



Hi, I am

Chen, Kai



陳愷
Chen, Kai

Language

English-TOEIC 685

Chinese-Native

I am an Industrial Design student with a strong focus on human-centered design, exploring how products create value and emotional connections in everyday life. My interests span Product Design, Service Design, and User Experience (UX), and I excel at uncovering user needs through observation, interviews, and field research to develop innovative and feasible design solutions. I value systematic thinking and cross-disciplinary integration, and I'm skilled in storytelling, prototyping, and visual communication to bring ideas to life. I believe design is a tool for communication and problem-solving, and I strive to create proposals that are functional, emotionally engaging, and future-oriented.

Education



National Taiwan University of Science and Technology
Bachelor of Design, Dept. of Industrial design
2022.9 - 2026.6(Expected)



Taipai Municipal Chien Kuo High School
2019.9 - 2022.6

Software



Recognition



2024.6 A+ Cultural Heritage Creative Award, Bronze
Matsa blue team sorghum wine glass



2024.6 A+ Cultural Heritage Creative Award, Finalist
Old Wine Bartending-Matsa old wine gift box



2024.10 Matsa Biennial Selection of cultural and creative products, Silver
Old Wine Bartending-Matsa old wine gift box



2024.10 Matsa Biennial Selection of cultural and creative products, Excellence
Matsa blue team sorghum wine glass



2024.11 Emerging Design Competition 2024 Finalist, First Price
AD-03, A new type of life call is designed to maintain light and signals



2024.11 Emerging Design Competition 2024 Finalist, Second Price
Old Wine Bartending-Matsa old wine gift box



2024.11 Emerging Design Competition 2024 Finalist, Second Price
Matsa blue team sorghum wine glass



2025.9 Taoyuan International Design Award, Special Jury Prize
Matsa blue team sorghum wine glass

Work Experience

As a teaching assistant for the first-year factory model-making course, I guided students through fundamental skills in model construction, including reading technical drawings, material selection, fabrication techniques, and finishing methods. I provided hands-on training with various machinery such as circular saws, grinders, laser cutters, and 3D printers, ensuring both safety and proper usage.

Beyond technical instruction, I supported course planning and tracked student progress, helping students strengthen their spatial understanding and practical skills through one-on-one mentoring and demonstrations. This experience honed my teaching communication, problem-solving, and workshop management abilities.



Summary



Wave Heaven



Cradle



Game&Donation



Mavara



Recilog



Old Wine Bartending



AD-03



Project Type

Individual/Project

Tools



096

September 2024 - December 2024

Wave Haven

Provide a cat-friendly living environment for the design of the animal home space.

Background Research



Interview Agency

Taipei Animal Shelter

Responsible for the shelter, adoption, sterilization, medical treatment, regular screening and management of stray animals and wild animals in Taipei

Adopt about 300 cats and 700 dogs.

About 6 dogs are kept in a space with only basic food plates and water basins.

About 4 cats are kept in a cage with a cat house, cat scratch board, cat litter and an easy jumping platform.

Interviewees

Animal Handlers

Interview Highlights



Cats and dogs have different personalities, cats are more sensitive and need clean space, and psychological problems are more difficult to detect. Dogs are more optimistic, and they can relieve stress when they go out. Due to the lack of manpower, it is difficult to take care of the psychological needs of each animal.

Pain Points

- Psychological problems in cats are not easy to detect and deal with
- There are too many animals to observe and care for individually
- There is a lack of effective methods to deal with animal psychological problems

Volunteer, Lee

Interview Highlights



Cats are prone to wear and tear tops and facilities, need a safe rest space for long-term sleep, and it is difficult to fully install monitoring equipment, because of the high cost and easy to be destroyed by cats, resulting in health abnormalities that are difficult to detect in time.

Pain Points

- Cats are confined to their cages for long periods of time and have insufficient space to move
- It is difficult to balance safety and observation in the design of cat houses
- Cat scratchers and cat houses are easily damaged and have high maintenance costs

Volunteer, Hu

Interview Highlights



Existing facilities can be redesigned to improve durability and convenience due to the small space and inconvenient cleaning of cat cages, the rapid wear and tear of cat scratchers, and the fragile structure of cat houses that are vulnerable to water and difficult to withstand impacts.

Pain Points

- Cat scratchers have a short service life and produce a lot of debris garbage
- The space of the cat cage is narrow, which affects the care and circulation arrangement
- The material of the cat house is not durable and is easily damaged by moisture

Design Concept

How to solve the needs of users in interviews?

Description of the Product Design Objectives

The use of modules to make full use of the space, can be adjusted according to the size of the cat's space to adjust the number and configuration of the cat cage, hoping to provide a comfortable living space for cats, so that the overall appearance of the cat cage is not as cold as a prison, but the use of color and material to make the cat relax, more according to the state of the cat in the animal home to arrange the cat's living space, the use of transparent materials to make it easier for volunteers to observe the state of the cat, and add intelligent monitoring, to reduce the chance of cats dying due to unnoticed.



•Feature Requirements

The design of the cat house should take into account the needs of the cat to hide and rest, play and grind its claws, and at the same time facilitate the observation and cleaning of the manager, with good ventilation and flexible adjustment of the configuration according to the needs.

•Technical Needs

The design of the cat cage should have the characteristics of transparent observation, modular combination, vibration detection, easy replacement of cat litter, low debris cat scratching board, quick assembly and impact-resistant structure.

•Availability Requirements

This product aims to improve the living space of cats in the animal house, the function is mainly to improve usability, and through modular design, it can meet the activities and living needs of multiple cats under limited space.

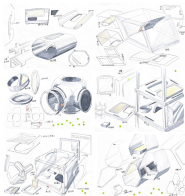
•Environmental Needs

Due to the limited space of the animal home and the high demand for cat cages, the design should aim to improve the use of space and use low-cost and sustainable materials.

Sketch

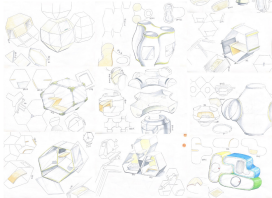
Six Concept Sketches

Think with a modular structure



Ten Sketches

Extend the idea from the selected concept sketch



Three Extended Sketches



Rough Model



3D Modeling



I want to show the feeling of bubbles filling the cabinet and create a feeling of combining soft and hard.

Found that the current design still makes the space feel oppressive

The Design has a Twist

Facing Problem

The space of the cat house will be affected by the small room, so that the environment is still crowded and oppressive, such a design can not fundamentally solve the goals set before the design, so if you want to connect the cabinets together, in a broad sense, it is a huge cat jumping platform space, and the design of three spaces to place according to the state of the cat can also increase the space for cat activities and reduce the sense of oppression of the space, and combined with technology, so that the staff of the animal house can more easily observe the cat.

Adjust the Orientation

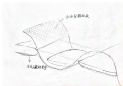
I adjusted the direction of my original sketch to use the open cat jump platform as the new design direction, and the wall as a canvas to choreograph the design, so that the wall creates a relaxing view for the volunteers and cats.

New Sketch



Attach the angled bowl to the shelves to prevent tipping and reduce pressure on the neck.

The litter box is integrated into the shelves and the splash pad is designed to fit the size of the cat's habits, and the drawer-like structure is used by volunteers for easy replacement and cleaning.



Cat Collar - Learn about the physical and psychological state of cats.

Sisal with less debris is used as a cat scratching board to reduce the burden of cleaning.

The shelves of the entire wall are arranged with the theme of ocean waves.

Function Description



Fragrance Machine

The use of the scent of southern sassafras and soft lighting can soothe the cat's mood, while the fully enclosed area can give the cat a greater sense of security and remind the public not to touch them.



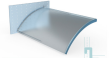
Cat Bowl

The food bowl is threaded to lock on the shelf to prevent the bowl from slipping, and the tilt of the bowl can reduce the pressure on the cat's neck when eating.



Shelves Design

The shelves are designed to be completely open and semi-open, so that cats can choose where to rest according to their preferences, and the recessed position of the shelves can become a place for cats to sleep.



Shelves Adjustability

The structure of the perforated plastic and steel allows you to change the spacing of the space, and you can freely change the position of the shelves according to your needs.



Collar

The collar uses electromagnetic induction as the basis to judge whether the cat is alive or not. Because cats sleep for a long time, the collar provides solutions to identify if cats have not moved for a long time, adding blue light positioning and southern sassafras scent to the collar to find and soothe cats.

Electronic Circuit Connectors



• Collar in case of Emergency

Light Bar



• Different Colors show Different Mental States of Cats

Wave Haven

Design Concept

The space of the cat shelter area of the Taipei Animal House was redesigned, designed from the pain points of the narrow activity space of the cats in the current Animal House and the difficulty of cleaning the staff, and then optimized the user experience according to the behavior analysis of the cats and personnel, hoping that Wave Haven can become a space that makes people happy and friendly to cats.



Cat Litter Box

The shape of the shelves is conducive to fixing the litter box, and the cat litter pads on both sides can allow the cat to leave the sand on its feet, reducing the system of personnel cleaning, and the design of pulling out allows personnel to easily replace the cat litter.

Cradle

Conservation × Education × Experience

"Sea turtle incubators that are both sustainable and educational"

Cradle is an innovative incubator for turtle eggs, featuring a thermostatic system to mimic natural nests, regulate sea ratios, and support healthy reproduction. Its nature-inspired design ensures safety and aligns with sea turtles' instincts. By integrating interactive education and sustainable tourism, Cradle fosters public awareness of marine conservation and inspires action to protect marine ecology.



Project Type Individual Project



Date October 2024 - December 2024

Conservation

Experience

Education

Background Research



Climate Change and Anthropogenic Destruction affect Sea Turtle Populations

With global warming intensifying and plastic pollution worsening, sea turtles face unprecedented survival challenges. Illegal fishing and egg poaching have further endangered their populations. Notably, incubation temperatures affect their sex ratio, creating a severe imbalance that threatens the species' future.



Climate Warming is causing a serious Imbalance in the Sex Ratio of Sea Turtle

The sex of sea turtles will be affected by temperature, because of the relationship between climate warming, so that the sex ratio of sea turtles is seriously imbalanced. according to a research report in Australia, the sex of newborn sea turtles is currently 99% female, in addition, according to Australia's sex statistics on green turtles near the Great Barrier Reef, the ratio of male sea turtles to female sea turtles is 1:116, if it continues to deteriorate, it may affect the reproduction of the population, affecting the number of sea turtles in the world.



Illegal Poaching and Capture still Exist

Turtle eggs are considered a source of protein and are still available in local markets and restaurants, both raw and salted, in Southeast Asia. For example, in El Nido, Palawan, the Philippines, local residents dig up turtle eggs for food and sell in order to make a living, which has a serious impact on the ecology of sea turtles. In order to reduce poaching, local conservationists will buy turtle eggs from residents at high prices and carry out artificial hatching and conservation.

Design Concept

How to make the problem of sea turtles pay attention to the public and improve the current situation?

Create a Turtle-Friendly Birth Environment

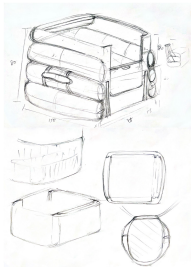
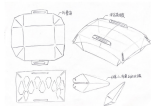
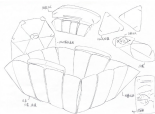
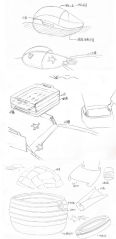
In order to create a friendly environment for sea turtles, a stable hatchery should be set up and the sandy soil temperature should be controlled to maintain a temperature of about 29°C to ensure a balanced sex ratio. Through the intelligent sensor system, the temperature is monitored and adjusted in real time to avoid too high or too low temperature affecting the incubation. Artificial hatcheries provide precise control of sand and environmental conditions to provide the safe place turtles need. In addition, choosing the right beach to lay eggs and continuously monitoring the change of sex ratio can effectively improve the reproductive success rate of sea turtles and protect the diversity of sea turtle species.



ESG Sustainable Tourism

ESG sustainable tourism emphasizes environmental protection, social responsibility and good governance. Practicing environmental sustainability through low-carbon transportation, waste reduction accommodation and nature conservation; Supporting local communities, respecting culture and promoting the common good of society; and ensure the transparent management and ethical management of tourism enterprises. This model not only reduces negative impacts, but also ensures that future generations can continue to enjoy a responsible travel experience. In addition, this tourism model can also achieve the effect of education, so that the public can truly feel the power of nature, and pay attention to the issue of nature conservation.

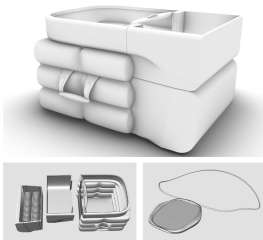
Sketch



Rough Model



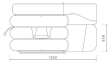
3D Modeling



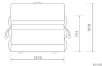
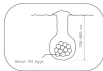
Function Description



Three Views



Simulated Turtle Egg Hole Depth



Function Description

It can stabilize the temperature in the incubator and also create a light difference in the incubator to guide the baby turtles to move.

Top Blackout Heat Shield



The turtles will be released into the wild for a fixed period of time, and different schools will be able to participate.

Wild Release Box



Interactive Record Board

The storage box contains a recorder that allows the public to adopt turtles while releasing them in the wild, and identify them by their unique facial shells.

The public can take the recorder home, and the public can interact with the turtles in the recorder, and can also watch the location of the same group of turtles, and remind the participants whether the turtles released in the wild at that time have migrated to lay eggs.



Infrared Lenses

The box is equipped with an infrared camera, which can provide local primary school students with remote observation of sea turtle hatching, so that this conservation activity can become a special curriculum content of the national primary school.

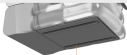


Air Cushion Wall

The air cushion wall makes it easier to control the temperature of the space, makes it easier to carry the incubator when it comes into contact with water, and the transparency allows the public to observe the hatching process of baby turtles.



The incubator mimics the natural turtle egg burrow to allow the turtle to hatch more naturally.



Sled

Hatcheries are equipped with sleds under the incubators, making it easier for conservationists to move the boxes in the sand.

IPASS MONEY 公益行動

GAME & DONATION

Project type Group Project

Task



CONTRIBUTION

• Research • Writing • UI
• Build Research • Prototyping • Standard
• Interview • Usability Testing

Date September 2021 - December 2021



Background Research



Older Donors Dominate, Putting Charity Future at Risk

Most donations in Taiwan now come from people over 30, while younger generations are giving less. In 2022, total donations dropped sharply. To stay sustainable, charities must attract younger donors and update their fundraising methods.

Big Donations Pressure Youth — Small Gifts Preferred

Young people often feel stressed by large donation amounts and prefer giving smaller, flexible sums. To reach them, charities should offer low-commitment options and show how small gifts still make a big difference.



Low Donor Loyalty Puts Nonprofits at Risk

Many donors give only once, making it hard for nonprofits to raise funds consistently. To keep supporters engaged, they need clear updates, personal connections, and regular communication.

Persona



Wang Jiahao

- Age : 28
- Gender : Male
- Occupation : University Student (Sophomore)
- Location : Daan District, Taipei City

"Although my ability is limited, I hope it can help some people more or less."

Introduction

A college student from Taichang, now studying in Taipei. Busy with school and working part-time at the campus cafeteria, but lacks good money management. Spends free time on mobile games and trends, easily influenced by social media.

Feels compassion when seeing donation ads for stray animals or people with disabilities, but often gives up due to unclear fund usage, high donation minimums, or difficult interfaces. Occasionally donates spare change at store counters, but skips it when not carrying cash.

Pain Points

- Limited budget; donations often feel too expensive
- Not good at spotting false or unclear information
- Dislikes hassle and waiting

Motivations

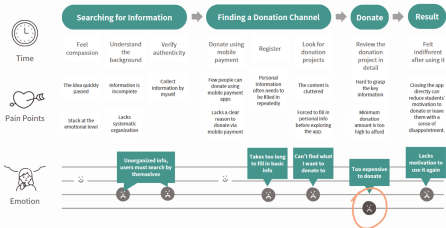
- Wants to help others and do good
- Believes in gaining good karma

Expectations

- Feels good being part of something meaningful
- Wants to learn about people in need
- Hopes to act quickly on social issues

Customer Journey Map: Mobile Donation Experience

The user journey for mobile payment donations is not simple or clear, and there are several barriers that prevent continued use.



Design Concept

Integrating micro-donations into gaming

Increasing donor engagement can also help expand the age range of donors.

Storyboard

Micro-donation



1. Saw a donation ad on the iPASS Money app, sparking curiosity about donating



2. Visited the donation webpage to check the organization



3. Verified the organization's funding and financial transparency



4. Read details about the donation project



5. Received the donation amount manually



6. Auto-filled personal information with one click



7. Received and confirmed donation details



8. Felt deeply moved after receiving a thank you letter from the organization

Game



1. Felt a sense of emptiness after completing the donation



2. Received a message from the organization along with some in-game points



3. Claimed the in-game points from the gift box



4. Used the in-game points to change the character's outfit



5. Chatted with the character in the town square to see who is in urgent need of help



6. Initiated the process you helped to stay at your in-game hotel

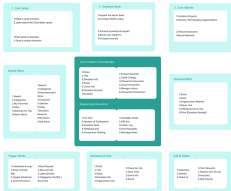


7. Took a group photo at your hotel to record the people you've helped



8. Checked the screen of support donations while enjoying the game

Core and Path



IA structure

Micro-donation



Game



Mock up



Figma Prototype : <https://neurLc/NY8LNk>
App tutorial video link : <https://youtu.be/gNM1pesrxaA>

Usability Testing

Users



- Age : 19
- Gender : Female
- Occupation : University Student
- Introduction : Enjoy playing virtual pet games, has part-time work experience, and has donated in person before, but has no experience with online donations.



- Age : 24
- Gender : Male
- Occupation : Student
- Introduction : Experience playing virtual games and making in-person donations, who made an online donation to the Iraq War cause after thoughtful discussions.

Step 1: Make a small donation



Users click the game first and miss the thank-you letter. We added a mailbox so the letter can be read anytime.

Step 2: Explore organizations you like



Users missed key info under "Learn More," so we moved it out for easier access.

Step 3: Buy gear with points



"Donate to Buy" was confusing, so we now show only point purchases with a donate button if needed. Added one-click auto-fill to avoid repeating info.

Step 4: Snap and share your game



UI was clear and easy to use. Tester A wanted camera angle control (not yet available) and liked the "Retake Photo" feature.

Step 5: Explore the game town



Added shortcut to charity page and changed trivia to videos. Also added a close button for users to explore before donating.

Navora

Offer beverages, cup recycling, and arrival reminders, creating a comfortable and sustainable city walking space.

Project Type

Individual Project

Tools



Date

February 2024 - May 2024

Background Research



Interview Agency

Taxi Stand at Taipei MRT Beitou Station

Located near Taipei Main Station and Airport MRT A1, the Beitou taxi stand serves as a key transfer point for commuters and travelers. With a steady flow of local and international passengers, the site often faces issues such as language barriers and unclear taxi information—making it ideal for smart mobility solutions.

Interviewees



Taxi Driver

Over 15 years in the field.

Pain Points

- Communication difficulties with international passengers

"We often encounter language barriers with foreign travelers, so I usually use Google Translate on my phone for real-time translation. Sometimes, I just look at the address of their accommodation on their phone. Most of them are heading to Keelung, since there are more budget hotels in that area."

- When there are more passengers, I just follow the instructions given by the staff at the taxi stand.

"The busiest time for passengers is usually early in the morning, around 8 a.m. That's when office workers are heading to work, and travelers are also arriving. When it gets crowded, I follow the instructions given by the staff at the taxi stand. Most people are pretty orderly—probably because they're all adults."

Design Concept

How to solve the driver's problem and make customers' waiting more valuable?

Smart Multilingual Mobility Service

This design integrates a multilingual self-service kiosk with AI navigation to help foreign travelers in Taiwan ride taxis more easily and confidently. It supports route previews, real-time translation, and links to flight and hotel info for smart recommendations. The in-car touchscreen offers address confirmation and tourist guides, bridging communication between drivers and travelers for a more seamless and culturally rich experience.



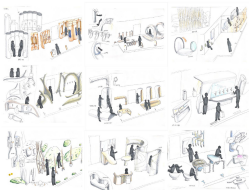
Immersive Self-Service Waiting Lounge

This design creates a smart waiting zone near MRT stations and taxi lanes, combining a self-service drink bar, interactive art, and eco-friendly recycling. Travelers can enjoy tea, coffee, or juice while engaging with light-based or AI art installations. The space promotes sustainability with reusable cups and recycling units, and offers branding opportunities through local collaborations. It transforms waiting into a relaxing, engaging, and culturally immersive experience.

Sketch

Ten Sketches

Extend the idea from the selected concept sketch



Three Extended Sketches



Layered materials create visual depth and define semi-open and open seating zones.

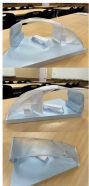


Inspired by flowing water and mist, semi-transparent partitions define open and semi-open seating zones.



Inspired by mountains, the space lets travelers relax on grassy seating while waiting.

Rough Model



3D Modeling





Self-Service Drink Machine

Vehicle Reminders

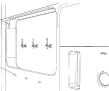
Above the dispenser is an Uber arrival time reminder, allowing passengers to check the arrival time of the vehicle at any time.

Air Curtain Technology

The air curtain technology in the beverage dispenser allows the dispenser to prevent mosquitoes and dust from reaching the beverage outlet when no one is using it, maintaining overall hygiene.

Multiple Payment Methods

Use a variety of payment methods to pay for the amount of drinks you pack, and pay as much as you want.



Circulating Caps Forward

The design of the beverage machine combined with the recycling cap recycling can reduce the use of disposable materials and achieve sustainable circulation.



Self-Service Liquor

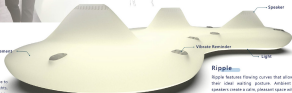
The way to serve the drink is like a self-service liquor, and you can mix and choose freely.



Drink holder
 & smartphone placement

Vehicle Reminder Pillars

Reminder pillars allow passengers to know where to board the bus according to the color of the lights, cameras on the pillars monitor the time the vehicle stops and tell the driver when to stop, and a screen on the parking pillar allows passengers to learn information about driving, vehicle and arrival time.



Ripple

Ripple features flowing curves that allow passengers to choose their ideal seating posture. Ambient lighting and built-in speakers create a calm, pleasant space with music and ride arrival reminders. A vibration alert gently notifies passengers when their Uber or taxi arrives. The seat also includes convenient spots for placing drinks and phones, ensuring a fully relaxed and connected riding experience.

Project Type

Individual Project

Tools



Date

April 2021 - June 2021



Design Concept

RooBag is a foldable, fire-safe gold paper burner designed for Qingming rituals. Lightweight and portable, it combines tradition with fire prevention, enabling safe paper burning while protecting the environment.

RooBag

Carry respect, Control the flame, Protect the land

Design Concept

Growing up in Matsu, I've always hoped to share its unique local culture with a wider audience. Matsu's aged rice wine is a distinctive tradition, with each household brewing its own flavor, while paper-cutting is an important folk craft used to decorate lanterns during festivals. To make these traditions more approachable, I designed a product inspired by the iconic 88 Tunnel, combining traditional paper-cut motifs with a modern twist—serving the aged wine as a cocktail. This approach introduces Matsu culture to younger generations in a fresh and engaging way.

生紅調酒

Old Wine Bartending

生紅調酒

Old Wine Bartending

An old wine bartending gift box brewing the memory of Matsu



Project Type

Individual Project

Tools



Date

September 2022 - December 2022

AD-03

A new type of life raft is designed to maintain light and signals

Project Type

Individual Project

Tools



Date

February 2024 - June 2024



Design Concept

AD-03 is equipped with a wave power generation device, so it can maintain power and light on the life raft, the light allows the search and rescue team to clearly see the location of the life raft at night, which is convenient for search and rescue, and because there is a light source, the victims will have a sense of stability, and because of the relationship of electricity, each life raft will send out a GPS signal stably from the top position, improving the probability of the victim being rescued.

Thank You

Contact

Mail : kaichen1216@gmail.com

Phone : +886984012369