AMANDA YANG / MDES

Bio+

Proposing a symbiotic way of living

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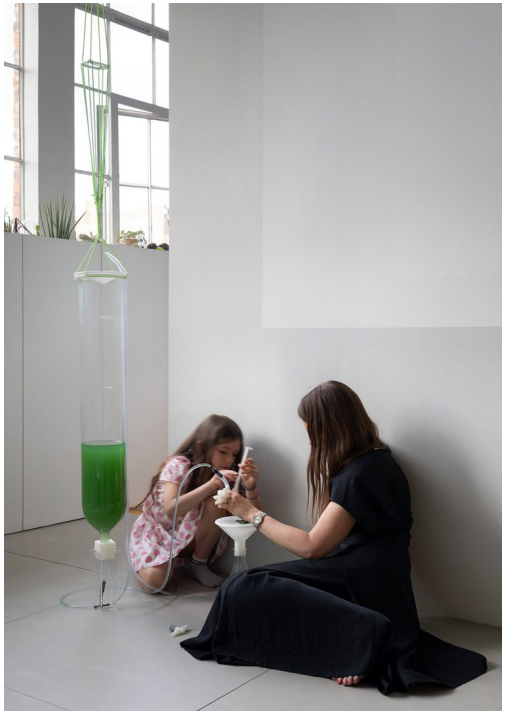
Intro

Bio+ targets on human-biology interaction in everyday life through the exploration and design of microalgae, which is considered one of the most effective future energy sources. This project aims to propose a symbiotic way of living by integrating microalgae with everyday objects, specifically, a desk, to raise people's awareness on sustainable bioenergy. Essentially, this project creates a symbiotic space that allows two distinct species to feel and react to one another.

Hyunseok An / Algae Micro-farm

EcoLogicStudio / Bit.Bio.Bot



EcoLogicStudio / DIY Algae Kit

PRIOR ART

How can we design our space in a way that embraces nature? Where do biomaterials fit in this digital society? Bio+ endeavors to examine cross-species interactions in the human living space. This project experiments Human-Biology Interaction (HBI) design through the exploration of the biomaterial, microalgae. The value of this living matter is pushed to its entirety in the form of digital symbiosis. Previous works on microalgae mainly focus on their photosynthesis process and light sensitivity. Microalgae have been used in energy sources, lighting, and art exhibitions, but little work has been done on microalgae-based interaction design. Bio+ introduces this biomaterial to human living space as a novel integration of design, science, and technology.

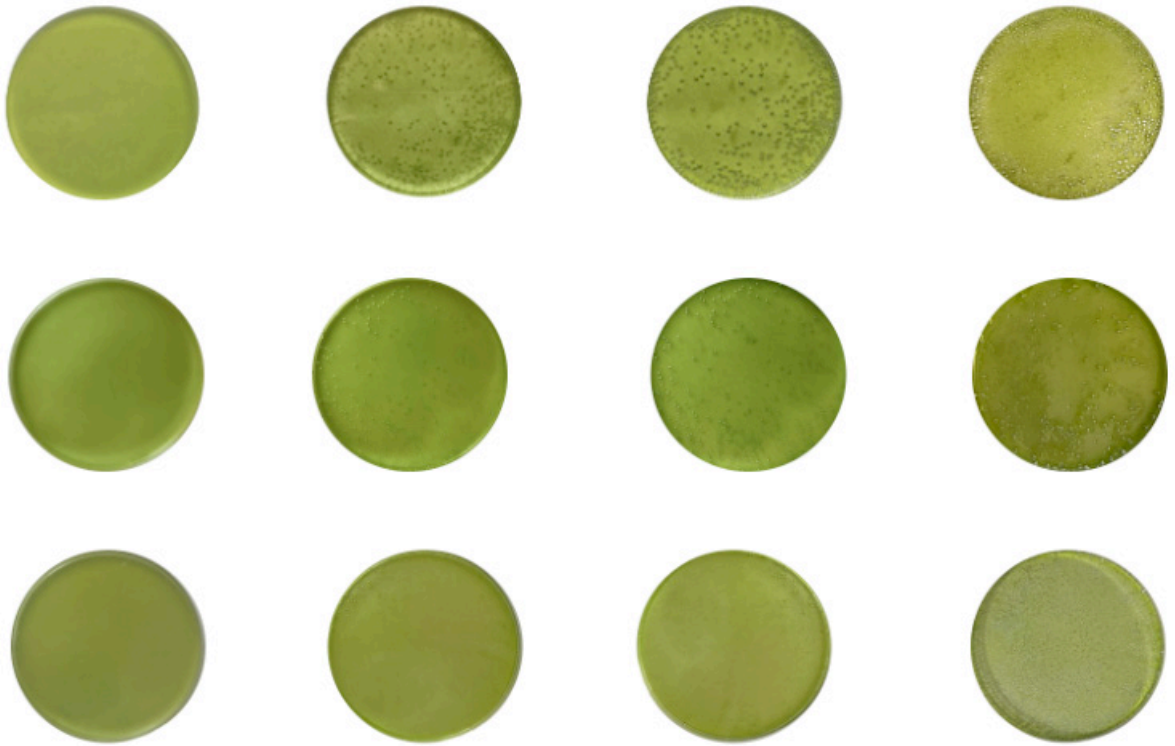
EXPERIMENTATION

Bio+ is inspired by the microalgae photography works leveraging the light-sensitivity of this biomaterial. In order to prove the practicality of presenting images with microalgae, a few testing trials were conducted. The testing trial confirmed that designing interactive features utilizing light sensitive microalgae is possible in non-laboratory settings.

Bedroom floor

Bedroom desk

Dining table



Final Design

Bio+ imagines a living space that holds the symbiosis between humans and microalgae. The everyday object desk is chosen to bridge the symbiotic relationship. The desk is placed in users' living environment to support their daily tasks such as working, reading, writing, or eating. The desk is composed of four main layers: digital processor, interface, bioreactor, and cushion seats. The desk stand and top rod are made with metal iron for stability. The bioreactor and interface containers will be 3D printed with sustainable microalgae filaments. All the interactions happen on the surface interface. The interface is made with a transparent glass sheet that ensures maximum light passing through. The interface is placed on the surface interactive culture. The patterns formed by microalgae in the culture can easily be seen by the users. The interactions exist in the form of visual input and feedback. Users can directly write or draw on the interactive surface using markers.

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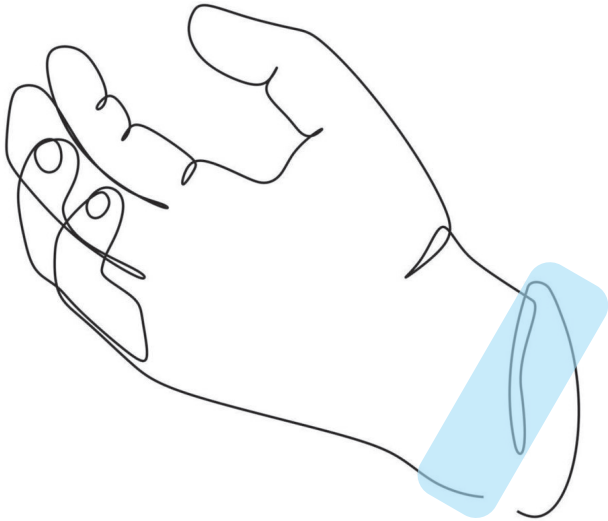
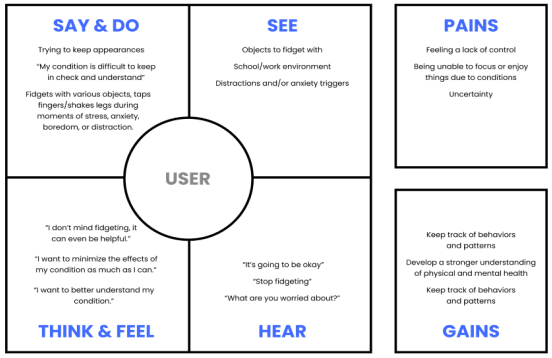
Embrace

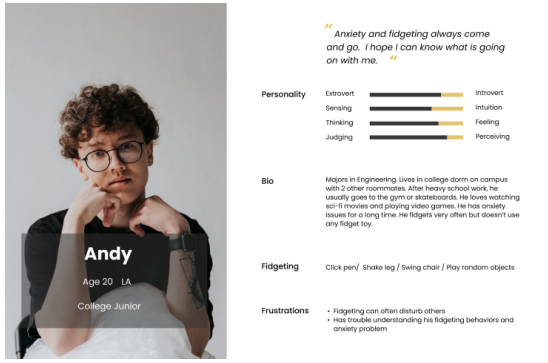
Biofeedback Fidget Toy

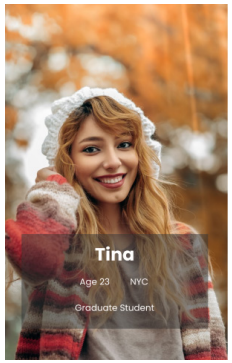
Team Amanda Yang, Vivianne Champagne, Prathamesh Sahastrabudhe, Justin Oshiro

Intro Fidget toys have primarily been used as passive devices, but they could be used to collect user data and biofeedback statistics in order to provide those facing conditions such as ADHD, anxiety, or OCD with a better understanding of themselves. By combining the markets for personal health data collection and fidget toys, it allows these groups to feel more in control of their conditions.



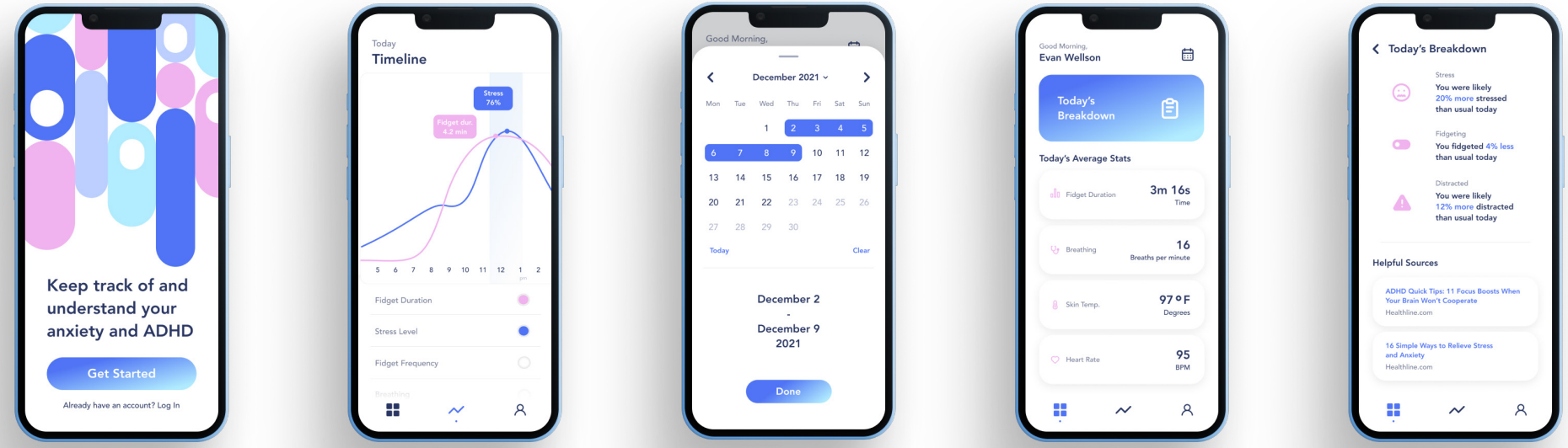


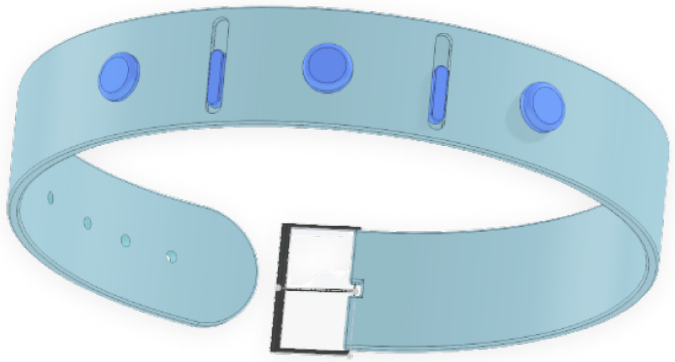




USER RESEARCH

In order to better understand the conditions and the current field, we conducted user interviews and created personas and empathy map. During the concept general stage, we each generated ten ideas and sketched each one with an accommodating description including writing about the corresponding concept's features and attributes. We spent a couple weeks further discussing, researching, and this led us to choose our final concept, the biofeedback fidget bracelet, which we would then tweak and improve.





PRODUCT DESIGN

These are the key screens from the prototype of the app portion of this concept solution. The app's primary purpose is to serve as a window for users to see what the bracelet is gathering, and then interpret it in a way that leads to better self-growth.

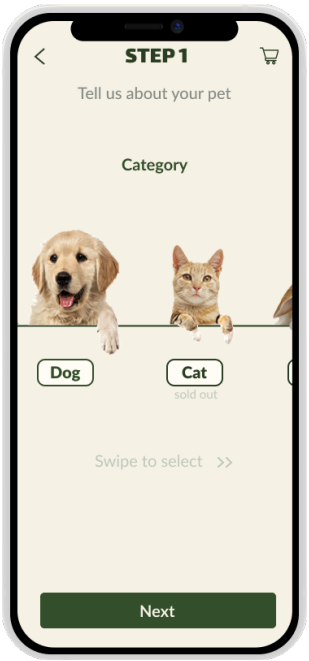
Biofeedback data will be sent to the app via bluetooth, and users are then able to see various comparisons, breakdowns, and representations of their own data, helping them to better understand their own fidgeting and triggers throughout the day, and how they relate to their body's reactions.

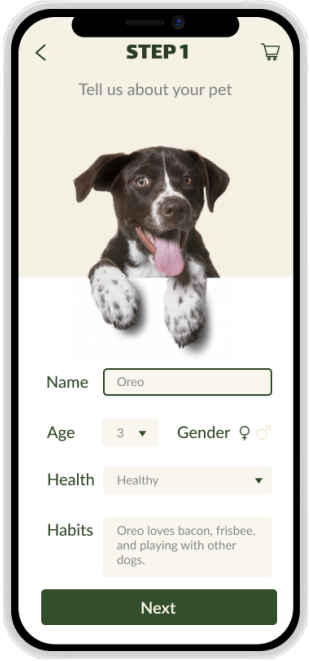
Pawsible

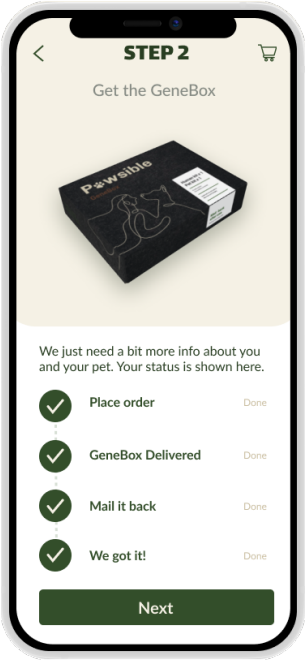
Future of Pets

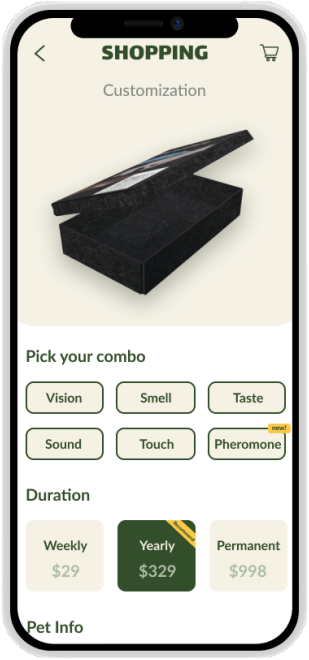
Team Amanda Yang, Bennett Ngan, Jacob Kritzinger, Thomas Chen, Emily Joens

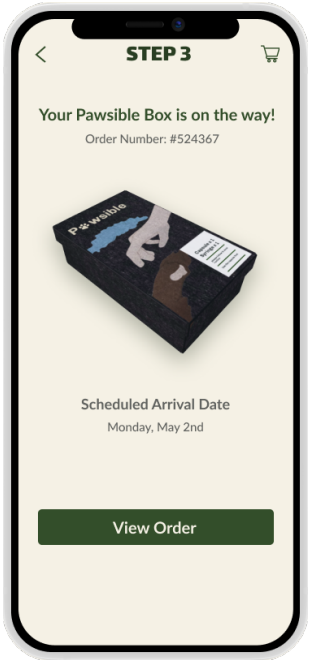
Intro It is a speculaitve design project that pictures a future where the empathy between human and other species is augmented than ever. Due to the advancement of genomic knowledge and chemical treatment, a product is made that is able to alter human's senses into that of an animal of their choice. In this world, humans unlock a fuller understanding of animals and our relationship with them is fundamentally changed.









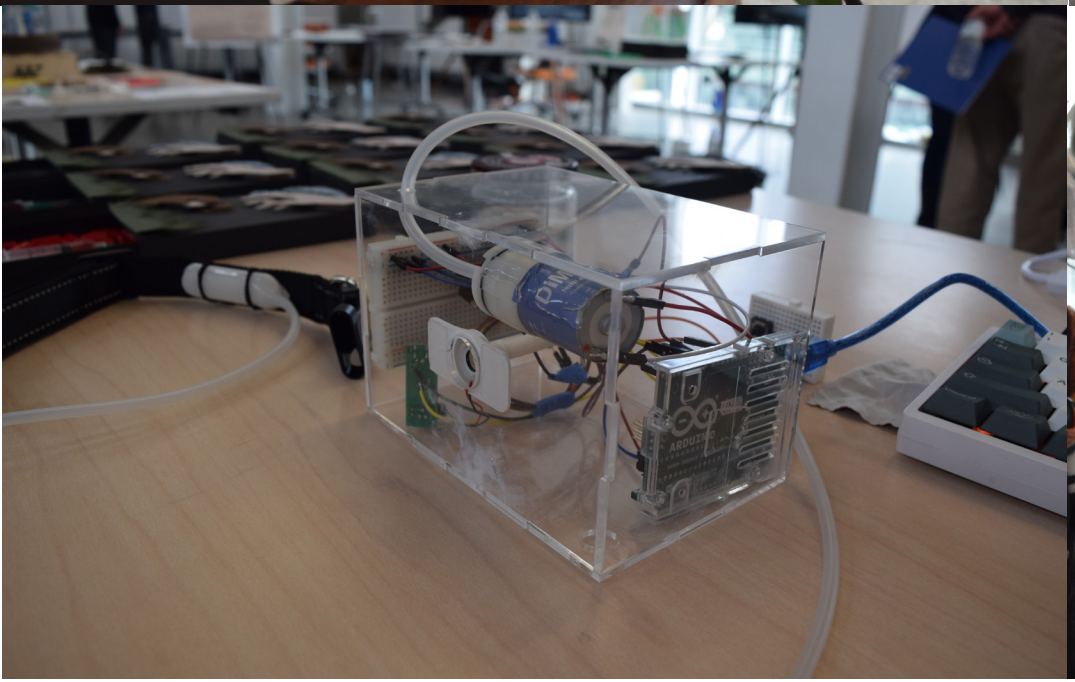


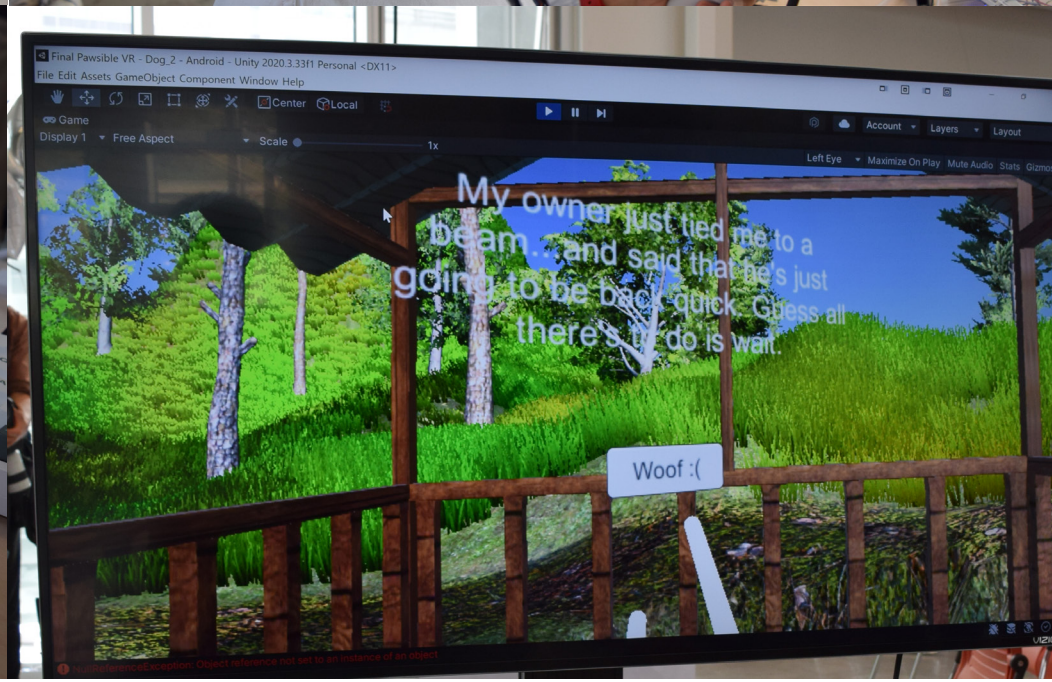
ORDER FROM APP

Our product allows users to feel the world of their pets. In order to use our product, users need to use an app to customize based on their pets and their personal needs. They will should the category and breed of their pets. They will then receive a Genebox that is used to collect the pet's and user's genetic information required to produce the Pawsible experience. After users mail the Genebox back to our company, they just need to wait for a few days for the Pawsible Box to arrive.

RECEIVE THE BOX

The Pawsible Box comes with a pill and a filled syringe. The pill serves as a test trial for users to experience being their pets for a few hours. If they are satisfied with the experience, they can then use the syringe to emerge themselves in a prolonged one-week journey. Users can always order more refills or adjust their experience through our app.





KICKSTARTER EXPERIENCE

We created a set of tools (Virtual Reality scenario, soft-robotic inflatable collar, and smell emitting device) to help our potential customers experience the magic of our product before they place any orders.

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Microsoft

Design @ Large

Team Outlook Time Management

Intro The summer of 2022 was spent in Seattle, WA. I interned at Microsoft as a UX designer. I worked under the Outlook Time Management team. My project focused on creating new features for hybrid work environment in the post-pandemic workspace.

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WHAT IS LACKING IN THIS HYBRID WORLD?

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AMANDAYANG

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Education.

University of California, Berkeley
MDes. Graduating Dec 2022
School of Engineering,
Master of Design

Carnegie Mellon University
BS. Aug 2017 - May 2021
Human-Computer Interaction
Cognitive Science
Minor in Neuroscience

Skills.

Tools
Sketch / AfterEffect / InVision /
Illustrator / Tableau / Voiceflow /
Cinema 4D / Photoshop /
Microsoft Office /
Laser Cutting / 3D Printing

Programming
HTML / CSS / Javascript
C / Python / R

User Research
User Interview / Speed Dating /
Wireframing / Prototyping /
Affinity Diagraming /
Usability Testing

Experience.

Microsoft - Outlook
UX Design Intern
May 2022 - Aug 2021

Melanoma Staging Mobile App
UX/UI Design + Research
Feb 2021 - May 2021

Microsoft Asia - AI Vertical Team
UX Design Intern
Jun 2021 - Aug 2021

ResMed Mobile App Design
UX/UI Design
Jan 2020 - Feb 2020

Morphing Matter Lab - Morphace
Research Assistant
Dec 2019 - Dec 2020

Tencent - Autonomous Driving Department
UX Design Intern
Jun 2019 - Aug 2019