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Petsi: A app that helps people look after & monitor their pets

BY

Ruoyun Gao

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Fine Arts in Visual Communication Design

School of Design
College of Art and Design
Rochester Institute of Technology
Rochester, NY
December 9, 2022

Committee Approval

Adam Smith December 9h 2022

Chief Advisor

Associate Professor Director of Visual Communication Design program School of Design, College of Art and Design

Mike Strobert December 9th 2022

Associate Advisor

Senior Lecturer School of Design, College of Art and Design

Abstract

When the pandemic first hit China in full force, almost everyone was forced to quarantine where they were at the time. But there were many people who were on business trips, visiting relatives and traveling in cities far from home. So a few months after the quarantine began. News spread that some pets died of starvation or depression at home alone because their owners were quarantined in other cities and could not return home. There were some enthusiastic people who helped neighbors feed their cats through the balcony, and volunteers who tried to enter the home to take care of the pets. But it's still a drop in the bucket. So I hope to help all pet owners create a system that not only ensures the daily needs of their pets, but also the health of their pets by recording data on their daily activities. Through this system, the owner can keep an eye on the pet's movement and life even if he is far away.

Keywords

UI/UX Design, Visual Communication, Interaction Design, Pet Care

Problem and Solution

I am a big animal lover, I used to volunteer at an animal shelter when I was an undergraduate, and I also babysit the pets of close friends or family members while they travel. I had considered adopting a cat, but whenever I had the idea, my aunt would always ask me what would I do with my cat if I visited her every holiday. She doesn't like cats so I can't take them with me to her house, so would I be comfortable with someone else coming to my house to help me look after my cat? I've been hesitant about getting a cat because of these appeals.

But then I was shocked by a news story I saw on my social media feeds from someone asking for help. She said her home was in Beijing but because of the pandemic she was quarantined in Shanghai for four weeks and couldn't go home, but she had a three-year-old cat at home and she was worried that if she didn't go home the cat would starve to death, so she asked for help on the internet hoping someone could help her feed the cat. Immediately below this message there were many replies from people who had a similar situation occurring and were asking for help.

Although situations like being suddenly quarantined are very unique and rarely happen. But still, it made me think about the richness of human life. There is study, work, family and friends. There are many places that humans can go. But pets have only their owners as friends, and their food source is their owners. There is no way for humans to never travel far for their pets, and if owners cannot take their pets out with them, the pets will have to stay at home. So how can owners guarantee their pets' daily life without being at home?

So with this system, I hope to build a better platform for owners and pets, so that caring for pets is not complicated. Linking life support devices such as feeders and water fountains in this application allows owners to control the devices in their homes even remotely, and to know and control the operation of the devices at all times.

Design Process and Details

Based on the project background, the user research goal was to learn how do pet owners generally settle their pets when they are away and also see if they are willing to try some new approaches and how useful they think it is. So I created a survey and according to the results, some owners hire someone to watch their pets while they travel. Most cat owners don't seem to worry about leaving their cats alone for a week, because cats don't need to go for walks like dogs do, as long as they have enough food and water. But they do worry about the cat eating all the food at once, or getting sick. Many people find it very helpful if they can know the living conditions of their pets at all times, so that they can have the opportunity to detect some abnormalities in their pets in advance.

Before doing the user research, my strongest assumption was that users would need a pet-like looking robot in their home to play with their pets instead. After the research, this changed a little. A robot that could be manipulated into action by its owner and through which they could talk and play with their pet seemed better than a pet-like shaped robot.

I followed up with a summary of owners' pain points. Users' biggest concern was that no one was home to feed their pets, and then users got bored with the constant message alerts on their phones, even though they were eager to see what their pets were doing. Users are very worried about their pets getting sick or having any accidents when they are not at home. So I tried to design the system in such a way that the application can be connected to the feeding device, so that the user can control the feeding device remotely through the application and keep the device condition updated. The application will remind the user of the remaining storage of the feeder, the water dispenser's hose connection and the condition of the filter, etc. And not just feeding devices, users can also connect any electronic device to the application, toys, sweepers, etc. For multiple pet users, pet information can be saved into the system separately. By uploading photos of the pets, the system will differentiate them, so each pet will have its own separate record and information organized. The updated information is collected and placed separately in the home page. All dynamic information is recorded as a group, such as what time the pet drank water. Other activities are then categorized into total amount of food eaten so far today, amount of water drunk, activity time, sleep time, etc. Even if the user wants to turn off the annoying beeps, they can see all the information recorded the moment they open the application. Each data can go to a new details page where I made the data arrays into a visual table. The user can see the graphs of the activity over 24 hours/week/month. I also added data to compare, for example, whether the pet drank more or less water today compared to yesterday. In this way, I hope that owners will be able to detect any abnormalities in their pets' physical condition.

Considering that pets may have medical visits. add medical records of pets, users can upload photos as well as add text narratives to keep their pets' medical records in the pet information. This allows the doctor to be fully informed of pet's health. And the reason I added the social system is to make it easier for people to communicate and exchange all kinds of problems with their pets. Some people are just more experienced in breeding, so users can post questions in the social circle instead of the high cost of each visit to the doctor. And I added the ability to share geographic locations so that which time you post, other users can see how close you are to them. This is also a way for some users who have dogs to find people who can help you walk your dog. And I added the ability to share your location so that every time you post, other users can see how close you are to them. This way for some users who have dogs, when they are out of town, it is likewise a way to find someone to walk their dog for them.

Manipulating a robot that can run was my vision from the beginning. Ideally, the user would be able to manipulate the robot to track the path of the pet's activities and talk to the pet through the robot. I added the function of laser light to achieve remote interaction between the owner and the pet in this way. Robots can move because with a stationary camera, not necessarily the user can see their pet every time the camera is turned on. The robot allows the user to manipulate it to find the pet and generate some interaction so that the pet is not too bored at home.

Conclusion

The main goal of this program is to help people with pets to help look after their pets when they have to be away from home for many days for various reasons. Some people will choose not to travel too far in order to take care of their pets emotionally. Others will choose to spend a lot of money to hire someone to take care of their pets when they have to go away. This system can be a good solution to their troubles. With petsi, owners can see how much their pets eat and drink each day, and these records are saved for comparison. This method not only allows the owner to have some insight into the pet's life, but also to detect any abnormalities in time. The app also allows you to remotely control various devices in your home to keep your pet on life support. The robot can be used to communicate and even play with the pet, so that the pet will not be lonely and depressed because it is alone at home.

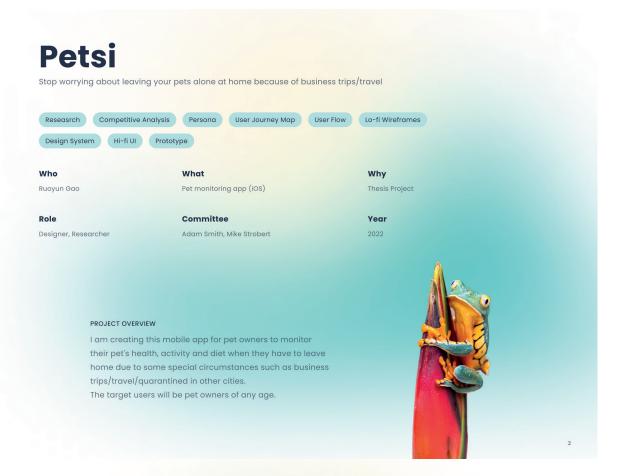
During the project, I managed to evaluate the market research, do a quick user survey, create a set of lo-fi wireframes, build them into hi-fi UI designs, connect them into a prototype, and perform a mini usability study. I have learned a lot through this process, but I still feel there is a lot of room for improvement.

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Appendix B: Thesis Defense Presentation



Research

THE GOAL

- It allows families with pets to go out with peace of mind.
- Keep up to date with your pet's feeding and activities so that you can keep track of its health.
- Communicate with other pet owners in the neighborhood to expand the social circle.

THE PROBLEM

- Hiring someone to take care of your pet can be difficult for some families.
- When your pet is home alone, it is inevitable that you will worry about its diet and health.
- There is always some confusion and concern when raising a pet, such as when your pet has diarrhea or vomits and you don't know what to do.

Competitive Analysis



Sure Petcare

THE GOOD

- Multi-device control.
- · Timely response.
- The setup is simple, giving each pet a different mark for easy differentiation.
- Closely monitor each cats intake, complete with two different graph

THE BAD

- The pet activity is tied directly to the device. If that device fails or loses connection, all of the pet information is gone.
- $\boldsymbol{\cdot}$ Does not notify when battery levels for the microchip cat door fall to the point where the device does not work properly.
- App is completely unaware of smart time zones and DST.

Pet Zero

THE GOOD

- Can et up cameras to watch pet and set up multiple feedings and sometimes manual feedings.
- $\boldsymbol{\cdot}$ The feeding adjustable and the timer easy to set and change.

- Cannot get the push notifications to work.
- Updates can cause users to be forced to log out.
- The app settings are not as intuitive as they need to be. The FAQs are not particularly helpful.



Problems from the comments

There are no push notifications (so I'm told by support) so as not to disturb the user...

Beth Fordice



I want to setup the warranty, but they only lets you connect a product with a Hub.

K. Kelly Weatherspoon



App has always been ok, incredibly slow to load but you get used to that.

Mala Parsot



Persona

l'm **Jessie Martin**

"What's new with you today?"



Demographics











Married, one dog

Goals

- Chewy can be well taken care of when Jessie and James are not at home.
- She can always know how Chewy is doing.

Frustrations

- Concerned about trusting strangers in the house or with dog.
- If they travel too often, they can't spend more time with Chewy.

About Jessie

Jessie is 55 years old oncologist who lives with her husband James and their dog Chewy. Jessie and James make travel plans every year, usually three domestic trips and one cross-country trip as well as some long weekends. Chewy usually travels with them but over the years Chewy has gotten older and is not in the best physical condition to continue traveling. So now every time Jessie and James go away, they will find a way to ask a friend or hire someone to stay at their house in order to take care of

Demographics



Location Rocherster, NY



Family Single, two cat



Occupation 3D Designer





Goals

• Feed your cat on time.

- Know your cat's life and health at all times.
- No need to leave a big pot of cat food every time he goes out.

Frustrations

- ecause he often does not see the cats, so there is no way to know whether they are healthy or not.
- He sometimes gets busy and forgets to eat, not to mention the need to feed the cat.

Joshua Yu

l'm

"Do your own research."



About Joshua

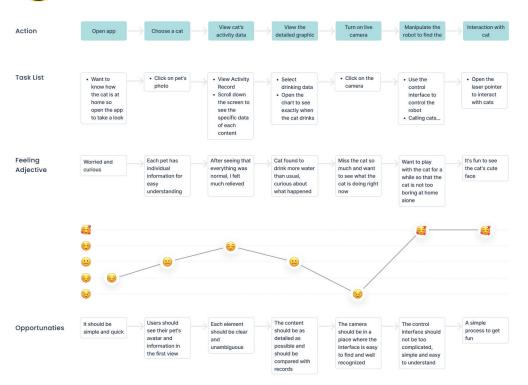
Joshua is 25 years old 3d designer who lives with his two cats in Rocherster. He rarely goes out, preferring to work from home, and he is a proper workaholic who is sometimes so busy that he doesn't eat or drink. Due to his work, he occasionally travels to attend competitions or events. His relationship with his two cats is more like roommates.

User Journey Map

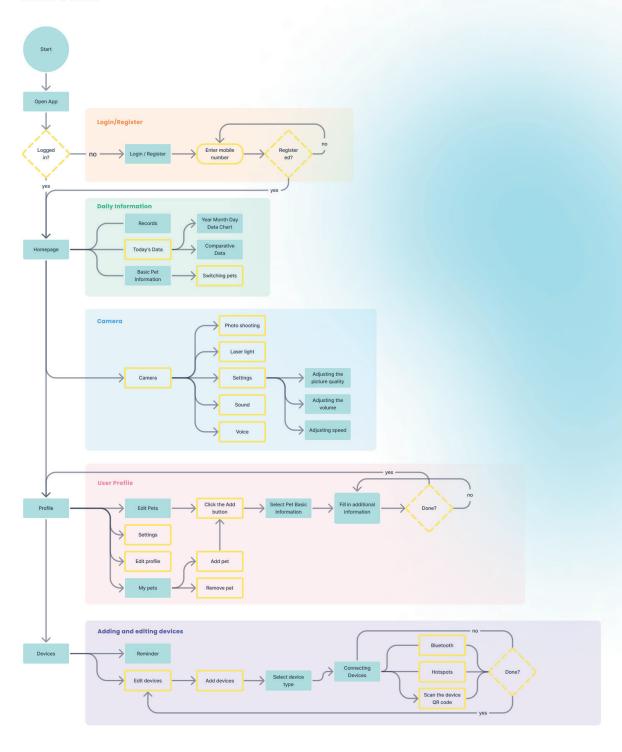


Joshua Yu

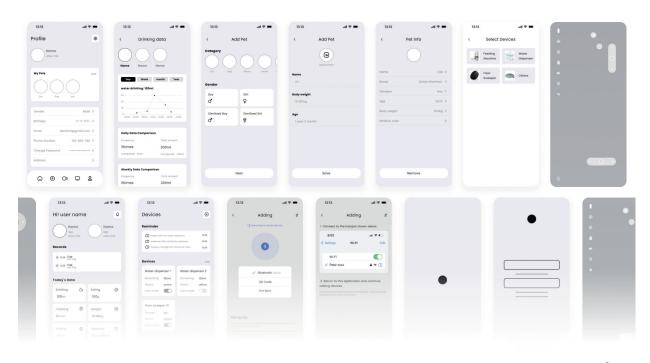
User Story: As a <u>designer who travels occasionally,</u> I want <u>my cats to be well taken care of when I'm not at home, so taht I wouldn't worry too much about my cats being home alone.</u>



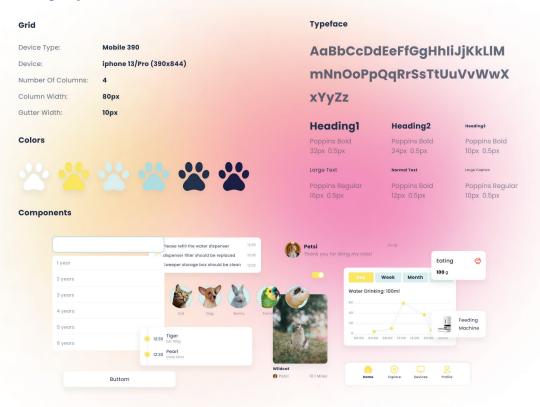
User Flow



Low-Fidelity

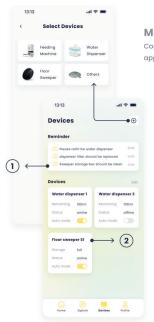


Design System



High-fidelity Prototype





Manage Devices

Connect automatic feeding and drinking devices to the app for more accurate recording of users pet's activities.

0

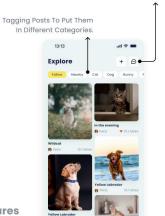
Update device information, such as changing the water dispenser filter or adding food to the feeder, etc.

2

Displays information about the devices that are already connected in the app. Users can manipulate the device manually or set it to automatic mode.

Community Features

You can post in the app and show the approximate geographic location, and other users can see the distance between the person who sent the post and themselves.



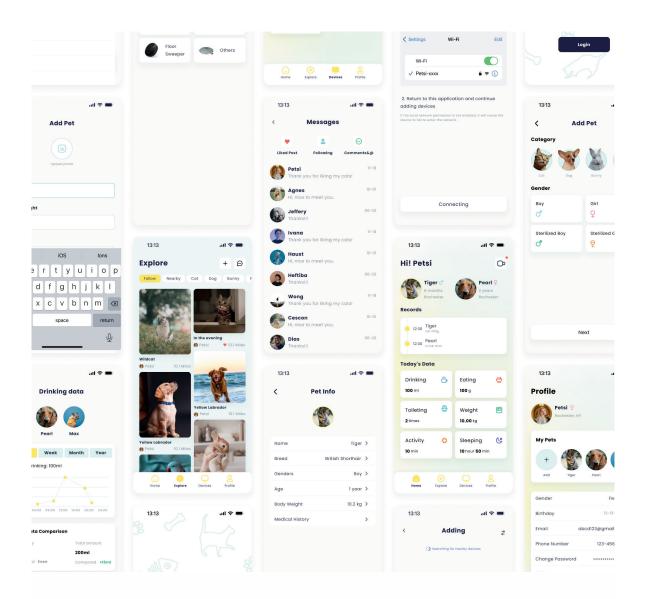
Start A Conversation With Another User.

11

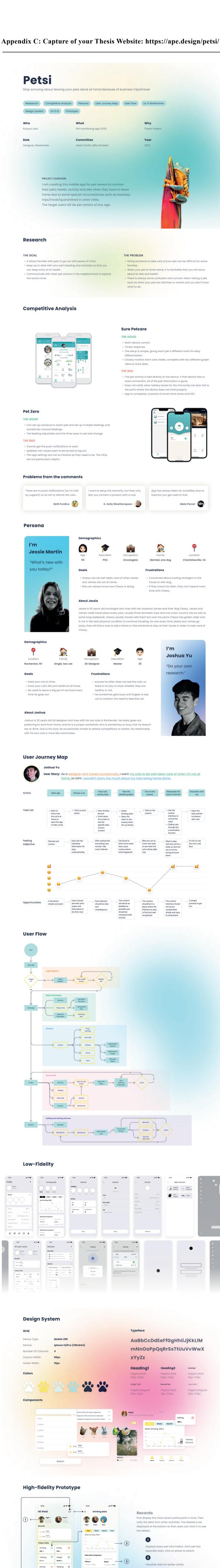


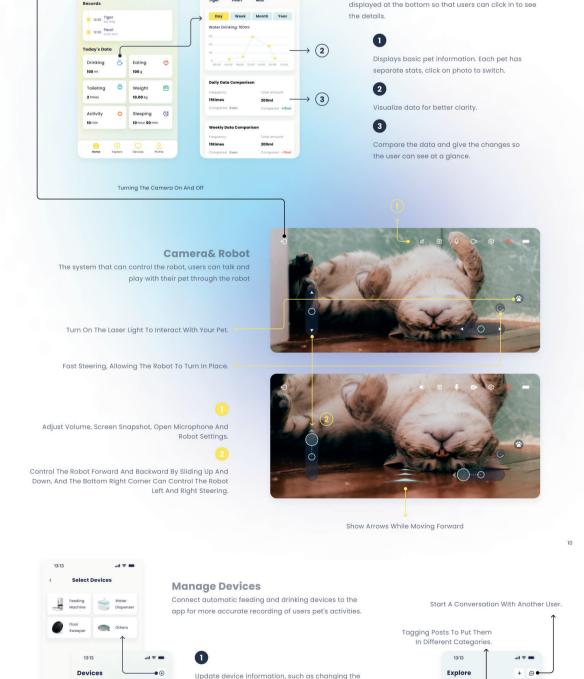
CONCLUSION

- The original purpose of this project was to help people who were unable to return home during the pandemic to care for their pets.
- During the project, I managed to evaluate the market research, do a quick user survey, create a set of Io-fi wireframes, build them into hi-fi UI designs, connect them into a prototype, and perform a mini usability study.
- I have learned a lot through this process, but I still feel there is a lot of room for improvement.









water dispenser filter or adding food to the

Displays information about the devices that are already connected in the app. Users can manipulate the device manually or set it to

location, and other users can see the distance between the person

Community Features

who sent the post and themselves.

Activity

13:13

Tiger >

10.2 kg >

Sleeping

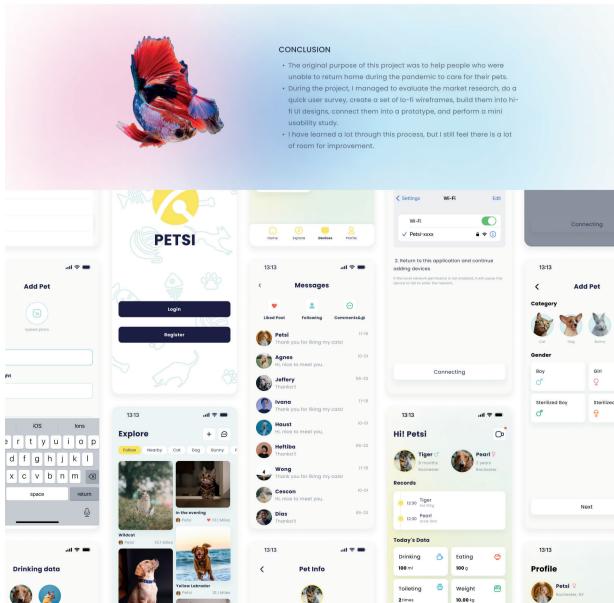
10 hour 50 mir

13:13

Adding

 \rightarrow (2)

ıta Comparison



Feeding Water

13:13