

CAT SEX TOY

2017 | Physical | Individual Project
#cats#mating#environment#ecosystem#mechanical#arduino

INTRODUCTION

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BRIEF

Maomao is an acupressure-based toy for cats, which helps satisfy a cat's sexual needs and calm them down. By reducing cats mating call, it enables cats and residents to live in a harmonious and ideal environment and ecosystem.

Recently there is a sensational news which reports: 5 kittens were brutally killed with blood-holes all over, as residents in Dalian no longer endure their rutting howl. ([News resource:info.3g.qq.com](http://news.resource.info.3g.qq.com)). The news isn't the only one of its kind. Along with the further joyous relationship between people and domestic pet, the relationship between city residents and abandoned stray cats has worsened over the years because of its growing population. Stray cats' population in Beijing is still estimated to be around 5.12 million after ten years of controlling treatment since 2008, and it's still an annoying problem to both the government and residents.

According to Charles Darwin's saying, behavioural interactions do exist between species. When living with the human being, cats have acquired skills such as asking for food, communication and using tools, and as human we create this sex toy for cats, leading benefits for both sides.

Imagine this :

The daytime noises have faded away, you've finished watching the news or the late show and finally got to sleep, and then feral cats begin to howl, they are screaming louder and louder. You try to sleep, but those creepy screaming continually annoys you. **Until** the invention of Maomao, a cat sex toy, things finally become different



The video is a short stop motion about the story: <https://vimeo.com/230967831>

UNDERSTANDING - RESEARCH ON PEOPLE

People’s attitudes

“What on earth worsens the relationship between human and feral cats? What’s the attitudes of people?”
I did a series of research on community’s attitudes on feral cats, including: interview, survey, field Study, affinity diagram.



Result

The conclusion of 69 questionnaires shows that half of the people had seen feral cats in the past fortnight, and half of them expressed their dislike towards such animals, mainly because of their night-time howls; another reason lies within their potential and infectious diseases, leading a contamination problem. However, attacks from such animals rarely occurs.

The other half of people who liked cats expressed their enjoy for the creature’ cuteness (85%), while 30% of them thought feral cats could help in maintaining eco-balance, increase biodiversity and act as pest predators (rats).

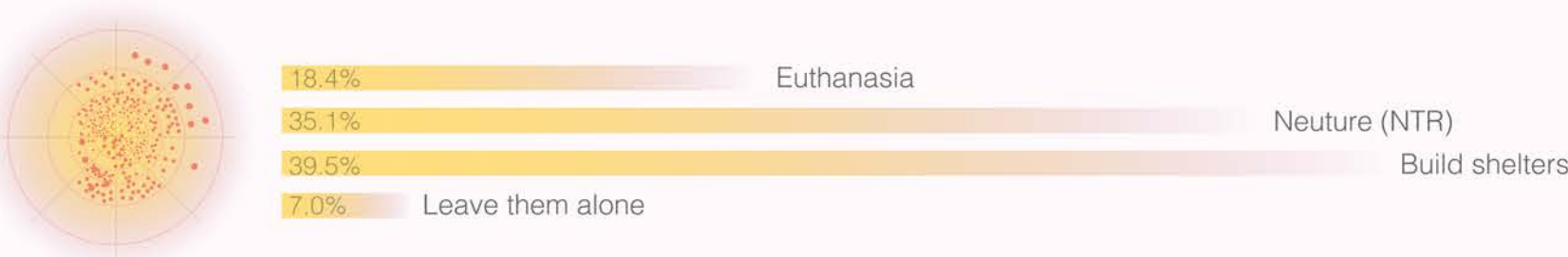
As to the approaches and countermeasures to the feral cats, great differences exits between two sides .(differences details unrelated) First, ways of asexualization are both agreed on, which explains why TNR (Trap, Neuter, and Return) is internationally accepted. However, only half of them (20%) accepts euthanasia onto the animals. Moreover, half of the persons that are surveyed think that we should provide shelters or more humanized help to feral cats.

Conclusion

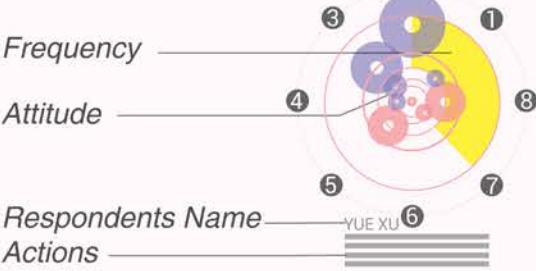
In conclusion, 50% of people expressed negative emotions towards feral cats, with “night-time howls” being the main reason. As to measurements to deal with them, neutering is still highly accepted by the public, while acceptance rate on euthanasia (20%) is higher than expected. More than half of participants think we should build shelters for the animals and treat them more humanely.

RESEARCH SYSNTHESIS

Samples Visualization



Legend



Attitude on feral cats and reasons



Frequency of seeing feral cats



UNDERSTANDING - RESEARCH ON CATS

I closely observed my roommate’s cat’s behavior on different stages of the estrus, and went through other methods that help cats calm by contacting pet owners, and got first hand material on how these methods were conducted.

Study on breeding & behaviour

The frequency and time for a cat to behave in heat is of much uncertainty, but in most cases, a cat will be very aggressive while in heat, making it difficult to neuter. While most courtships are started by the female. Therefore, distracting the female’s attention, consuming her energy and satisfying her sexual impulses, can effectively reduce the times of a female to calls out for a male at night, eventually making a quieter environment, while maintaining the feline population from bursting.

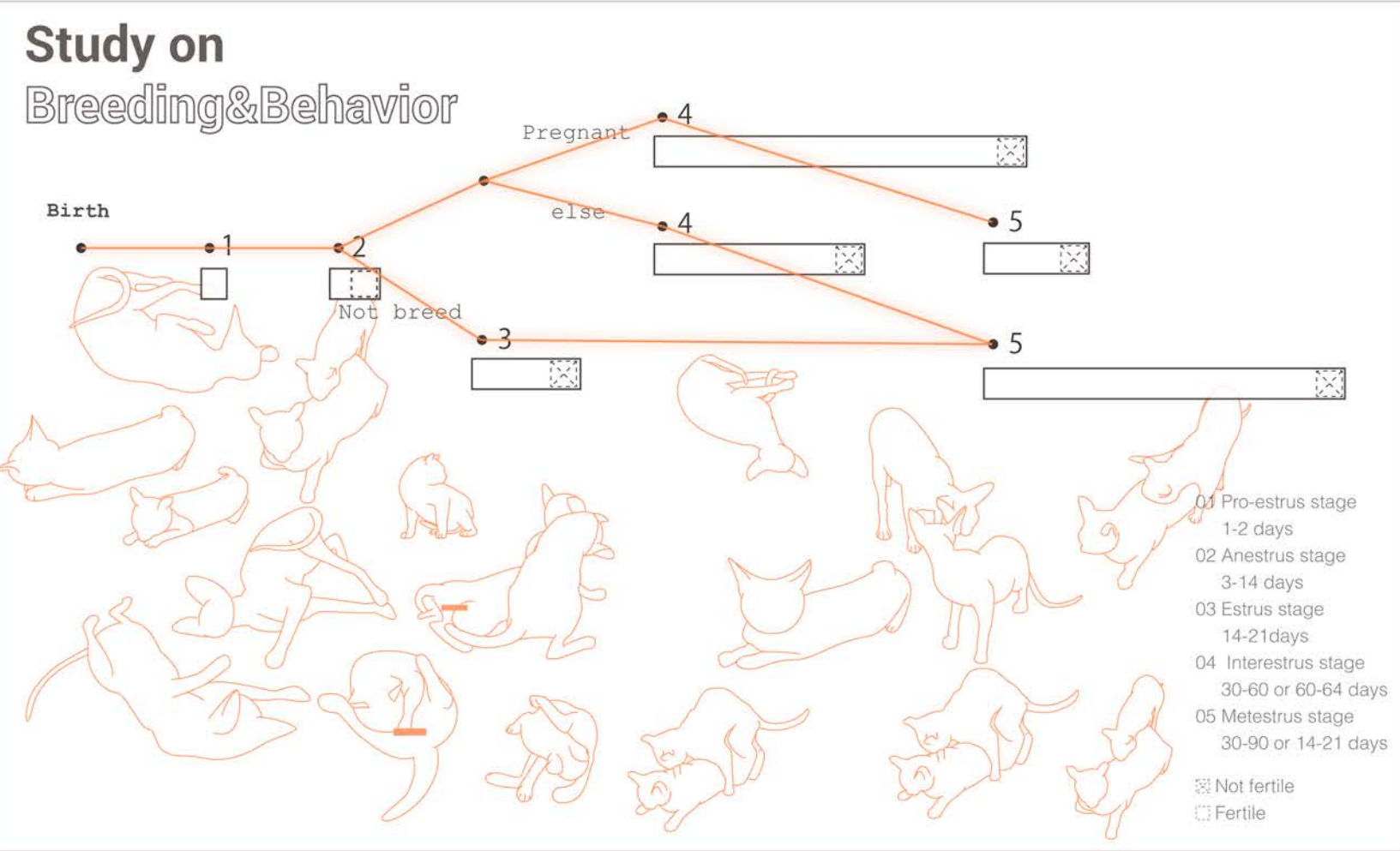
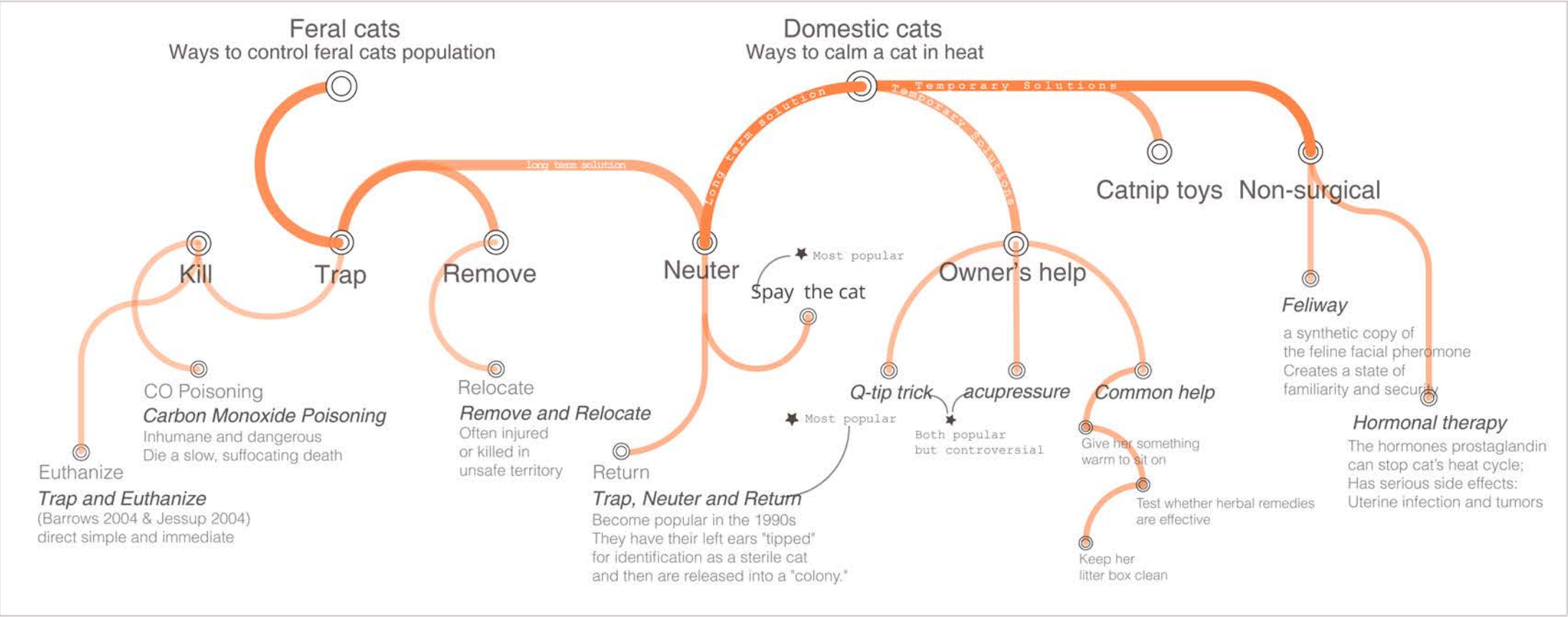


Figure: acupressure

Studies about cats population control

The diagram above shows conventional ways of dealing with cats in heat. While neutering is the prior way to deal with feral cats’ overpopulation in the long term, not every cat has the physical capability to receive a procedure like that. Also, temporary measurements such as the Q-tip trick and acupressure need the owner’s involvement, spending time and energy,which remains controversial.



Ways to calm cats

Apart from methods such as medicine and neutering, some pet owners choose to dissolve their pet cat’s sexual de-sires by themselves.

For example, some owners would purchase cat toys with catnip, and latex-based toys for the cats to rub their bodies; Some owners used Q-tip trick for their cats; But, the most sanitary way was Acupressure, by massaging certain areas on the cat’s hip (left figure). According to pet owners’ past experience and field test, it is an effect method.

CONCEPTUALIZING

Generating and filtering opportunities

After scanning SET factors, brainstorming and doing different research paths, I generated 6 opportunities:

- 01 a highly effective system to trap feral cats
- 02 a more effective system to execute Trap-Neuter-Return (TNR)
- 03 an outdoor product to neuter cats safely
- 04 a safer and more comfortable transportation equipment of cats
- 05 shelters for feral cats
- 06 products to release feline sexual impulses ✨
- 07 professional products to replace Q-TIP and Acupressure ✨

With the help of weighted matrix, I shrunk the six of above opportunities into two: 06, 07.

Scenarios



01

Ming was the principal of property management of an residential area.
Lately he's been receiving constantly the complaints about feral cats' night-time howls, but without the technology and enough manpower, to lure or trap cats to perform TNR is difficult. And he couldn't accept simply way of killing . He knew the cats often stayed in the corner of the underground car parking, but capturing them is not so easy unless the vast manpower involved.



02

Hong had raised some pet cats.
A six-months old of them was in heat, another one was also rutting, being aggressive. The third cat was neutered recently, but still had hormones floating inside her.
The three cats followed her around all day, rubbing their bodies on everything, and making a lot of noise at night, Hong found it hard to sleep. She tried to distract them with several kinds of toys but they grew tired of them very soon. That brought much troubles to Hong, but she was reluctant to help them with Q-tip , she thought that embarrassing and time-consuming.

Product opportunity statement

A feline sexual-release product here is produced to replace Q-tip and Acupressure, it should be functional, safe for users, and simple mechanism based. It should have soft and none-aggressive appearance. The main users are female feral cats and domestic cats, purchasers of the product are the pet owners and related departments responsible for feral cats control.

What will it do?

For stray cats, this product aims to satisfying some female's sexual need, making them less active in courtship, thus reducing howl and promoting the harmonious relationship between cats and humans.

For domestic cats, it helps:

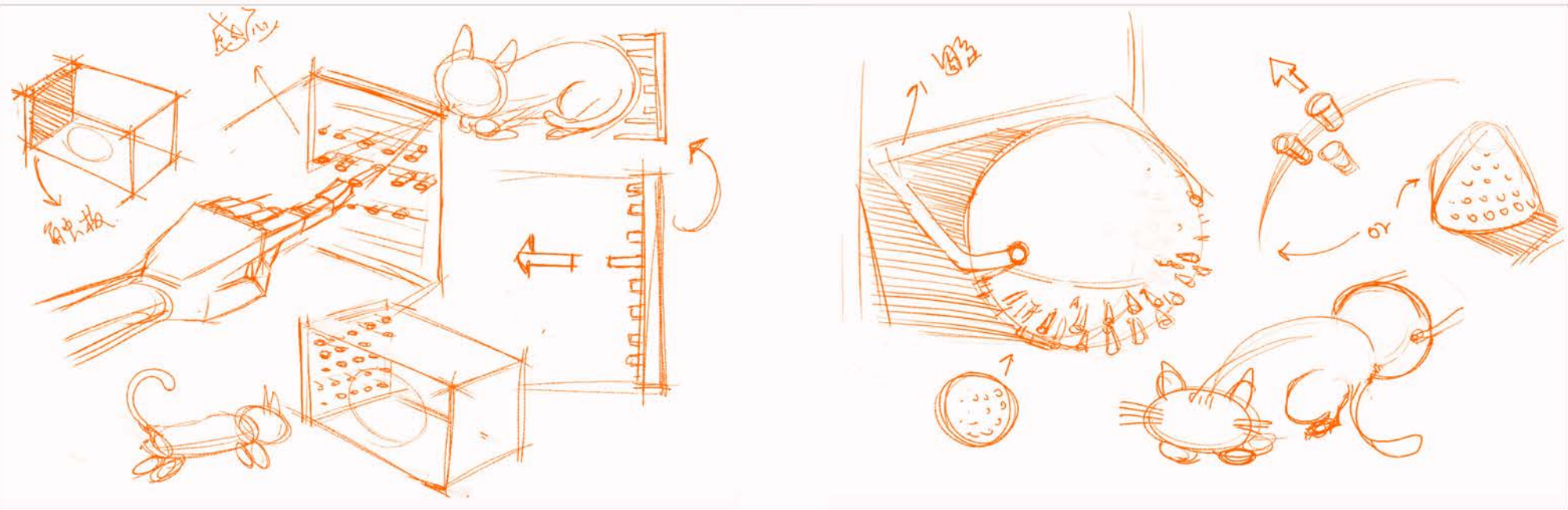
- Those who are not suitable for neutering because of being aggressive;
- Those who are in heat but not physically sexually mature;
- Those who still have some ovarian tissue left after neutering, and comes on heat again;
- Those whose owners prefer not to put the animal through any kind of body modifications;

Potential customers

For residential area managers, pet owners, pet shop owners and community volunteers

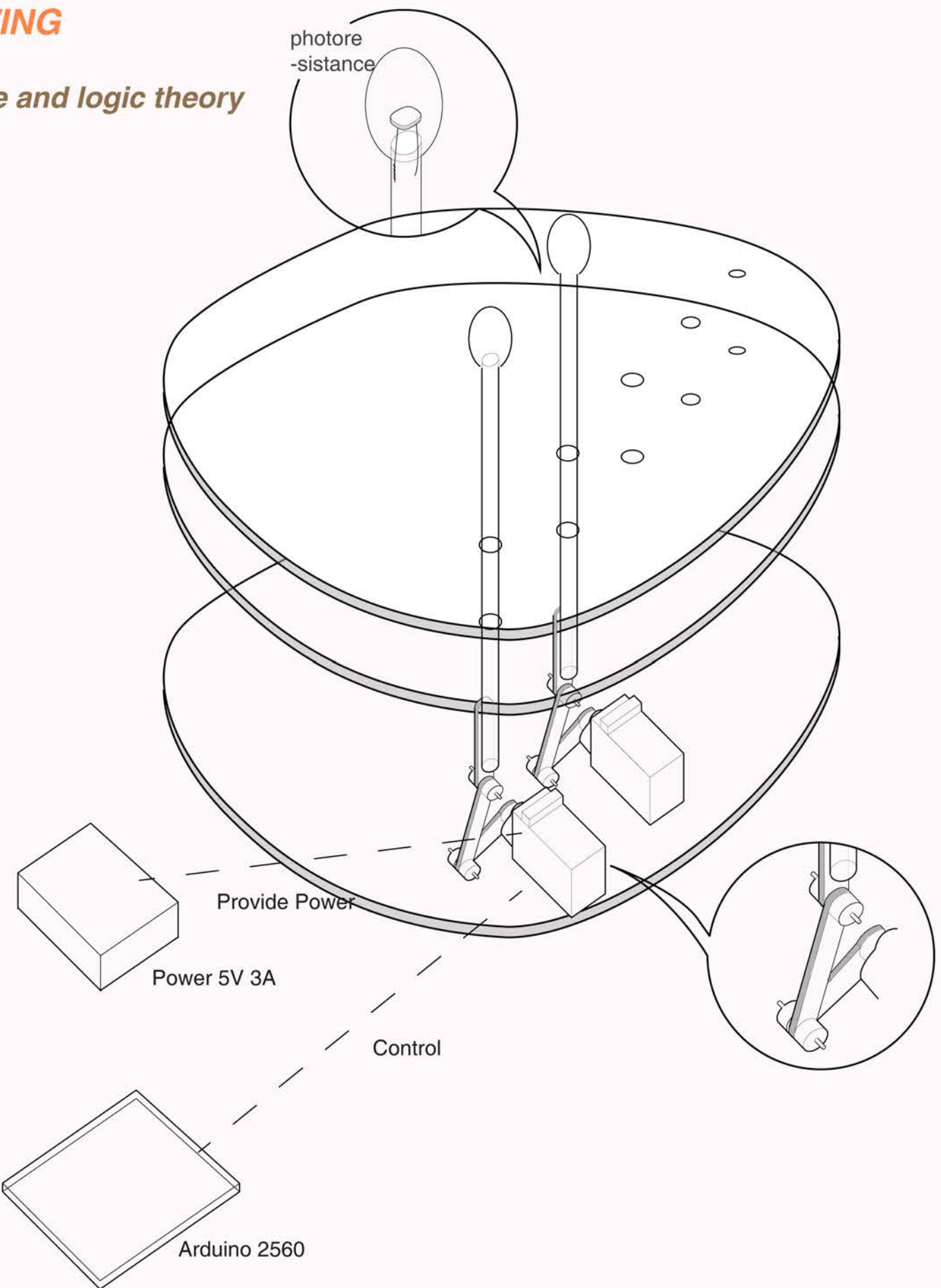
Psychological descriptors and semantics

Material playful, soft, warn, erotic, with great texture, and less offensive that cats would like.



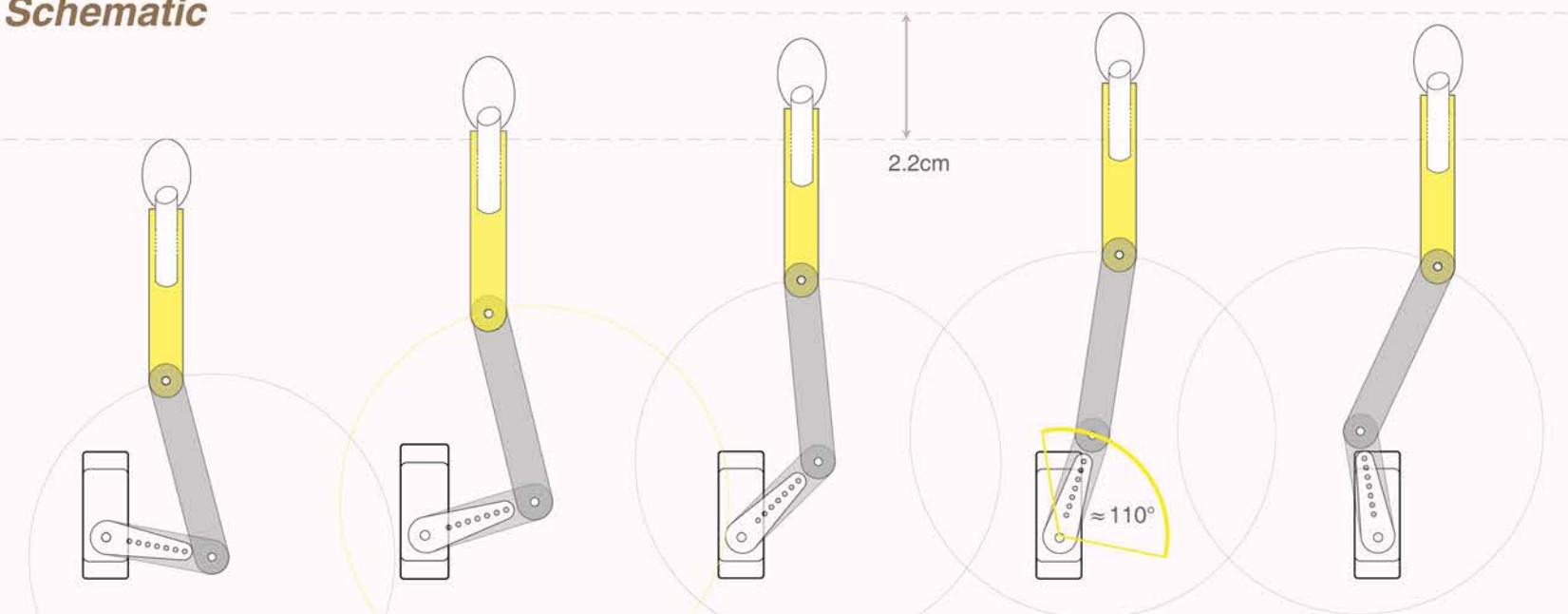
REALIZING

Structure and logic theory



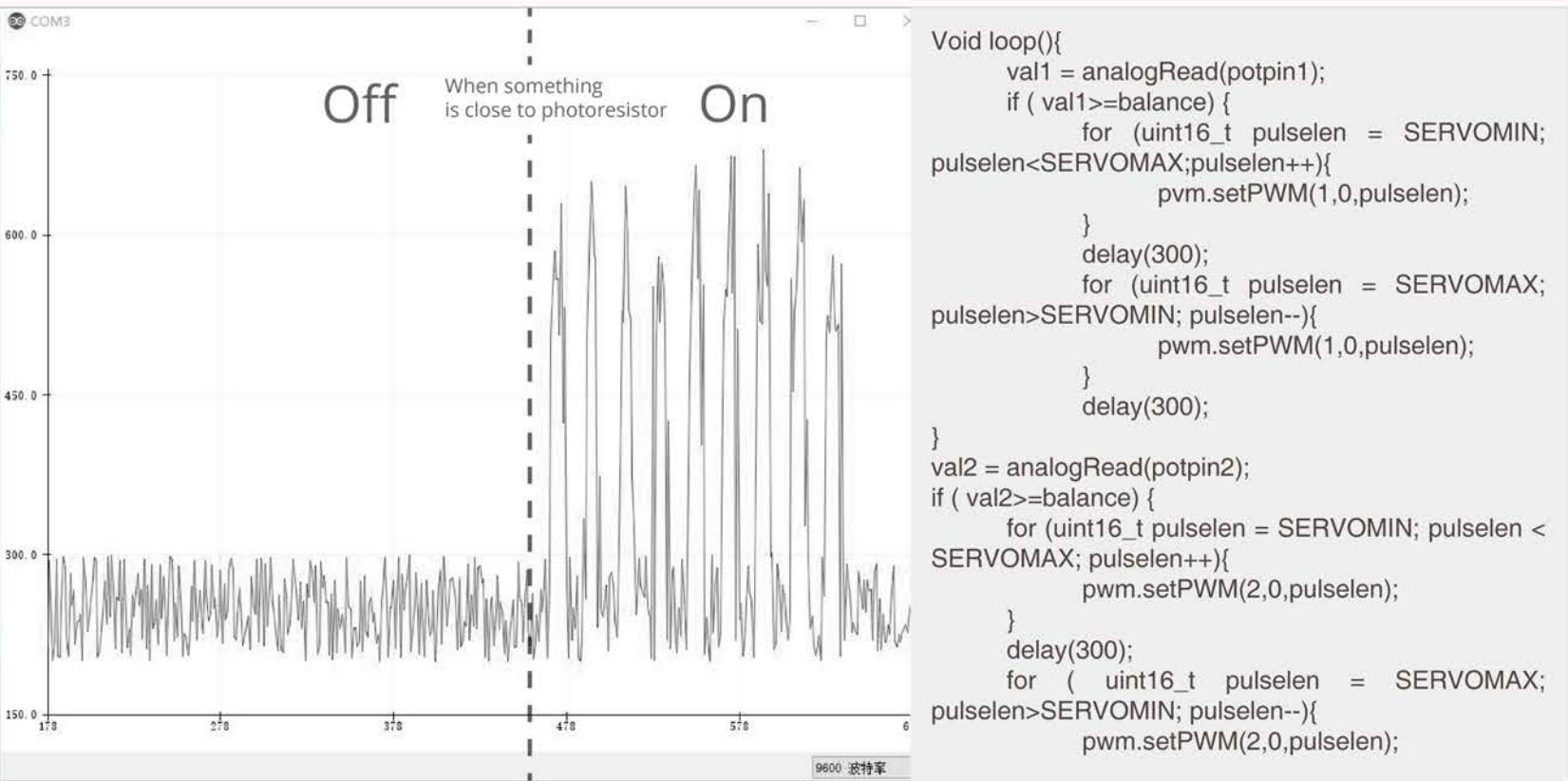
REALIZING

Schematic

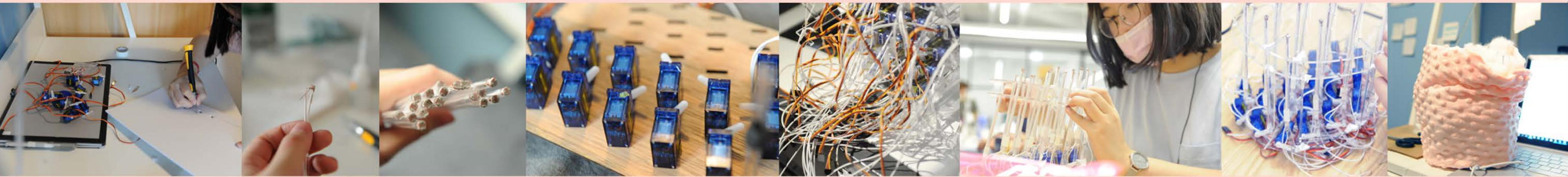


Light sensors on the top control the steering engine, which leads to minor movement of the top through connecting rod, simulating acupressure.

Arduino test & control



Models and iterations



Version 1.0 (Paperboard Base)

Version 2.0 (Woodenboard Base)

Version 3.0 (Acrylic structure)

Version 4.0 (Cloth appearance)



Calculation sketch

3D printing

Laser cutting

Testing

Challenges and solutions

- 01 For better locating the cat's hip, multiple photoresistors were used.
- 02 In order to keep the photoresistors working, translucent resin was used to 3d-print the oval-shaped top part.
- 03 For comfort, sizes and shapes of the top were tested and modified.
- 04 After studying and learning from existing products in the market, catnip is added and used in the toy to lure the cats and help form cats' behavior pattern.
- 05 From the product semantics point, soft and pink furry exterior was used to prevent the fearful and resistant emotion from cats, the product is tried to be a stuffed toy.

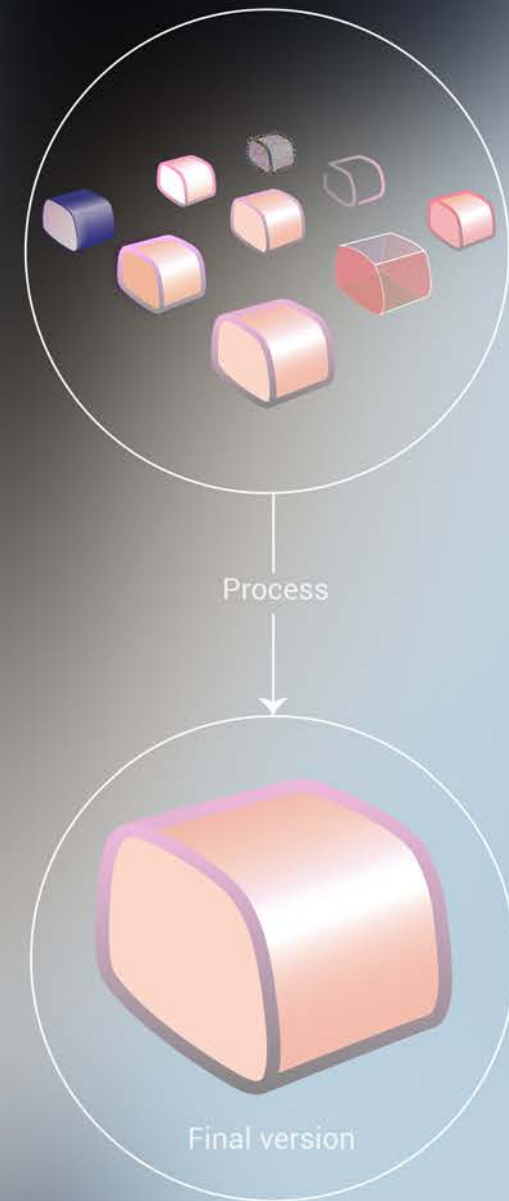
Remained problems and future steps

- 01 Uncertainty of photo-resistors. Since each photosensitive resistance is different, each photosensitive resistor's numerical value is different.
Possible Solution:
Use stable light source or stable transduce;
Use other types of sensor such as thermo sensitive sensors;
Use new valuing method.
- 02 How to locate cat's hip more accurately?
Possible Solution:
Use image recognition method like machine vision;
Use thermo sensors since temperature is higher around the cat's genitalia.

FINAL WORK

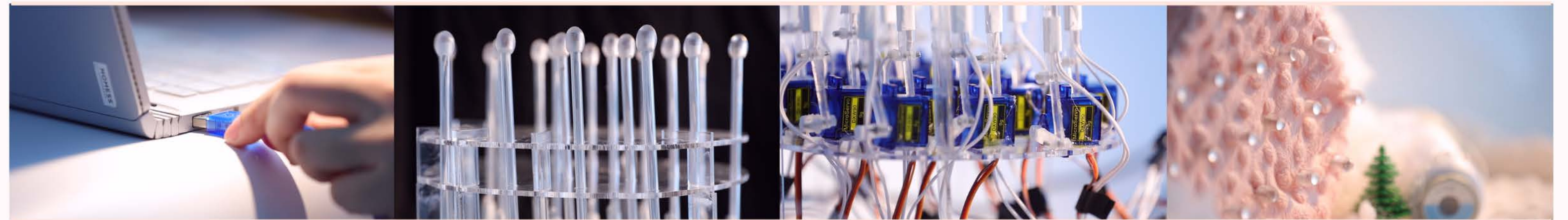
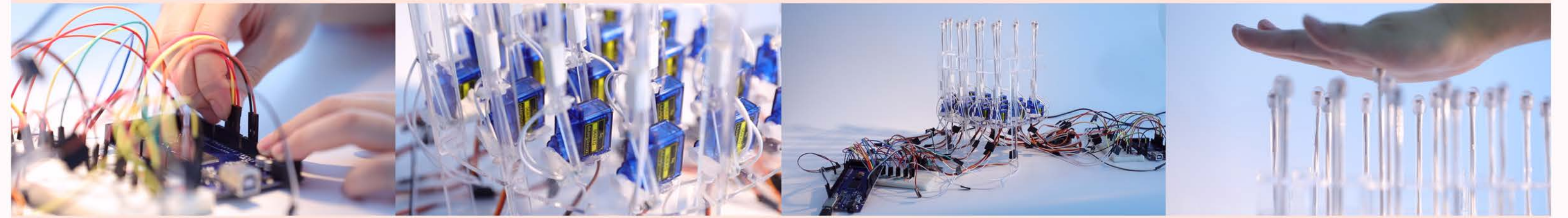


LOGO



FUNCTION AND APPEARANCE

Final Video: <https://vimeo.com/230967560>



When cats' hips get close to the photoresistors, the acrylic tubes start to move. From the reference of Q-tip and Acupressure, the product simulates the latex rubbing cat toys, one side of it will have many bumps. When cats rub their hips against those, the bumps will move up and down correspondingly, massaging the area. The bumps are there for the cats to rub, to sit on, and eventually develop a behavior pattern for them.

Package the internal mechanics and tubes with soft fabric with bumps; The catnip is placed inside the product before sealing, which conveys a harmless, none aggressive, yet cozy and playful product semantic.

View my site: www.hanaruoxili.com