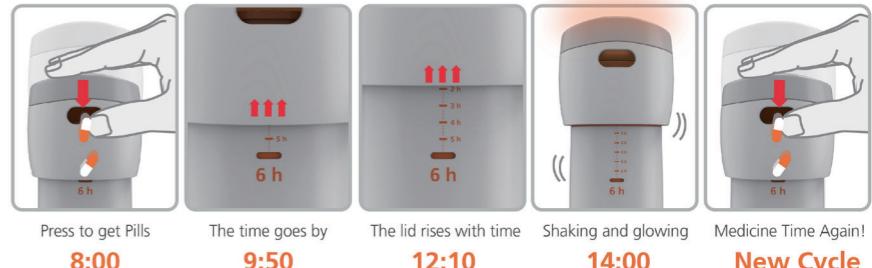
**Timing Pill Jar** 是为了让老年人按时服药而设计的。它可以帮助定时，提醒服药，为老年人的生活提供便利。

Timing Pill Jar is designed for elders to take medicine on time. It can be a big hassle for elders to remember themselves to take pills.



The elder people have poor memory

elder people always forget the time for specific pills. As a result, they may take the wrong pills in wrong time.





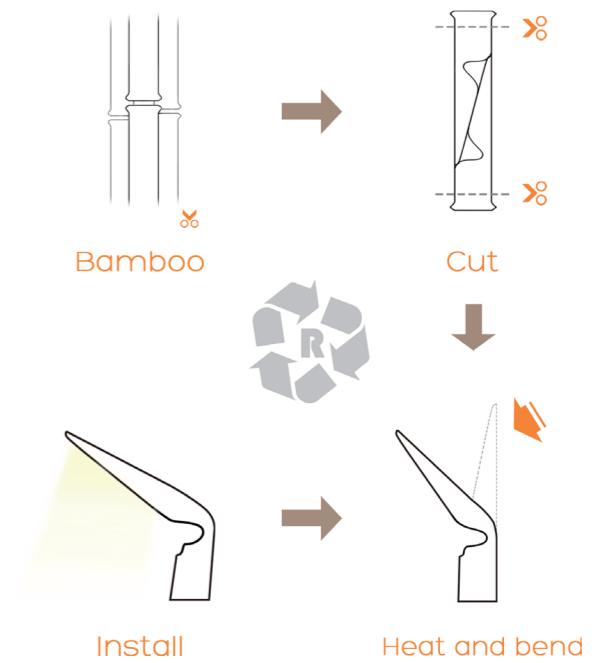
reddot design award

## BAMBOO LIGHT

Team Member

美学，功能性和环保，*Bamboo Light*利用竹子和传统工艺的灵活性。竹的一个部分，可以切割，加热弯曲形成两个灯。它极大地简化了制造过程，并充分利用该材料。

Aesthetic, functional and eco-friendly, Bamboo Light is a desk lamp made of a single section of bamboo. Making use of the flexibility of bamboo and traditional craft, one section of bamboo can be cut, heated and bent to form two lamps. It greatly simplifies the manufacturing process, and fully utilizes the material without waste.



# Deng Long

Team Member

**Deng Long**是由一根竹节制作的台灯，它的外形灵感来源于中国象征幸福和相聚的灯笼。通过中国的传统竹制工艺，它可以被一体成型。这样的结构简化了它的批量生产过程，也节省了材料，通过 它，我们希望把中国的传统文化保留下来。

The Deng Long is a lamp made of one single section of bamboo. The shape of Deng Long is inspired by Chinese lanterns which symbolize happiness and reunion. By using Chinese traditional bamboo craft, it can be shaped from single section of bamboo. With the special structure, Deng Long greatly simplifies the manufacturing process and saves material. Through Deng Long, we hope to perpetuate traditional culture, not only with crafts, but also the spirit of eco-friendliness and hope.



# Massage Jogger

Team Leader

根据中国传统医学理论，足部穴位对应着很多身体器官。经常按压他们对我们的健康颇有裨益。

Massage jogger在鞋垫处根据穴位理论设计了单向漏洞。当步行或慢跑，漏洞中会根据穴位对足部进行气疗按摩。

According to traditional Chinese medicine, there are lots of acupuncture point on your feet which are closely connected to your organs. Pressing them frequently is beneficial to your health.

Massage jogger's insole is designed to have certain holes according to the acupuncture point theory. When walking or jogging, the structure will make air flow press certain acupuncture points. This is an easy way of having acupuncture point pressure in your daily life.



## Structure



## Problem



Nowadays people have a lot of bad habits, such as staying up late, sedentary, long inactivity, overeating. Massage Jogger is suppose to let these people fall in love with walk and exercise.

## Theoretical Support

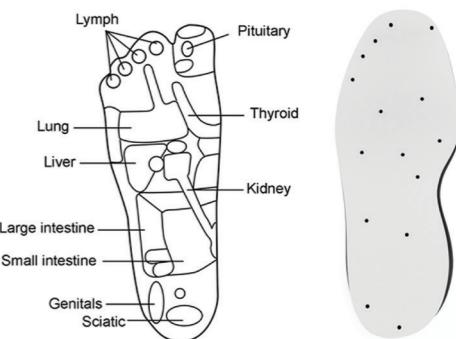
People spend a lot of money to have foot massage because they believe that the theory of traditional Chinese medicine:

Foot massage can refresh themselves.

Foot massage can prevent cervical spondylosis.

Foot massage can prevent insomnia.

Foot massage can relieve stress.



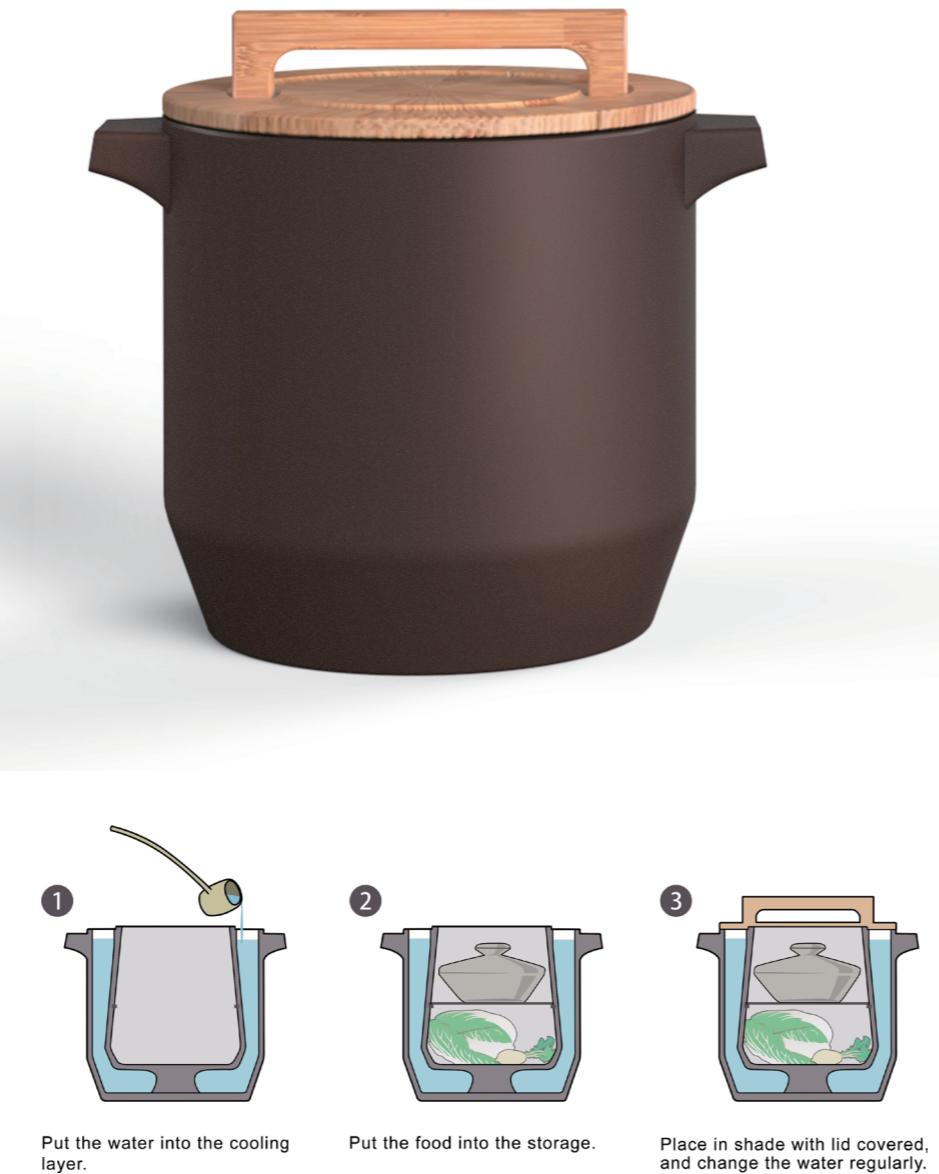
# ECO-freezer

Team Leader

无论中国是个多么高速发展的国家，仍有0.8%的农村无法通电，42.8%的农村居民没有能力购买电冰箱。

ECO-freezer是一款环保生态并且造价低廉的食物保鲜装置。ECO-freeze利用陶瓷和水的隔热能力，在普通的瓷罐内壁了加入了一层降温圈，使得食物放入后能够保存更长的时间。

Regardless of the rapid development of China, there are still many Chinese rural areas lacking access to electricity, and 42.8 percent of rural residents cannot afford to buy refrigerators. ECO-freezer is an environmental, ecological and low-cost food preservation device. Making use of the thermal insulation nature of ceramics and water, ECO-freezer adds a cooling layer in the inner wall of common ceramic jars to keep the food fresh longer.



# YOU ARE BEAUTIFUL

Magnet clothes for disabled people

Team Leader

失去手脚的残疾人往往会选择穿宽松的衣服，这样很便捷，但也失去了对美的追求。

YOU ARE BEAUTIFUL是为残疾人设计的磁性衣服，通过磁铁圆点和三角的结构，不仅可以方便地穿脱，用户也可以只用一只手固定衣服的形态，展现自己的肢体美

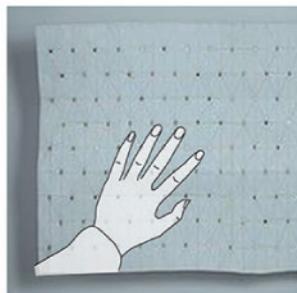
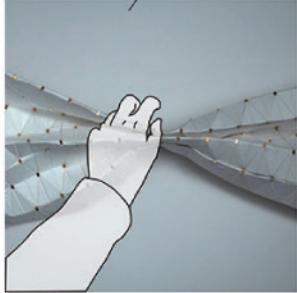
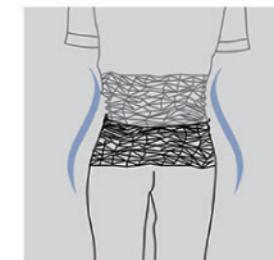
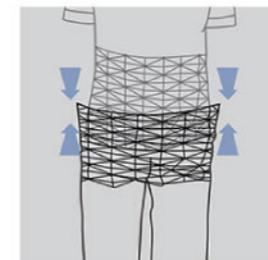
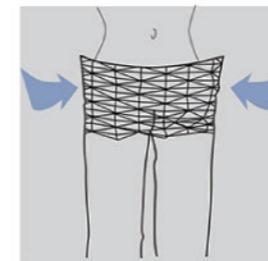
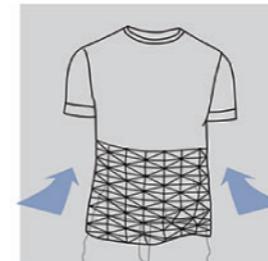
People who have lost the ability to move their arms and legs often choose to wear loose clothes because they experience difficulty in moving and low self-esteem. These clothes are made for function, while ignoring the aesthetic effect.

YOU ARE BEAUTIFUL are clothes designed for disabled people by using magnets. Under the premise of being comfortable and easy to wear, a consumer can use only one hand to adjust the shape of the clothes and show more beauty of their figure, which makes everybody have the right to pursue beauty.



It is loose and easy to pass through when the magnet is open

It is close fitting when the magnet is tightened.



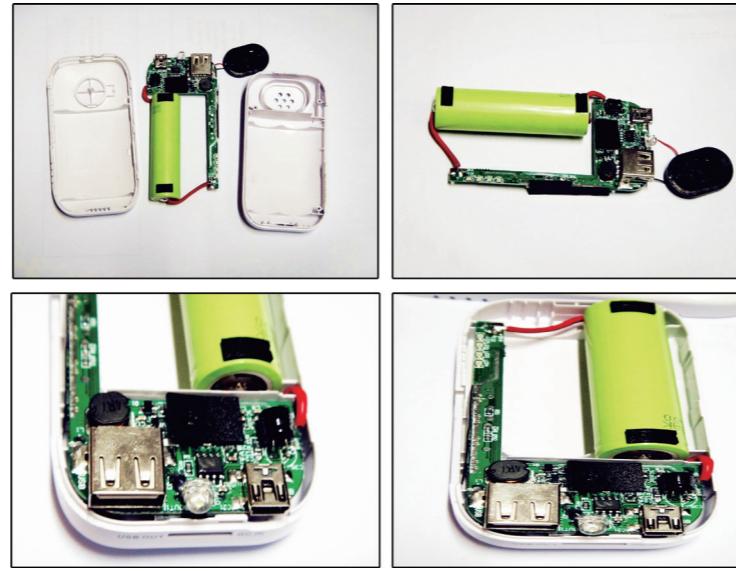
# Audio Wireless Router

Team Leader

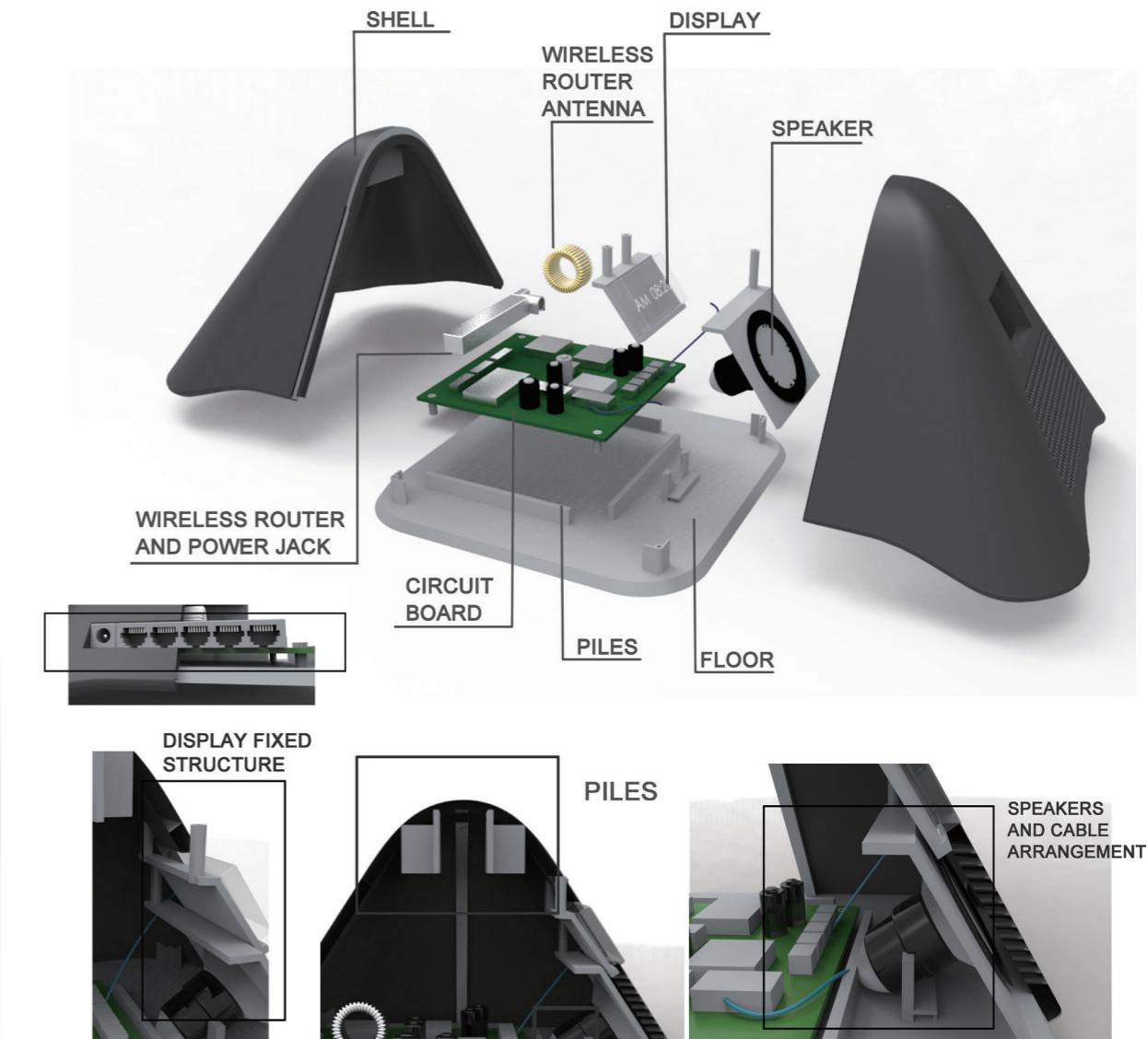
针对无线路由器多功能的实现，将音箱和电子钟两个模块整合到无线路由器中，并设计外形的分模方式以及内部结构。

Make the wireless router multifunctional, integrating both the audio and electronic clock module into the wireless route, and design the parting ways and internal structure.

The original structure



Redesign Structure



Redesign Shape



# Happy Up

Team Leader

根据长期伏案人群的工作状态需求，分析人机交互中与用户习惯不符的交互痛点，进行办公椅的再设计。

According to long-term desk people working condition , analysis the inconsistent pain points of human-computer interaction and re-design the office chair.

Office workers are prone to develop lumbar vertebra disease, headaches and cardiovascular disease because vertebrae sitting at a desk for long periods of time. Happy Up hopes to change their sedentary lifestyle by providing an aid to help people get up from the chair.

Happy Up installs a buffer spring lever in office chairs. Usually, the chair surface naturally tilts up. When people sit on it, the lever linked with the spring buffer moves and provides an oblique upward force for people to get up.



Usually the chair surface naturally tilts up.

When user sits down, The chair surface is parallel to the ground. The spring lever is pressed.

The chair can be bent backwards 30 degrees Comfortable and ergonomics

When user gets up, the spring buffer opens to provide an oblique upward force, help user to stand up.

# Bean Package

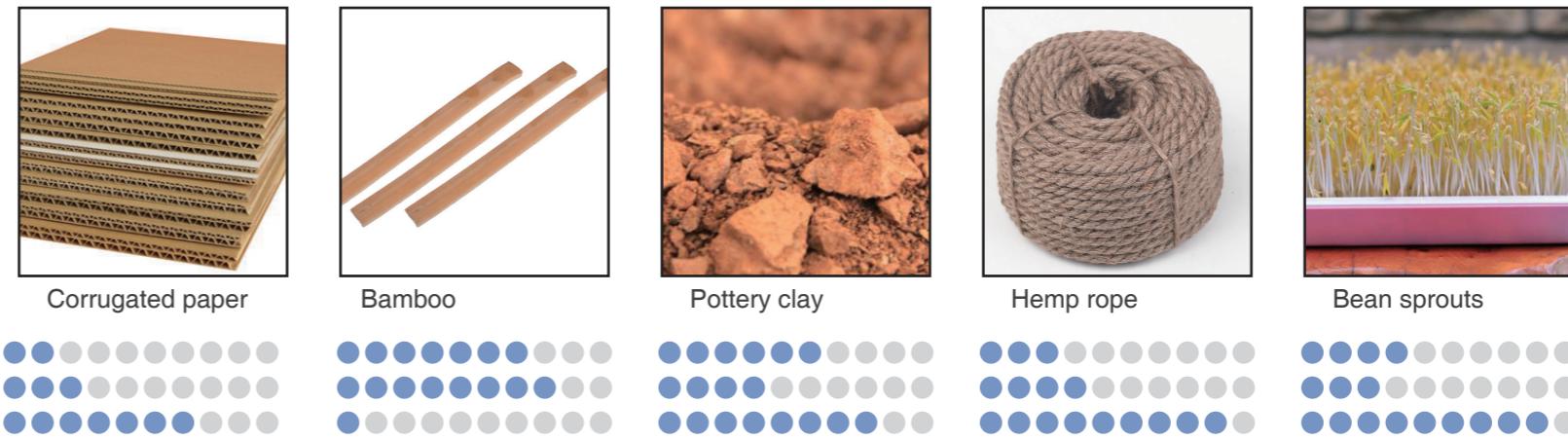
Team Member

灵感来源于中国古代的瓷器运输方式。  
将黄豆夹隔在纸板中，浇水后即可长出具有包裹性的抗震豆芽群。在环保的同时增强了材料的可适用性。

Look for a material that can replace packaging foam, explore the strength and extent of application .

bean sprouts, which is inspired by transportation in ancient China. Make the soybeans sandwiched in cardboard, after after watering, the soybeans will grow into bean sprouts within a parcel which may experience turbulence.

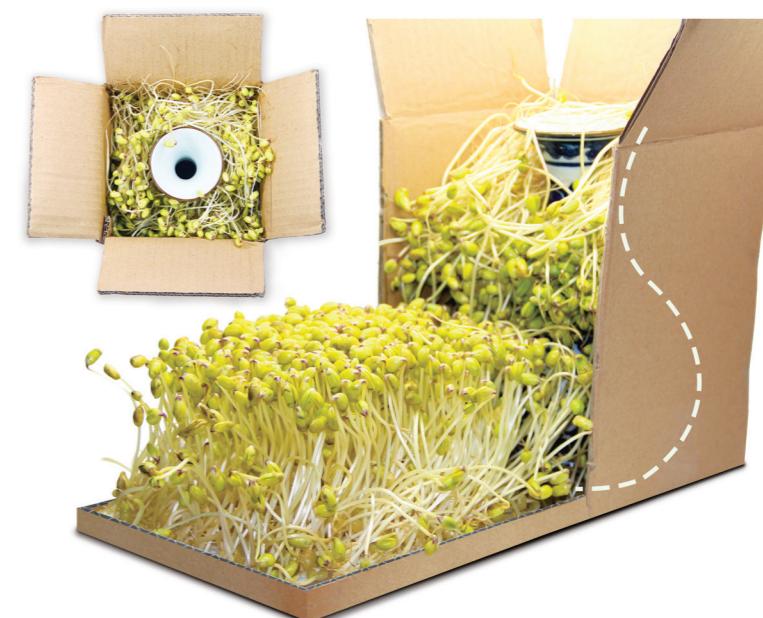
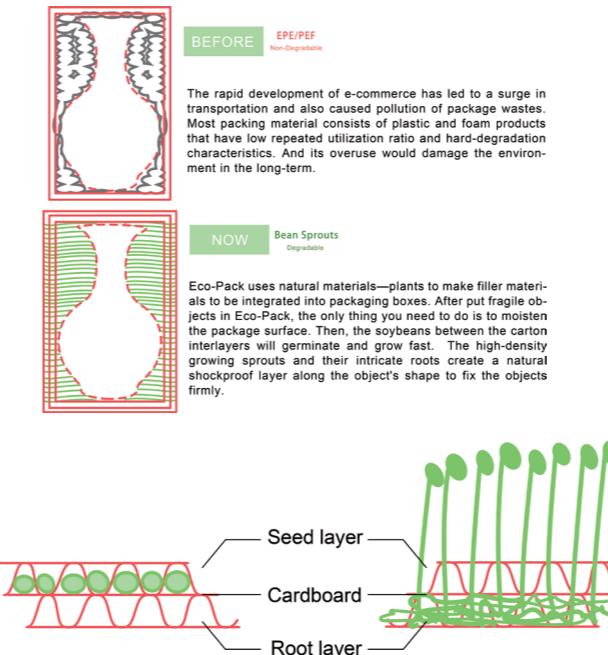
## Material Comparison



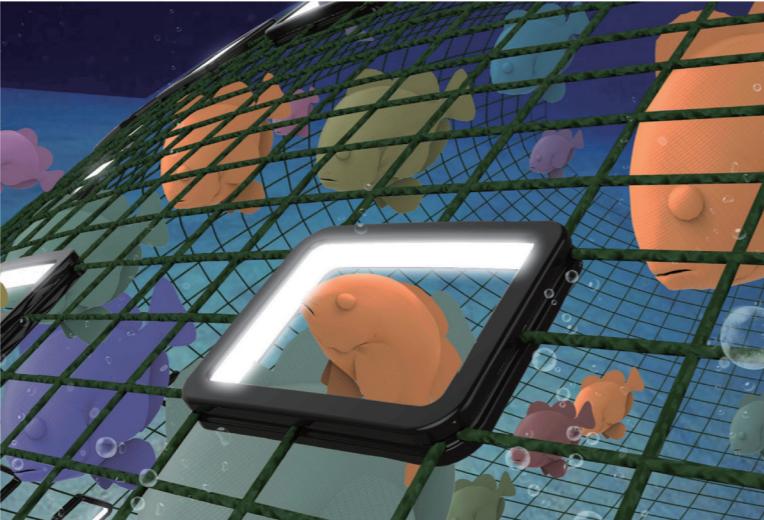
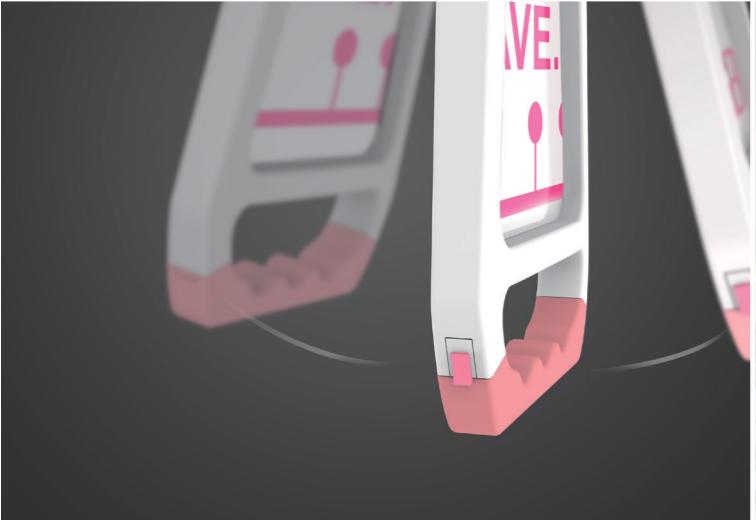
## Material Cultivation



## Sample



## OTHER PROJECTS





— 产 品 项 目 —  
Design Project

Deep in design with more integrated projects. -Team Work

# Magic Radio

Fantasy window to another world

## Magic Radio

Intelligent Doll House

你是否已经遗忘在若干年前我们收听收音机时脑海中对故事充满的无尽想象？Microsoft Radio希望通过这个收音机盒子，让你重拾想象力的魅力。同时让“隐藏的空间”解决人与智能AI对话时的尴尬片刻。

Have you forgotten the endless imagination in your mind when we listened to the radio a few years ago? Magic radio is an intelligent doll house. Through this radio box, you will regain the charm of imagination, allowing the “hidden space” to solve human and AI dialogue's embarrassing moments.

Duration | June - Oct. 2016

Team | 1 Designer + 1 Programmer + 2 Mentors

Company | Microsoft Research Asian



[Efficiently comprehend this program.](#)  
[please click here to watch the video.](#)



## DESCRIPTION

Magic Radio 是一台AI宠物机器人，它利用“留白”激发儿童的想象力，并通过智能交互使得孩子和父母更好地沟通。

Magic Radio is an AI pet robot, it employs the “White when black” strategy to stimulate the imagination of children, and improve the relationship between parents and their children through smart interaction.

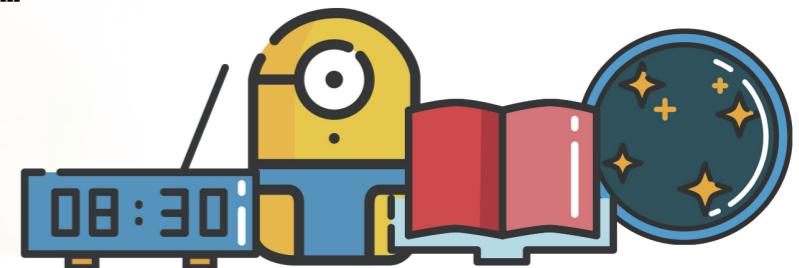
Magic Radio 可以很好地解决现有儿童产品的问题。每一个机器人都生活在自己的主题里，可以跟用户谈论每天发生的事情，家长可以选择孩子喜欢的形象；随着孩子的成长可以更换不同的人物和场景，Magic Radio 始终可以记录分析孩子的言行反馈给父母。

Magic Radio can deal with all the above problems nowaday children products have gracefully. Every chatbot has its own scenarios, they will chat with the users about the things happening in their own world; Parents can select the chatbot their children like; With the growth of the children, the Magic Radio will change characters and scenes. Magic Radio can always record and analyze the behavior of children to provide feedbacks to parents.



Magic Radio looks like a radio, but it is an intelligent doll house with a chatbot actually. The difference between a normal doll house and a Magic Radio is that in Magic Radio children can only see the contents through a window, and they will have to use their imagination and clues of sounds and shadows to conceive the other parts of the space. There are many different characters to select from, and they will talk to you and respond to your voices, they may even fell shy or angry to get away from the window. They live in their own world telling their own stories. As long as the user talks to the Magic Radio, the character will gradually get to know the user and develop its own character accordingly.

IT IS ...



*A radio, a living cartoon figure, a story teller and an endless magical world.*

## CONCEPT PRINCIPLES

In order feed the users imagination outside the "window" , we used:

## DESIGN PRINCIPLE

为了能够让用户更好地延续“窗口”以外的想象，我们运用了“计白当黑”和“声话分立”两种方法。

“计白当黑”是中国画绘画方法的一种，指在画面中留白，让观看者产生空白处的联想；“声话分立”是一种电影的拍摄手法，让画面中的声音和发声体不在一个画面内，引起深化信息的叠加联想，加强用户的感知深度。

眼见为实，耳听为虚，通过这两种方法的结合产生一加一大于二的效果。

In order feed the users imagination outside the "window" , we use two methods called "White when black" and "Asynchronism".

"White when black" is a Chinese painting method, which means to leave a blank part of the screen, so that viewers can have associations; " Asynchronism " is a film shooting technique, which means to make the screen sound and body not in the picture, resulting in deepening the superposition of information association, which can enhance the user's perception.

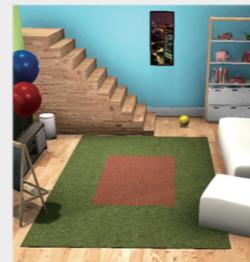
Seeing is believing and hearing is false, through the combination of these two methods. One plus one is greater than two

### Asynchronism

" Asynchronism " is a film shooting technique, which means to make the screen sound and body not in the picture, resulting in deepening the superposition of information association.



Sounds of bathroom



Sounds of stairs



Shadow of living room



Hearing is virtual.

Virtual-Actual Combination fill the imagination

### White when black

"White when black" is a Chinese painting method, which means to leave a blank part of the screen, so that viewers can have associations.



Seeing is actual.

## MY JOB

作为小组内唯一的设计师，我丰富了产品的概念，并用上述两种方法更好地展现概念。

在项目过程中，我完成了产品的外形设计、结构设计、并利用Unity3D和开发人员一起制作了软件demo。

As the only designer in the group, I enriched the concept of the product, and used the above two methods to better demonstrate the concept.

During the project, I finished the exterior design and structural design. With Unity 3D and in collaboration with a software developer, we made a software demo.



### Scenarios



1 Alarm clock mode



2 Chat mode

*Users can interact with the character with window screen.*



3 Half-free mode

*While the character:  
Can't recognize voice;  
Don't know what to answer;  
Don't get any instructions.  
It can act freely in the shadow screen.*



4 Free mode

*The character can be disappeared from both of the screens and leave sounds to imagine.*

Magic Radio is a place for robots, kids can communicate with the robot in three level: The first level allows kids to see the robots clearly through a window; The second level left children only shadow through a blurred screen; In the third level, sound is the only thing remained. We believe that this kind of design will stimulate the imagination of children and vivid present the characters. Because of the immaturity of AI technique, we have graceful ways of compromising. For instance, when the AI does not have sufficient confidence of recognizing what the user says, it will leave deliberately.

# MY JOB

为了节省开发成本，我们先使用了安卓手机作为radio窗户的屏幕，同时我们选择了更好做动作的teddy bear替换了小黄人。

右图展示了我们在Unity3d中搭建的场景和固定手机的结构设计。

To save development costs, we first used the Android phone as the radio's window screen.

The figure on the right shows the scene we built in Unity3D and the mobile phone structure design.

为了让Magic Radio在平时看起来像一个普通的收音机，在机器人与孩子对话时像机器人的家。我们尝试了多遍不同的产品语义（尝试了多个不同的产品设计（这个Nannan定那个说法好））使得它在外观上既融合现有的设备交互自然又有惊喜感（未来科技感）。

为了让机器人的回复和动作更加自然，我们为每一个机器人建立数据库和引擎，使得机器人的聊天内容和动作能够围绕它的形象主题，让它们更像生活在自己的世界中。同时，我们也深入研究了对儿童的语音识别。

To make Magic Radio looks like both an ordinary radio and a home of robot when having conversations with kids. We have tried out different design models. We want it to have the feature of existing radios so that it feels natural to use, while at the same time we want it to be surprising as a house for the robot.

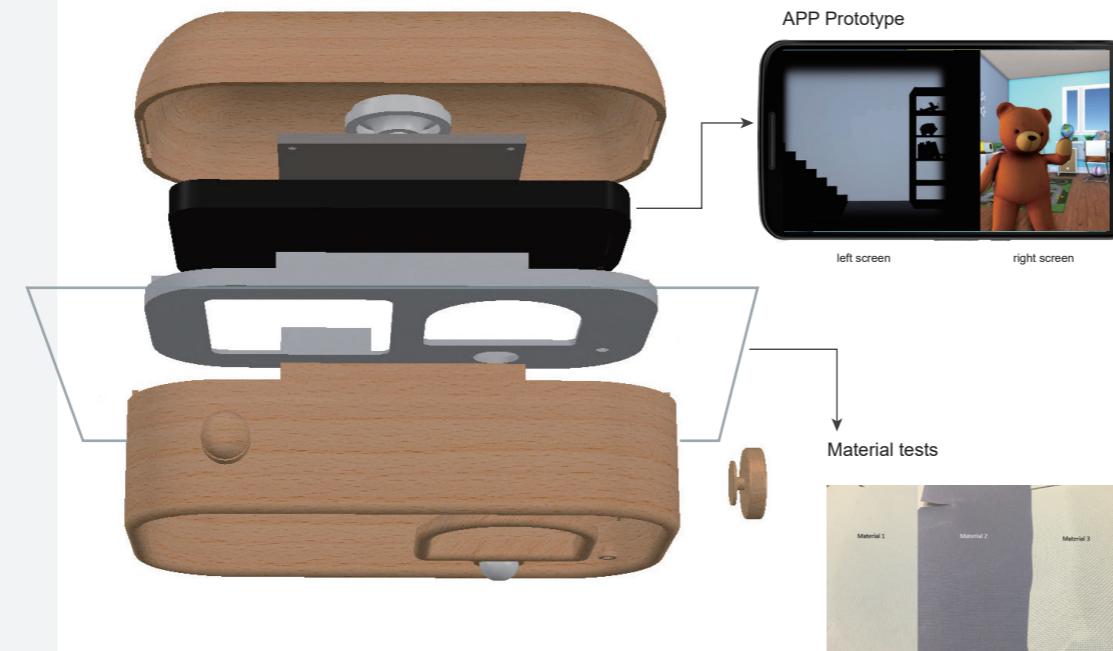
To make the responses and actions to be more natural, we built database for every chatbot exclusively, which allows each chatbot to respond based on their unique settings so that it feels like they have their own world. Also, we have researched recognition for kids' voice in depth.

Figure design versions

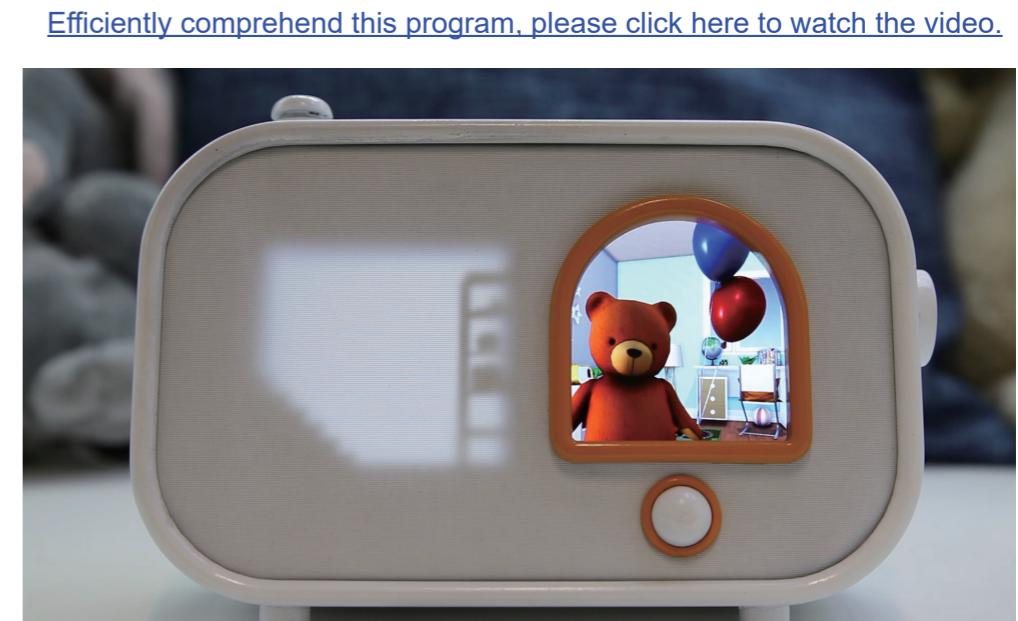


the one chosen

Structure



Final Prototype



[Efficiently comprehend this program, please click here to watch the video.](#)

## MY JOB

在app中我们为其设想了更多的交互方式，用户可以解锁购买其他的人物形象，或者给里面赠送礼物。我们用一个小视频阐释了产品的概念，希望您用几分钟观看一下。

In addition to talking to him, there are other ways to interact with him through our app. Users can unlock other characters, send gift, and so on. There is a small video about the concept, hope you take some minutes to watch it.

[Efficiently comprehend this program.  
please click here to watch the video.](#)



# Microsoft BB-8

Robot with IP

Star Wars 是倍受人们热爱的电影。经过调研，我们发现Star Wars深刻地影响了美国好几代人的生活。我们希望通过BB-8的IP，设计一款能够增进家人互动与交流的智能机器人，使得用户在使用时能够重新进入Star Wars的宇宙中。

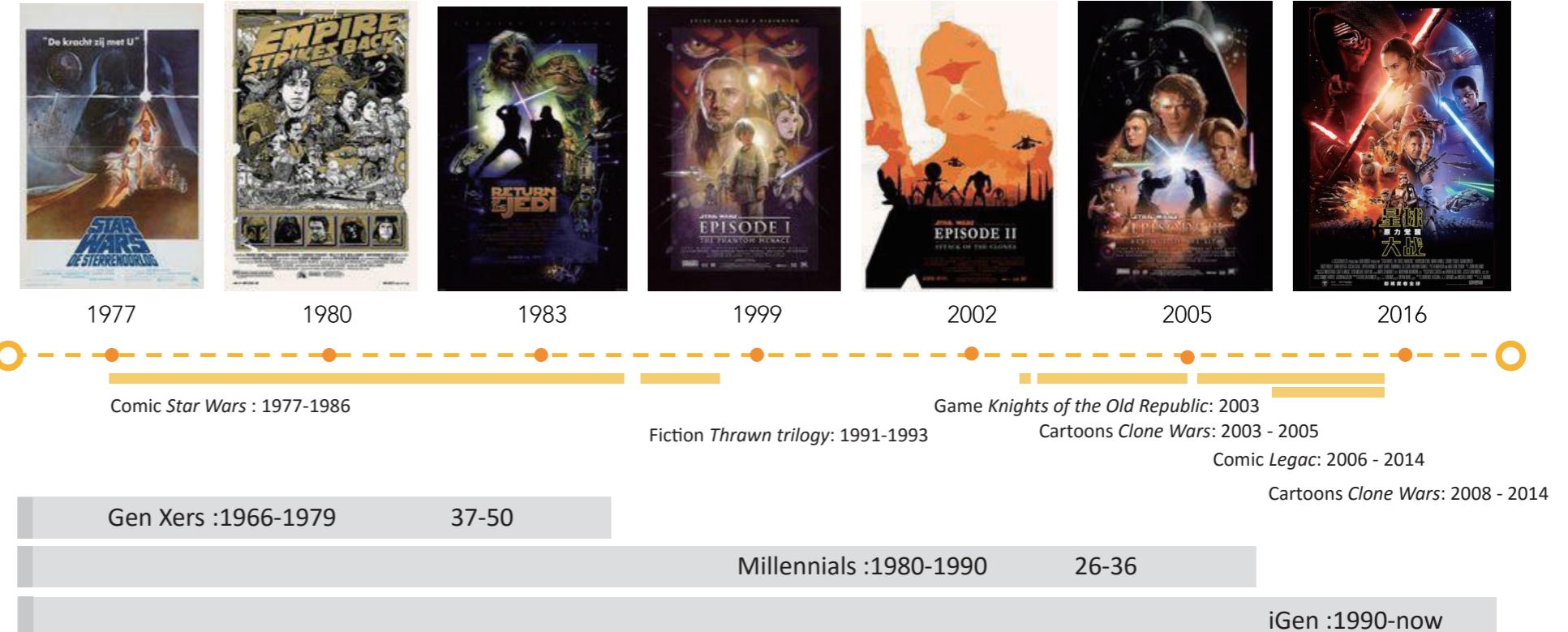
Star Wars is a very popular movie all over the world. We found it impressed several generations in America. We hope, by the IP of BB-8, to design a smart droid that can help families communicate better. Meanwhile, users can imagine themselves flying into the Star Wars Universe again.

Duration | June - Nov. 2016

Team | 1 Designer + 3 Programmer + a Hardware Team

Company | Microsoft Research Asian +The Walt Disney Company  
+ IngDan China



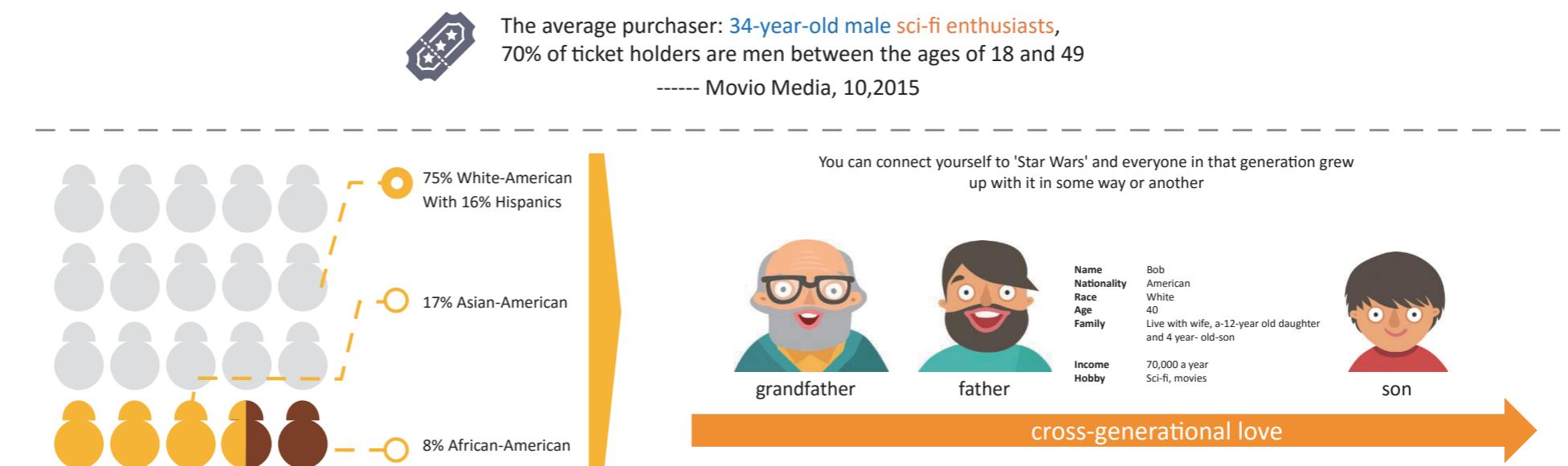


## Research

在确定了我们的目标用户为美国人群后，我们访问了很多Star Wars的热门论坛，搜集了星战粉丝经常讨论的话题，发放了问卷进行调研。

右图为我们的调研结果。我进行了调研的主要工作。

As the target users are American, we looked through a lot of recent forums about Star Wars in the USA. We gathered the top topics and did a survey. The result is displayed to the right. I made most of the survey.

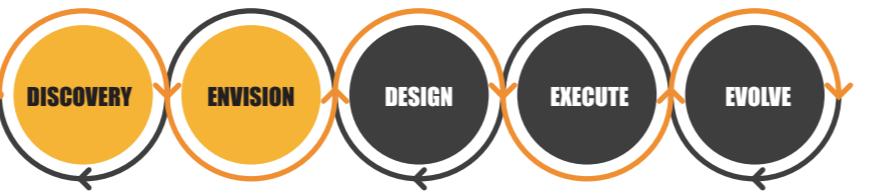


## MY JOB

因为小组接到的任务是将BB-8的滚动机制实现，并且在它头部加入摄像头、麦克风等传感器。我们觉得这样的球形机器人能够实现的功能太少，于是尝试给BB-8设计了手臂，让它能够指向性地控制家中的电器，并实现一定的娱乐功能。

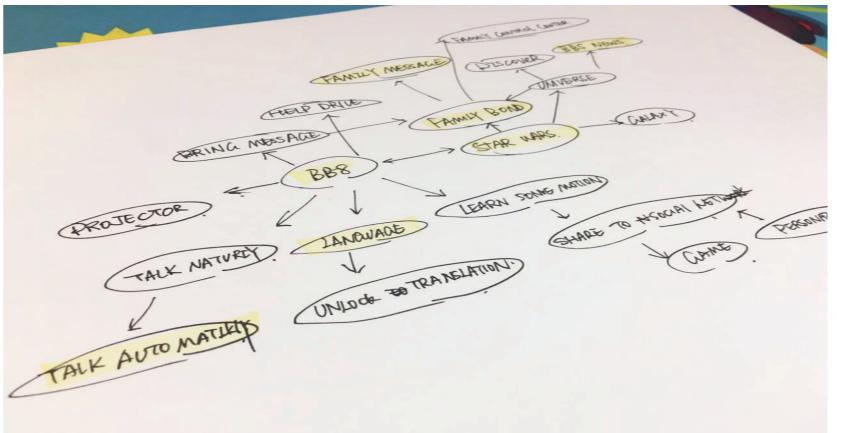
At first, our team was supposed to make a smart BB-8 head with a camera, speakers, and other sensors, meanwhile we need to achieve the rolling function of BB-8's body. We thought the sphere figure can't make some interesting functions come true, so we added arms for BB-8.

### Design Process



#### Envision:

Brainstorm



#### Weighted function selection

	Respect the original work	Reinforce the family bond	Keep discovering the Star Wars universe	High technical barriers	Useful	Interesting	Easy to realize	Total scores
Carry message	10	10	10	5	6	8	10	59
Keep Bleel language	10	6	10	2	2	10	10	50
Control household appliances	5	10	5	10	10	8	6	54
Help drive	10	7	8	5	5	9	8	52
shoot	5	9	5	2	10	9	10	50

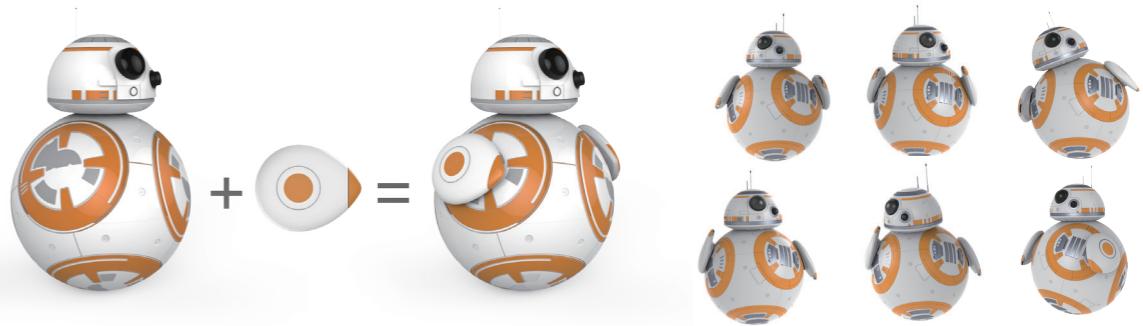
### Design:

1

As BB-8 can collect more information with all the sensors in the head, we designed arms for him. Hence he can point in a certain direction and pick up other properties. This part was designed before the research, which should be noted.



#### ADD ARMS:



Remote control household appliances.



Pick up weapons for virtual fighting.

## MY JOB

在几个月的开发之后，我们发现要做出活动自如的行走硬件需要花费一年左右的调配时间，于是开始思考用其他的方式使它实现。

我们重新进行了项目调研（于该项目第一页展示），认为展现出更多BB-8在电影中出现的功能会使用户更加喜爱它，同时，因为新球大战对几代人影响，我们也希望该产品能够更好地促进家人之间的交流。

在这个项目中，我体会到设计调研对产品的重要性，用户所追求的产品功能往往和我们研究的技术实现由一定的差别。

As the body rolling hardware turned out to need about 1-year-work time, we start to think for another way to make BB-8 realistic.

We did additional research, which is shown on the first page of this project description, and found out the more details from the Star Wars movies that are implemented into the project, the more users will like it. Also, we hope this product will promote communication among families, since Star Wars has been influencing several generations.

From this program, I realized the importance of design research. It is hard for us to know what users want while concentrating on the technique.

# 2

## A talking Gopro

1. Video after receiving the instruction.
2. Take photos after receiving the instruction.
3. Talk about the thing you see with the Image Recognition Technology.



# 3

## An emotional recorder

1. Video or take photos after receiving the instruction.
2. Navigate after receiving the instruction.
3. Talk about the thing you see with the Image Recognition Technology.



Float HEAD



Fixed BASE

# 4

## A message set from the universe

It will receive messages like:

1. Star Wars news, from BBS.
  2. Safety information, for example, do not play with fire.
  3. Family history
  4. Mamapapa's love
- ...

### MY JOB

在讨论了几个概念之后，我们决定实现BB-8的智能头部，并将其应用到不同的配件上，最先想实现的配件如右图所示。

我们希望让它成为一台家中的留言机，孩子能够通过它接收到来自Star Wars的新闻，家长也可以通过它将一些平时说不出口的话，或者孩子听不进去的内容用宇宙新闻的形式播报出来。同时，它还能监视、拍照，与你讨论星球大战的话题。

After discussion, we decided to implement the intelligent head of BB-8, and assemble it to different accessories. The first one we want to make is displayed on the right.

We hope it to be a household message set. Children can receive messages from Star Wars universe, and parents can pass informations that's difficult to say. Meanwhile, it can also monitor, take photos, and discuss Star Wars with you.



### PROTOTYPE:



3d printed parts

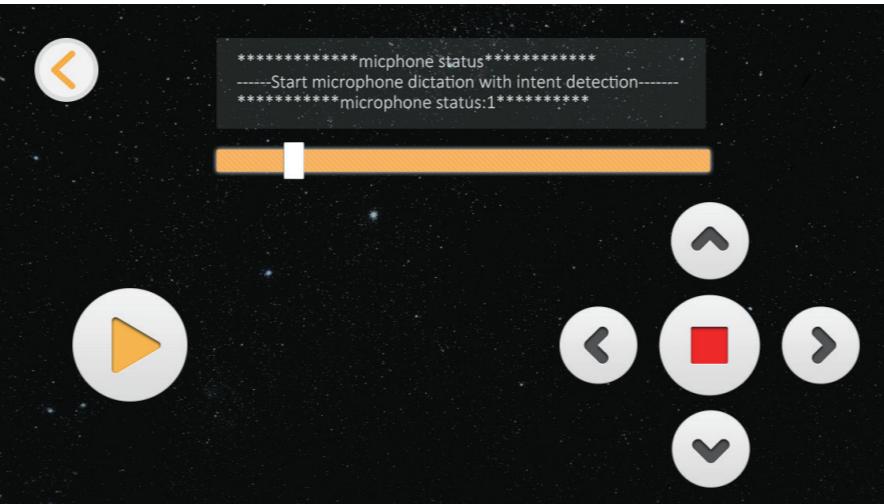
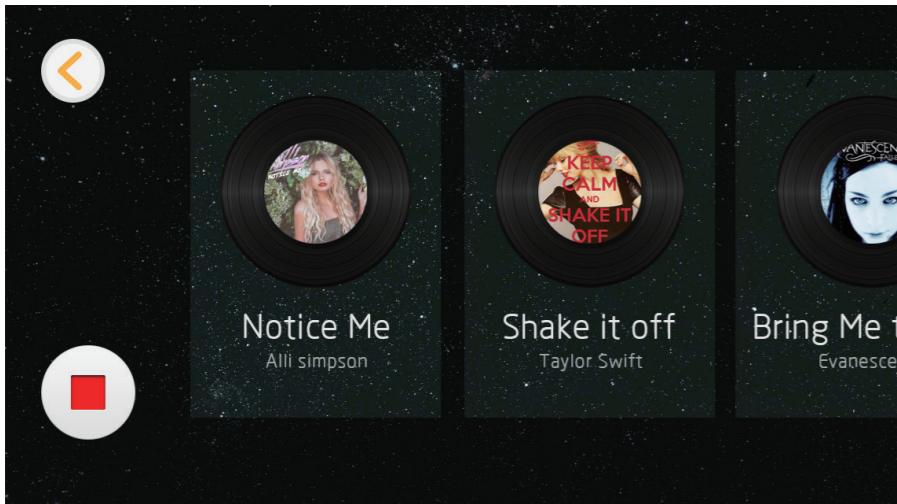
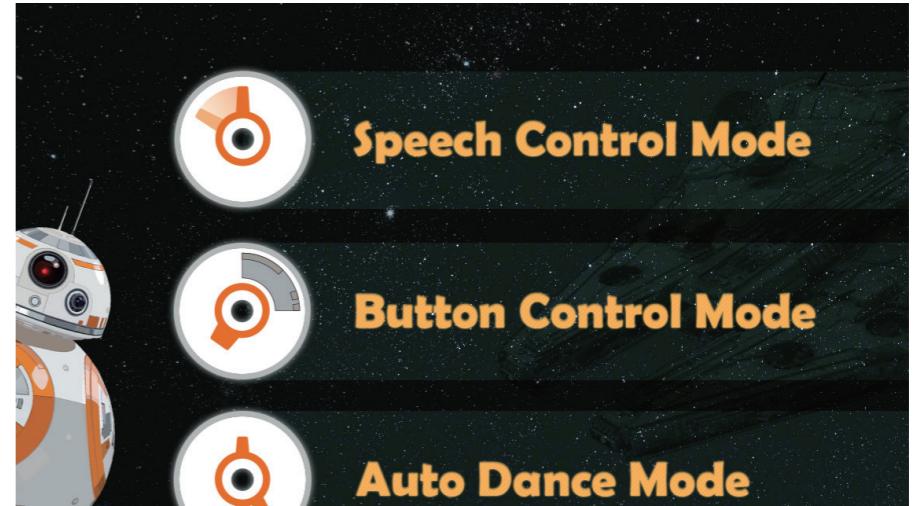


# 2

UI design for the functionality  
we have implemented



MICROSOFT BB-8



# B-BASKET

## WORKSHOP

在西班牙纳瓦拉大学交流期间，参与了一个自行车配件设计的workshop。我所在的小组针对西班牙人很喜欢在酒吧买啤酒站着吃pintxos的特点，设计了可以摆放小吃的自行车车篮。这样，骑车在不同酒吧吃pintxos的西班牙青年就可以围绕在自己的车边边聊边吃。

During my exchange at the University of Navarra in Spain, I was involved in a bicycle accessories design workshop. Based on the observation that Spanish locals like to buy beer at the bar and eat pintxos while standing, my team designed a bike basket that can be held in one hand, allowing users to hold snacks. Thus, the Spanish youth can ride a bike and eat pintxos in different bars without the problem of parking their bikes or being unable to find a seat.

**Duration** | June 2014  
**Team** | 2 Designers + 1 Engineer  
**School** | Zhejiang University + Univ



# B-BASKET

SAFE ENJOY CONVENIENT

The B-Basket is a versatile way to transport and keep your belongings safe, while enjoying your plans with your bicycle. With a security locker and a foldable table, you will be able to ride your bike, have drinks or food, write and read, or just store your properties without concerning about them.



## Status quo



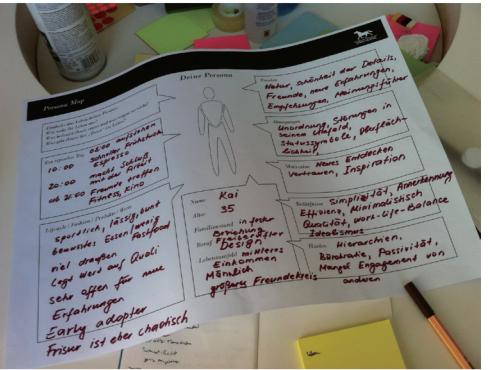
People in Spain like to stand in the bar, drink beer and eat pintxos, especially in San Sebastián where TECNUN is located. I had often been brought to several bars in one night, but the problem is, what if people who ride bicycles want to eat from bar to bar. Will he or she have to park the bike over and over again?

## Opportunity analysis-Persona



AGE	Middle school	Early high school	Later high school	College	Teacher / Guardian
LOCATION	Urban low income	Rural medium income	Suburban high income	Urban medium income	N/A
DE ROLE	Follower	Vice president	President	Slacker	Old Person
INTERESTS	Sports	Religion	Leadership	Gaming	Volunteering/Mentoring

<p>Juan just moved to Texas from Mexico in 7th grade in <b>Mcallen, TX</b>. His parents moved to the states so Juan could be home. He was born the plane goalie for his middle school soccer team. Juan has a son with his friends on the plane. Juan's mom's hand me down flip phone.</p> <p>He helped his friend with <b>EDUCATIONAL FUND</b> and got lots of inspiration and scholarships over SMS. Would join any local community action group if invited by friends over SMS.</p>	<p>Ashley is a 16-year-old high school sophomore in <b>Waukegan, IL</b>. She loves her dance team and learning to code. Her family is conservative and they love the arts.</p> <p>Ashley always reads <b>EDUCATIONAL FUND</b> and gets the perfect for her youth group's community service projects.</p> <p>Ashley goes on the site all the year round to look for grants and research tasks. She wants to join creative writing club at school. She wants to help herself and would like Picos for Pets to do with her friends.</p>	<p><b>Maya is an 18-year-old high school senior in <b>Bethesda, MD</b>.</b></p> <p>She is on the debate team and will be studying Nursing at American U. She tweets @MayaLynn1000 and has a MacBook.</p> <p><b>Maya did her <i>Deforestation</i> Club in making cards for soldiers and a <b>PB&amp;J Jam</b>.</b></p> <p><b>Maya has an idea to create an interactive "Behavior Dilemma" website for teenagers.</b></p> <p><b>Maya did her <i>Deforestation</i> study in org at school and searching for ideas for her project to make for projets in a reading class.</b></p> <p><b>Chris is a 21-year-old from <b>Edina, MN</b> and attends <b>Dartmouth College</b>. He gets good grades while studying much.</b></p> <p><b>He has a craggy old Dell laptop and a Macbook pro. Chris uses his Apple phone for playing games and watching Star Wars when he's bored.</b></p> <p><b>He found <i>ODG Bilingual Test</i> pages through Google for his college speech class.</b></p> <p><b>Chris has only interviewed with one company so far but would convert it to a law school if he got scholarship money.</b></p> <p><b>Frank is 34 year old <b>MS</b> math teacher and Key Club Advisor at <b>Edina High School</b>.</b></p> <p><b>He volunteers at a basketball camp every summer. He wants to get more involved in community volunteer work through any of their volunteer initiatives.</b></p> <p><b>Their club has done DS' <i>Summer Reading</i> program and their students drive and use DS' <i>Scholarship</i> to recruit members.</b></p> <p><b>Frank shares volunteer ideas by email &amp; social media and wants to help others start a project if his club can run meet-n-greets.</b></p>
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## Idea generation

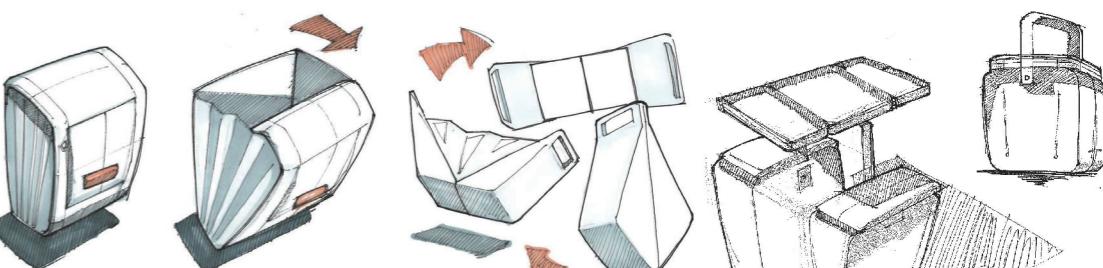
## Brainstorming and dot voting

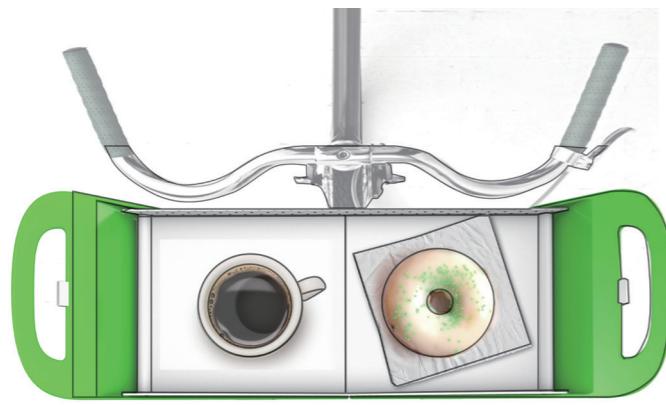


## Weighted idea selection

	weight	concept 1	concept 2	concept 3
controllable on velocity and direction	2	5	2	2
safe	3	6	3	3
gain enough speed	4	3	4	4
basic construction				
simple	1	7	5	1
well accessible parts	2	8	5	2
distinct	4	4	7	4
stable	3	3	8	3
compact	1	6	3	1
springs	1	8	2	1
force	3	7	5	3
total score		125	130	89

Describe in details and create 3 concepts





enjoy

B-Basket has a fold in the top. Pintxos or other food can be put on while the user want to stop and eat.

Need not to worry about the full basket of stuff.

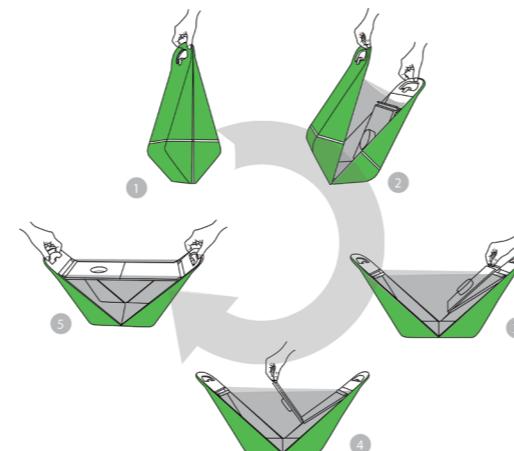
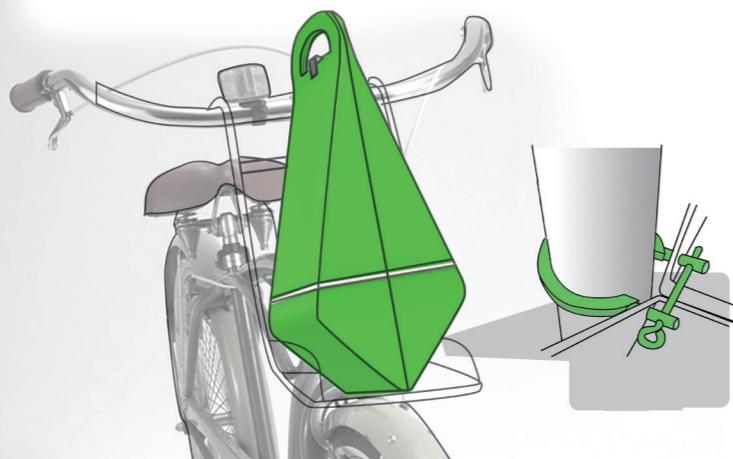


## Convenient

This basket has a flexible structure, with three different states, it can be easily closed and taken away. In that way, you will never worry about the full things in the basket. The bike basket will quickly become your fashion bag.



B-Basket has a code locker, which will keep valuables safe while you leave the bicycle alone. Meanwhile there is a key in the basket, which links the basket to the bicycle bar. B-Basket will never be taken away unless you unlock the code lock and take out the key.



- ① Adjust the code lock.
- ② Open two covers.
- ③ Open the flats.
- ④ Put the other parts of flats on the crossbar
- ⑤ Finished.



# Hi-insole

Graduation Project

由于对电脑和互联网的依赖，都市人群往往久坐不起，对于互联网相关行业的从业人员，长期的伏案工作不仅会影响身体健康，同时，对他们的人际交往和情感交流也会造成一定的影响。

Hi-insole是一款可穿戴足部产品，用情感化的方式引导互联网行业从业人员在工作之余起身运动。利用内置的压力传感器和六轴传感器该产品可以检测用户的下体运动以及身体状况。通过与软件的配合使用，本产品能够实时指导用户的运动动作，引导合适的运动场地，匹配运动伙伴，使得该人群健康工作，健康交友。

For Internet-related workers, long periods of time at a desk will not only affect their health but also affect their interpersonal and emotional interactions. We hope through a wearable foot product can guide computer users to take up sports in their spare time. This insole looks the same size as regular ones, but also the ability to monitor the physical conditions of the human body by pressure sensors, a three-axis gyro, and an accelerometer. With the assistance of the tailored app, it will be able to offer real-time exercise guidance, to lead users to places that meet your exercise requirements, and even find exercise companions within a determined radius.

[Efficiently comprehend this program,  
please click here to watch the video.](#)



## MY JOB

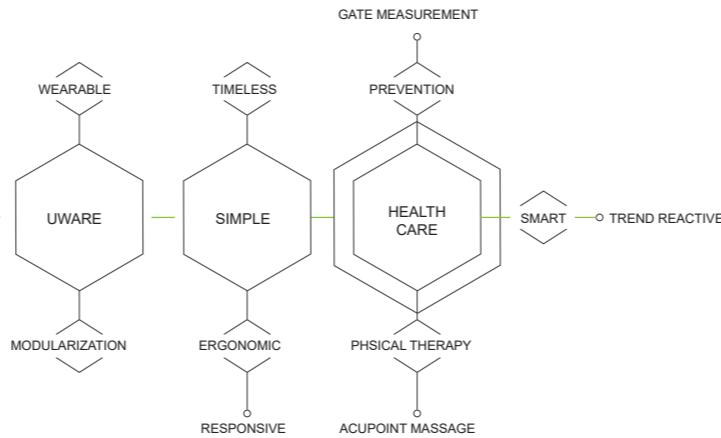
Hi-insole是我的本科毕业设计，该项目由我和一位程序员共同完成的，在项目中我进行了市场调研，认为健康护理将会是未来可穿戴产品的走向。不同于现在的可穿戴产品，我希望通过压力传感器来跟踪用户的步态周期，使其不仅能够提心锻炼，指导锻炼，还能够通过步态周期预测一些病变。

Hi-insole is my undergraduate graduation project, the project was completed by me and a programmer. For the project, I conducted market research, that expressed health care will be the future of wearables. Unlike today's wearable products, I wanted to track the user's gait cycle with a pressure sensor that not only reminds and instructs users to exercise, but also predicts a number of lesions through the gait cycle.

**Duration** | Feb. 2015 - April 2015  
**Team** | 1 Designers + 1 Engineer  
**School** | Zhejiang University

FUTURE FORMULA

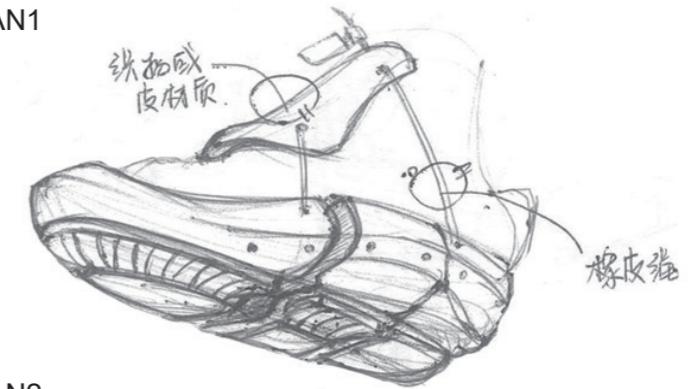
2020



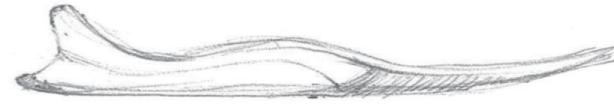
BRAINSTORMING



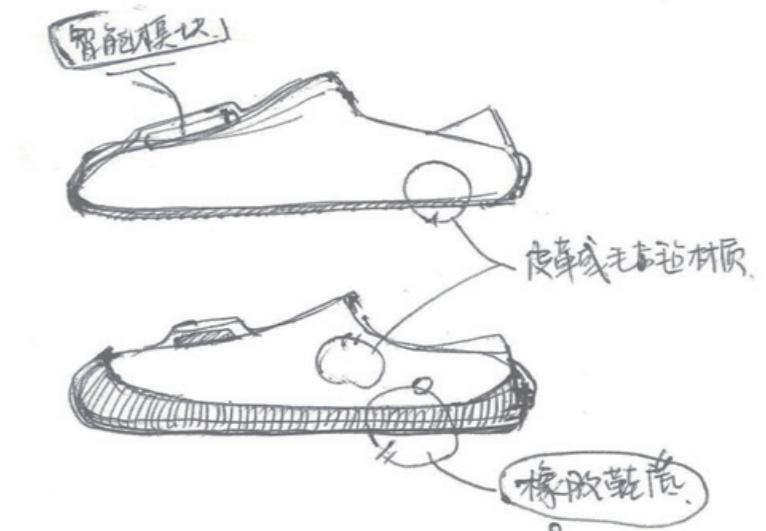
INITIAL CONCEPT  
PLAN1



PLAN2



PLAN3



## MY JOB

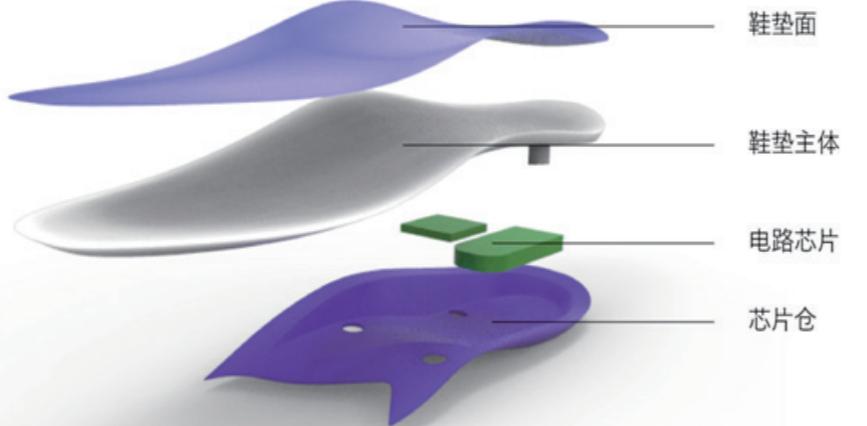
在多次的试验后，我选择了右图的方案作为最终方案。它既可以很好地贴合用户的脚底，又能够保护足下的芯片。足弓的硬质材料不仅能够防止扁平足，还为芯片摆放提供了空间。

After a number of tests, I chose the plan pictured to the right as the final solution. It can be a good fit to the user's foot, but also protect the chip. the arch of the hard material can not only prevent flat feet, but also provides a space for the chip to be placed.

FINAL DESIGN



STRUCTURE



PRODUCTION PROCESS



## MY JOB

在项目中我设计了产品的外形，结构和手机以及电脑端的app。最后我还把产品概念制作成了视频。扫描下方的二维码就可以看到。

In the project, I designed the product shape, structure and the mobile and computer app. Finally, I made the product concept into a video. Scan the QR code below can to watch.

Efficiently comprehend this program,  
please click here to watch the video.



1  
软件功能

### 智能目标推荐 选择适合您的运动计划

根据用户输入的个人基本信息，跟数据库分类人群进行对比，计算该用户的身休状况与正常人群的偏差，在计划库中提供相应的运动建议。



2  
软件功能

实时私人教练，  
随时随地，享受专业指导！



3  
软件功能

### 户外引导， 今天居然不想宅

智能化运算，让久未出门的用户向户外活动，同时根据用户所在的地理位置，对相对区域内的用户进行同一运动场所的引导，使相同类型的用户集中在一起。

## UI DESIGN



# Express System

PM

云骐快递系统是浙江大学和华立集团的合作项目。该系统搭载于华立开发的智能电动汽车，首先试用于用于公司在云南省的药品输送。云骐结合互联网及传统的快递车辆将电动车辆进行一系列硬件改进，包括同车配备的平板电脑。通过车载段和客户端的连通，可以大大提高运输的效率及利润。

此外，它提供了更好的交付体验，解决了物流运输的“最后一公里”。

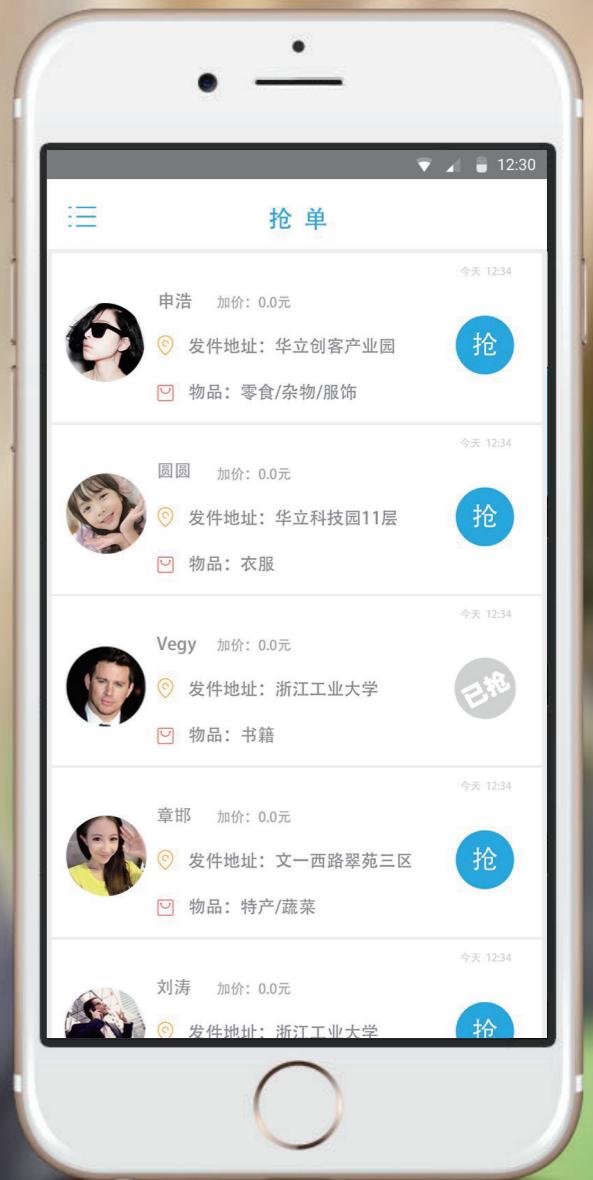
Yunqi is an express system designed for smart express vehicles of Holley Group Co.,Ltd to use for medicine deliveries in the Yunnan Province. Yunqi combines the Internet with the traditional express vehicle. We equipped electric vehicles with a series of hardware improvements, as well as binding a tablet to each vehicle. With the terminal app and client app, it can improve efficiency. Besides, it offers a commitment to a better experience for deliveries and provide a solution to the "last mile" problem in express deliver-

Duration | July 2014 - Oct. 2014

Team | 3 Designers + 2 Programmers

Company | Holley Group Co.,Ltd + Yunmake Technology Co.,Ltd  
+ Kunming Pharma Corp. + Best Express

Website | <http://www.yuntick.com/h5/site/>



## MY JOB

在这个项目中我担任了产品经理的角色。因为第一次引导一个完整的产品，技术总监给了我很多的指导。

这期间我与两位UI的同学完成了产品调研，确定了产品的确切功能，同时完成了产品的UI设计和视觉设计。

In this project, I acted as product manager. Because this was the first iteration of a complete product, the technical director gave me a lot of guidance. During this period, two UI students and I completed product research to determine the exact function of the product, while completing UI design and visual design.

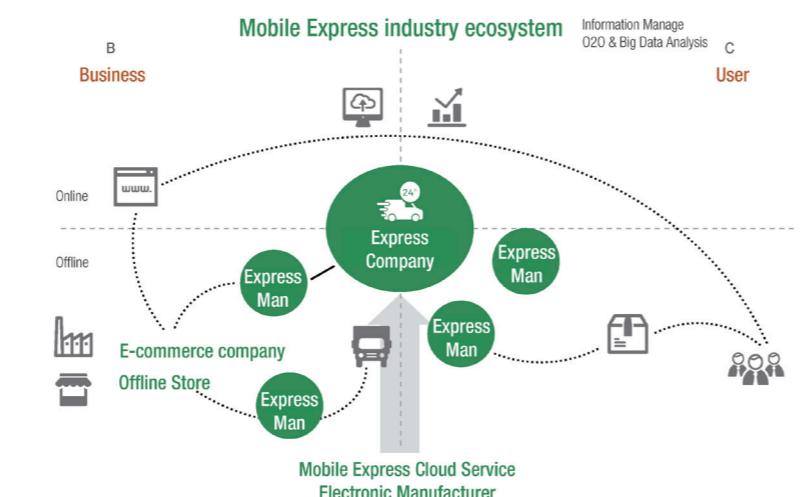
## PROBLEM

1. The rapid expansion of E-commercial in China.
2. Every day 25 million packages need to be delivered within 24 hours.



## SOLUTION

The direction of Internet development is towards O2O, cloud computing and big data. And users' habits have changed dramatically, smart express has a great opportunity.



Interview Photos



## USER EXPERIENCE RESEARCH & INTERVIEW

### Research Object



#### Express Customers

Build persona models  
Make client questionnaire to determine the functional requirements



#### Express Branch Leaders

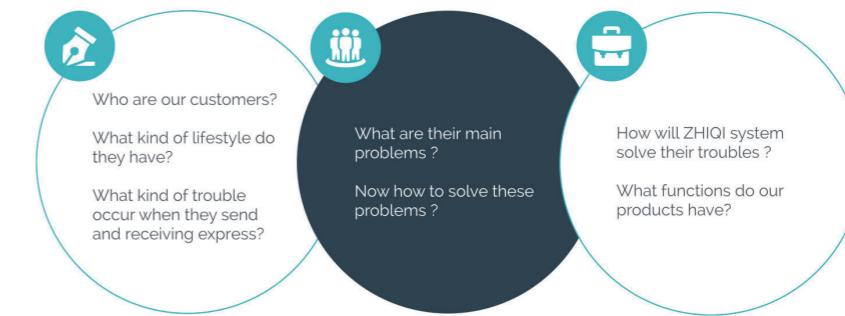
Make interviews to understand the respective area of responsibility  
courier delivery and working conditions FAQ



#### Express Delivery Men

Make interviews and questionnaires to determine corresponding function of in-vehicle app

### Goals Summary



### Persona

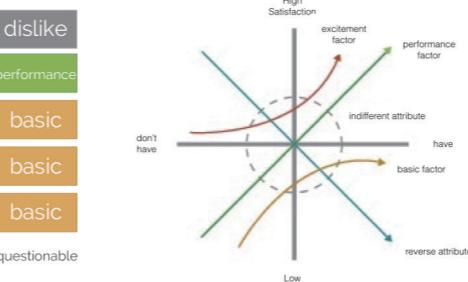
Persona 1: Customer	Persona 2: Branch Leader	Persona 3: Delivery man
<p>Name : Wang Xiaoxia Age : 28 Job : HR at Alibaba Income : 6000 / month Character : Shopping online at least 3 times per week. Receive at least 2 packages per week. Also often buy things for her parents and boyfriend.</p> <p>She general receive and send express through the front desk in her company.</p> <p>In general, she chooses the most economic express service. She hope express company can provide door-to-door pick-up service, even she has to pay extra fee.</p>	<p>Name : Zhang Min Age : 42 Job : Leader of EMS Branch in HZ Income : 8000 / month Character : He is not very familiar with all kinds of smart devices. But he can use the terminal provided by his company.</p> <p>Now he manage the logistic system for a district in Hangzhou, with 50 staff in his branch.</p> <p>He will hire extra staff to deliver mails during busy season and pay them at a higher price for phone bills. He thinks the present system work slowly.</p>	<p>Name : Li Xiang Age : 25 Job : Delivery Man in Shunfeng Express Income : 4000 / month Character : He delivers almost 120 package every day. He eat lunch at company to save time for sorting packages.</p> <p>He is good at operating smart devices and he enjoys watching videos or playing games in his free time on his own smart phone.</p> <p>He often work extra hours just to finish his task, which often reach 100 package per day.</p>

## Result Analysis

question 1: If the product don't have this function, you will feel...

	don't have	like	granted	no matter	accept	dislike
like	questionable	excitement	excitement	excitement	performance	
granted	reverse	indifferent	indifferent	indifferent	basic	
no matter	reverse	indifferent	indifferent	indifferent	basic	
accept	reverse	indifferent	indifferent	indifferent	basic	
dislike	reverse	reverse	reverse	reverse	reverse	questionable

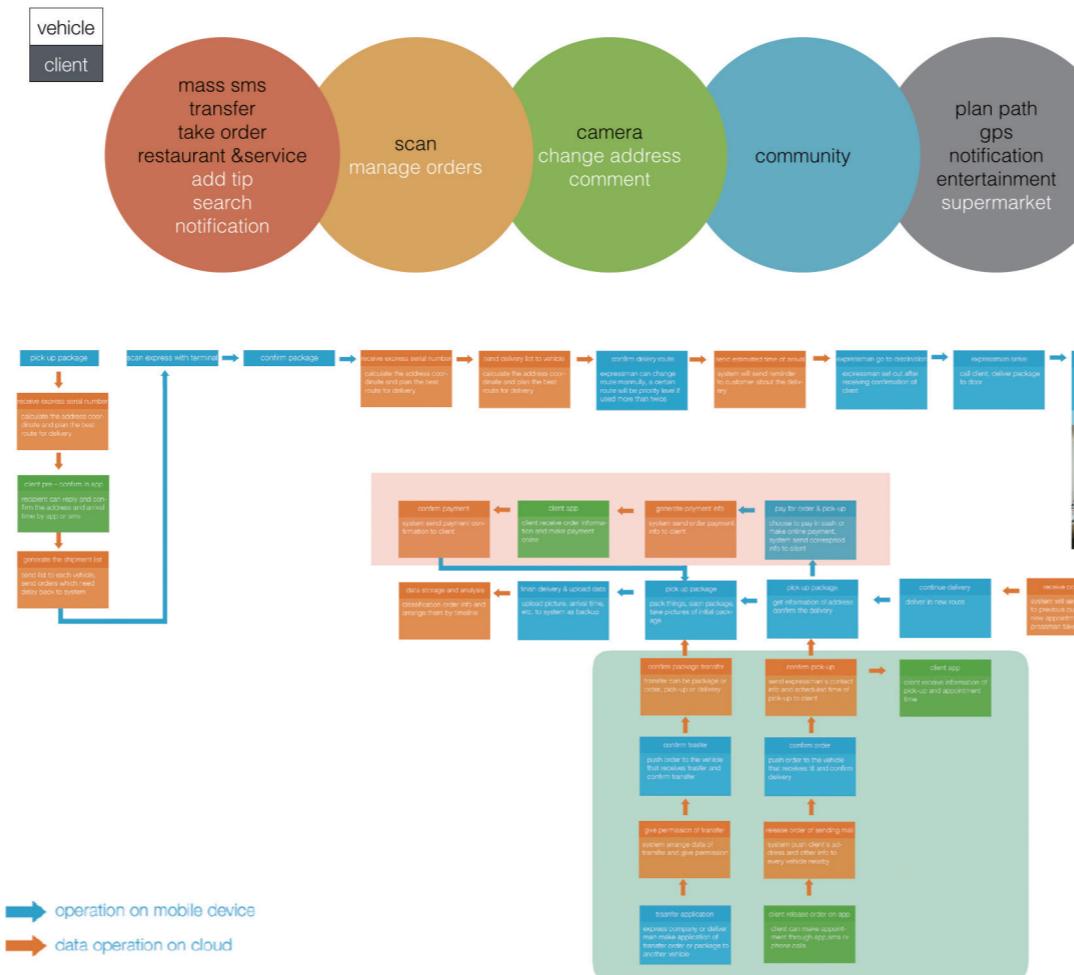
question 2:  
If the product have this function, you will feel...



## MY JOB

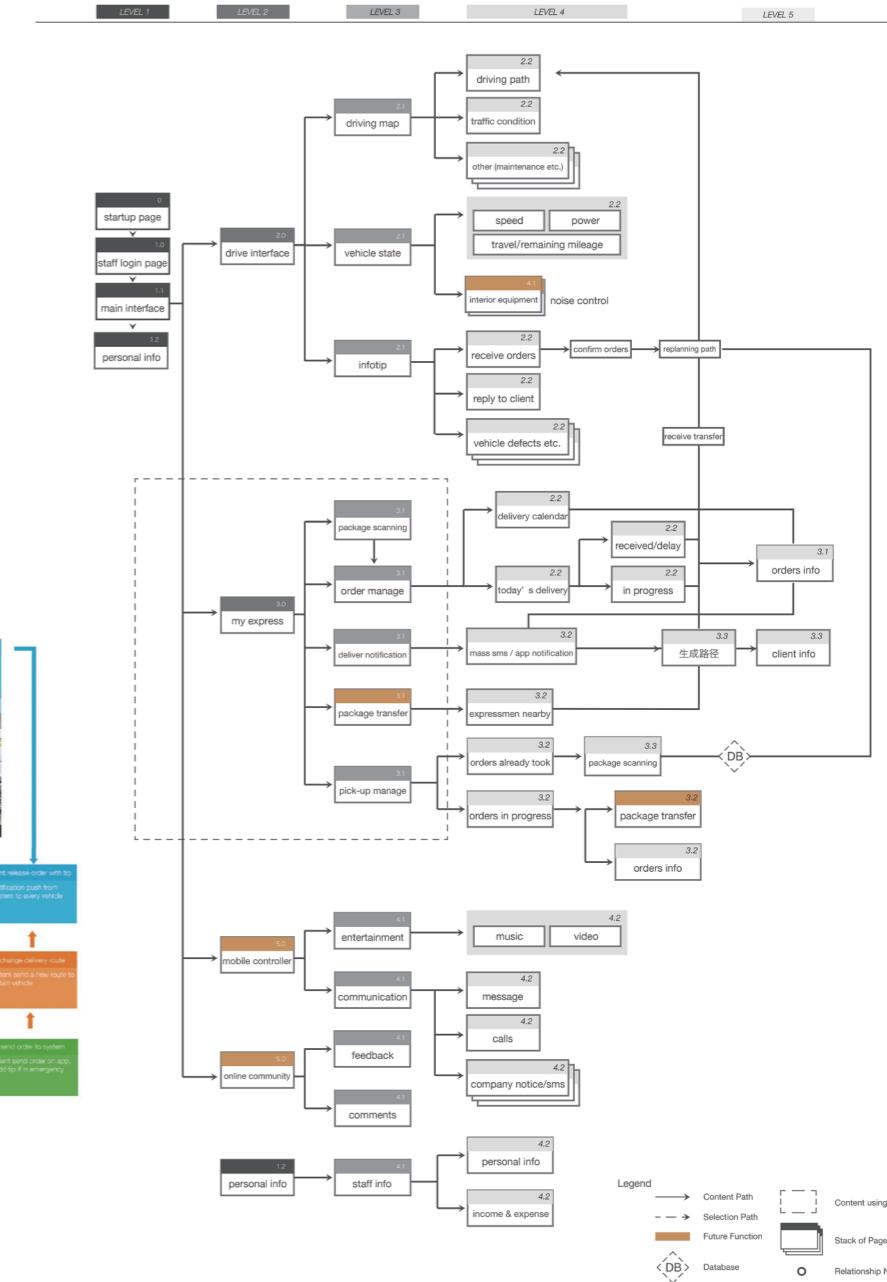
在产品调研中我们建立了三种用户人物模型，分析了他们的用户习惯；给快递员群体发放了30余份问卷，建立了用户狩野模型(KANO Model)排列了快递员端口的需求顺序，将最被需要的兴奋性需求作为主要功能放在主页面的一级入口。

In the user experience research and interviews, we established three user personas their user habits; We gave a group of couriers more than 30 questions. Though these, we learned of the KANO model where courier port demand is ordered, The prioritized requirements and placed at the main entrance of the main page as a main function.



## In-vehicle System Product Architecture

ZHIQI Express System



## MY JOB

在该项目中我们完成了该项目第一版的快递员端app设计、客户端app设计和web端管理系统。右图展示了快递员端的产品架构和交互设计。

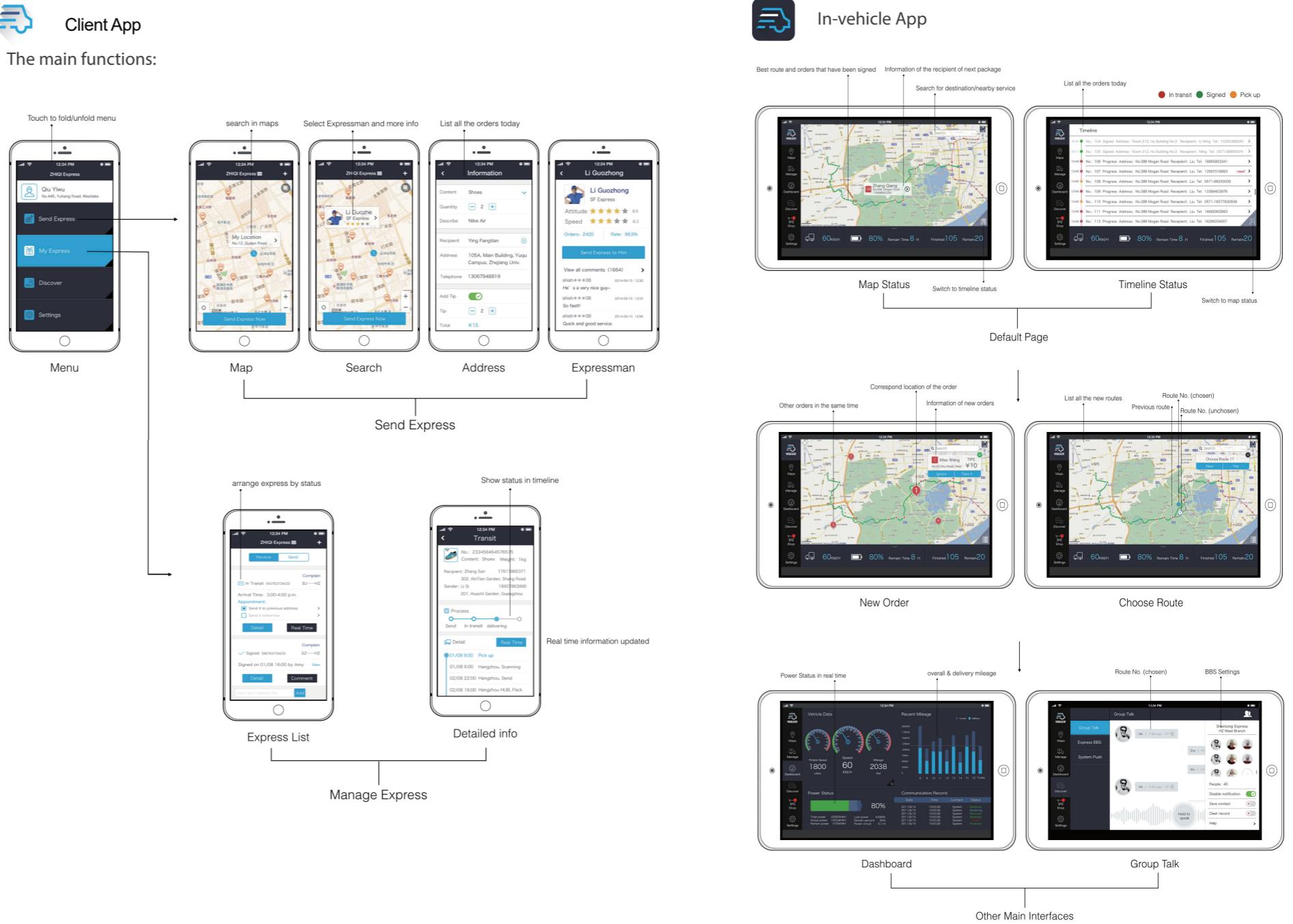
“快递宝贝”现在已经投入了实际的使用中，并与圆通速递、申通快递、中通快递、懒猫洗衣等达成了合作关系，产品版本也在不停地迭代中。

在安卓市场和APP Store搜索“快递宝贝”可以下载该产品。

For the project, we completed the first version of the project courier-side app design, client-side design and web-side management system. The figure on the right displays the courier-side product architecture and interaction design.

“Express Baby” has now been made available for practical use, and with YTO Express, STO Express, ZTO Express, Lazy Cat laundry and so reached a cooperative relationship, the product version is constantly iterative.

In the Android Market and APP Store search "Express Baby" to download the product.





— 设计研究 —  
Design Research

# Alibaba GUI Research

Team member

这是与阿里巴巴国际站视觉团队合作的项目。为了让国际站有更好的用户体验，我们对253名外国友人进行了眼动仪测试，并且问卷测试了他们的用户行为。我们最终的项目成果被记录在阿里巴巴集团的设计手册中。

With the demand of the Alibaba Internet UED team, we tested 253 foreigners' eye movement and gathered human behavior data to research the user experience of the Alibaba website. We finally outputted the design wireframe and principles for the Aliexpress website.

Name | Alibaba GUI Research

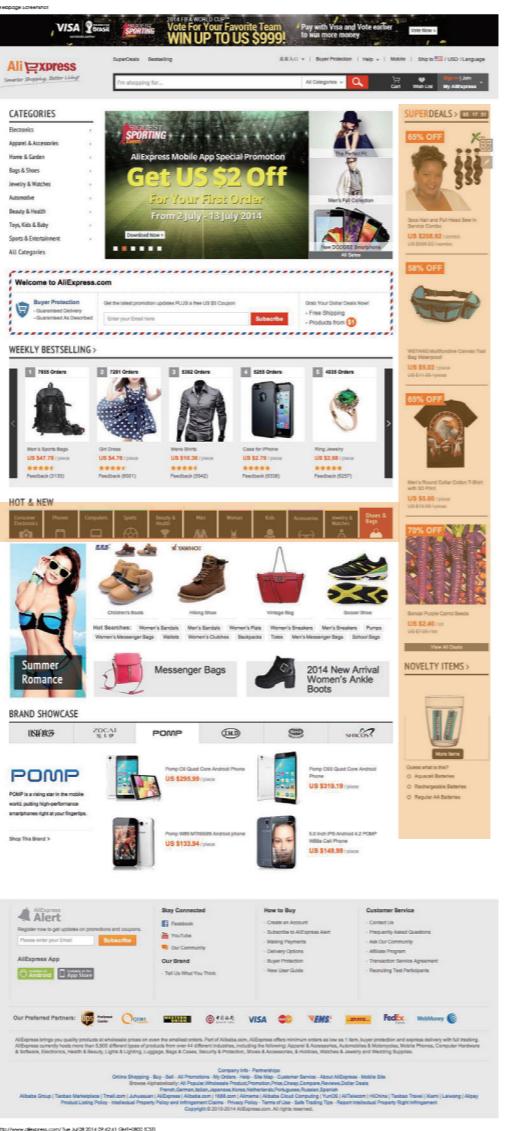
Duration | Sept. 2015

Team | 12 Designers

Company | Zhejiang University + Alibaba Network Co., Ltd.



Eye movement results for the old Aliexpress homepage.



first screen

The old home page of AE tried to lead the users to look through the whole page by the right side ads. The categories are folded to let the users choose easily.

second screen

But from the results of eye movement experiments, the ads indeed lead the users( from 10 to 11 ), they also confused them a lot.

- Some thought that while they were reading the second page, they didn't know where the ads came from.

- Some thought the folded categories don't match their reading customs.

third screen



## MY JOB

在这个实验中，我参与了实验的设计环节，我们综合了往年论文的结论，并将有用的信息与阿里的同事分享，并且一起讨论了实验的结构，并且招募外国友人进行了实验。

In this research group, I participated in the design of experiment flow. We generated the ideas of the paper, shared the useful information to Alibaba's colleagues, discussed the structure of the experiment, and did the experiment with foreigners.

## CHALLENGE

设计实验流程是一个很理性的过程，需要我思考得更加严谨，在博士生和阿里巴巴同事的帮助下，在这次的实验中我学会了很多。

Designing the experiment was a very logical work, which required me to think more rigorously. With the help of Ph.D. students and Alibaba colleagues, I learned a lot through this project.

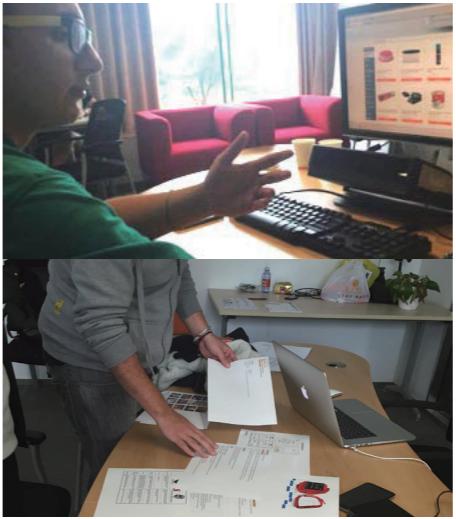


### 1 Competitive experiment

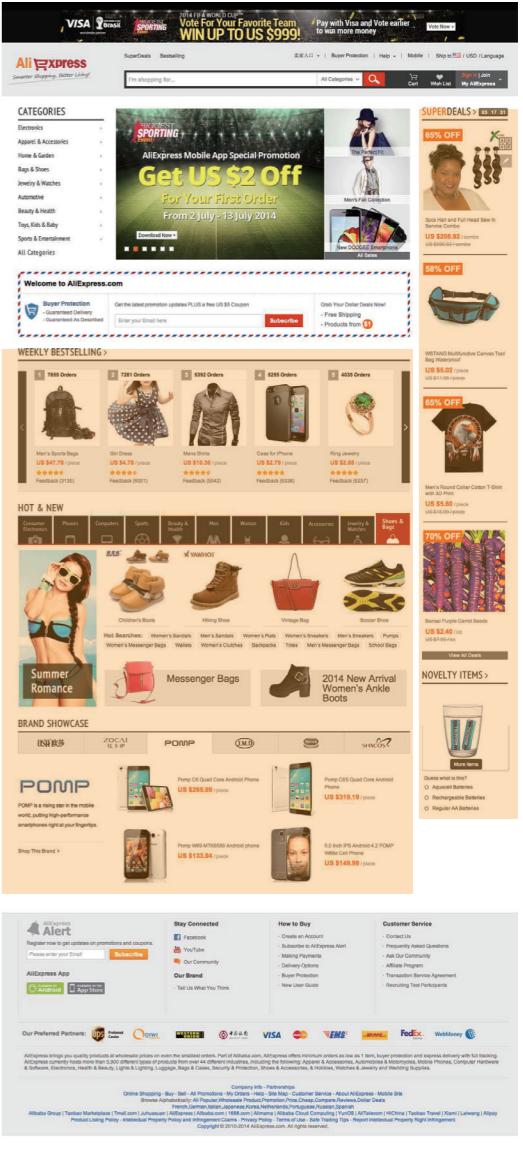
From the eye movement of competing products, it can be seen these eye movement paths overall are very smooth downward.

### 2 Subjective interview

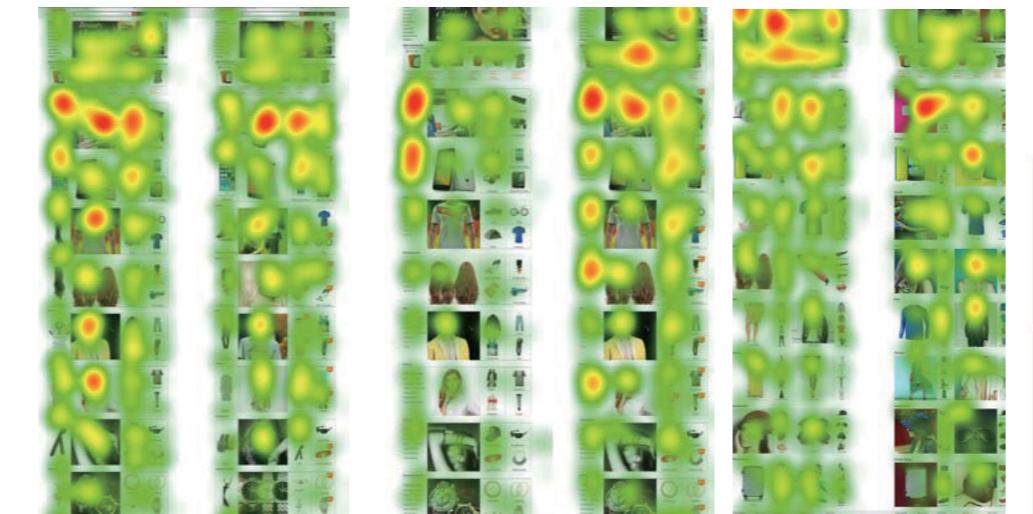
- The category and Banner are very important electronic business website logos.
- Web page length is not very important.
- Text on the bottom can be helpful.



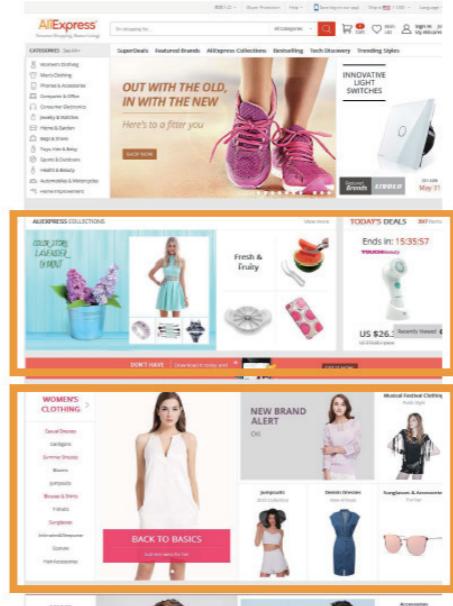
### 3 Determine the variable



### 4 Change material variables, conduct experiments



### 5 Final output



# xWeave / 千编万化

Team Member

编织工艺由来已久，这项技艺集材料体验、手工编织和设计创作于一体。千编万化项目，是我们团队在编织工艺领域的设计探索。我们研究编织工艺的基本方法，加以数字化设计工具进行提升，不仅增加了编织花纹的多样性，又在立体造型方法上实现了拓展。

The weaving craft, an integration of material experience, hand-sewn skills and creative design, continues to drive the creativity practice, which existed from the arts and crafts era. For xWeave, we situated specific craft-based design in a wider historical context of fabrication-aware design: digital craft, as a fabrication approach, revitalizes traditional handicraft through an integrated and powerful connection in material, structure and form.

**Duration** | Sept. 2015 - April. 2016

**Team** | 4 Designers + 1 Programmers

**School** | Zhejiang University

**Publication** | CompuWoven: A Computer-Aided Fabrication Approach to Hand-Woven Craft. CHI 2016



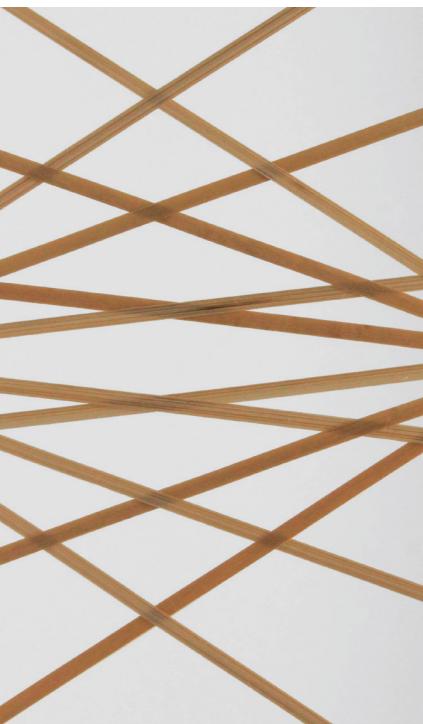
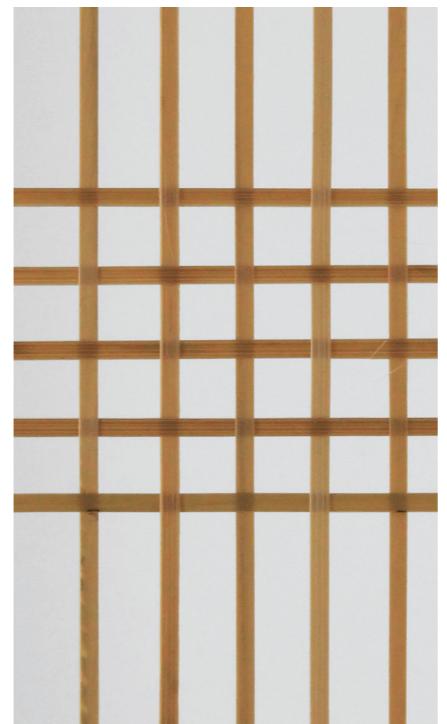
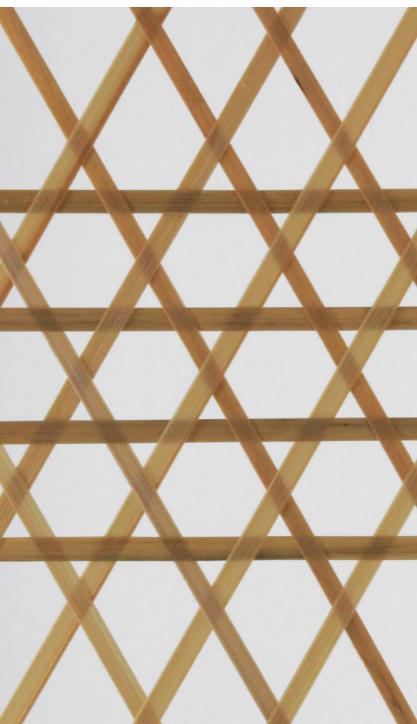
鉴于传统竹编造型所需要的模具，以及丰富的编织经验等不确定因素，我们尝试创造的数字化制造方法，既可以简化工艺制造部分的难度，又增加了单材质编织的可选材料，从而推动设计实践的创造力。其中参数化设计技术让我们可以运用简单代码设计复杂事物，参数化辅助编织工具的创造，起到了连接设计与制造的作用，使设计预期与实践结果得到统一。

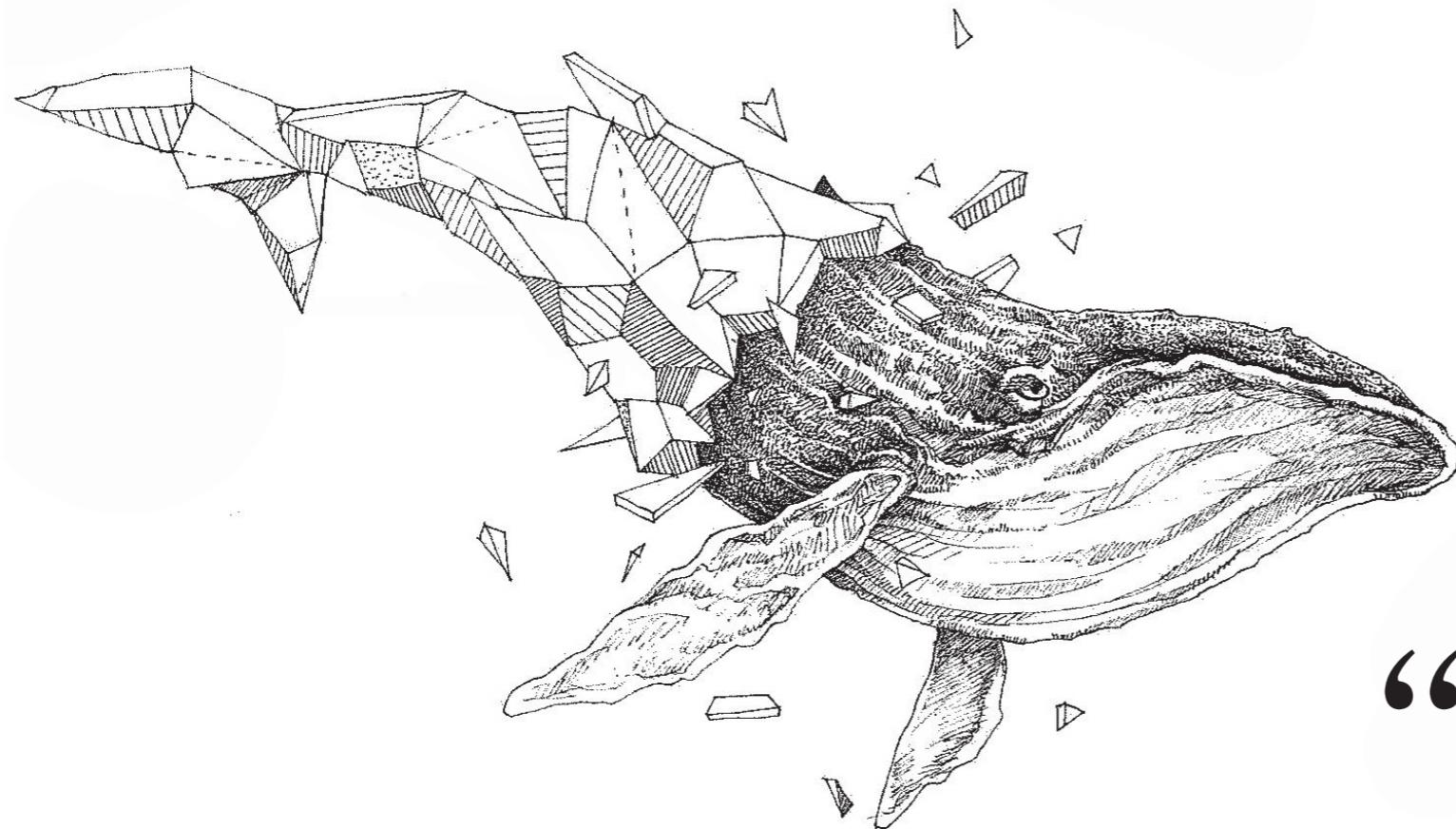
A computer-aided design and fabrication tool was implemented to allow users to create a variety of woven items more readily and efficiently with more linear materials that lend supportable properties (e.g., bamboo, thin wood, stiff paper, or wire.).

## MY JOB

在项目中，我利用 Rhino Grasshopper 参与编写了辅助编制的程序，并设计了右图中的产品案例。

In this group, I participated in the programming of xWeave app through Rhino Grasshopper and designed most of the demo of the program.





“

I'm Joyce.  
Looking forward to hearing from you.

+(86)15267070376

lunannan.cn@outlook.com