



22



College of Design and Engineering
National University of Singapore
8 Architecture Drive, Singapore 117356

Tel: (65) 6516 7758
E-mail: didsec@nus.edu.sg
cde.nus.edu.sg/did/

Graduation Website
cde.nus.edu.sg/did/gradshows/2022

Colophon

Graduation Book Design Team	Chua Jia Hui,
	Wong Yu Ting Ashlyn,
	Yong Zhen Zhou,
	Feng Guozi Beatrice,
	Sim Si Hui Rachel,
	Cao Minh Huy

ISBN: 978-981-18-4635-9
All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy or any storage retrieval system, without permission in writing from the publisher.

Contents

004	Foreword
006	Curriculum
012	Design Courses
044	Design Platforms
108	2022 Graduating Students
206	Post Graduates Research
212	Design Incubation Centre
220	Interactive Materials Lab
224	Achievements
230	Staff Index

Foreword

Head, Division of Industrial Design

Associate Professor
Dr. Christian
Boucharenc

The academic year 2021-22 has been a theatre of significant change at NUS. Firstly, the restructuring of the Faculty of Engineering and the School of Design and Environment, to form the College of Design and Engineering (CDE), has brought about change, curiosity, and opportunity. This restructuring will facilitate broader cross-disciplinary collaboration and multiple academic pathways for students.

We wish to acknowledge A/P Hans Tan, who endured multiple meetings and lead many of the curriculum changes as a part of the CDE restructuring. Emanating from this restructuring, DID is now at the forefront of two CDE core curriculum course offerings. Hans spearheaded the development of Design Thinking (DTK1234), now compulsory for a large majority of NUS students. This course came about with the assistance of A/P R. Brian Stone, Dr. Lee Jung Joo, Dr. Clement Zheng and Mr Donn Koh. Design Thinking is now a part of every student's academic experience in the College of Design and Engineering (CDE) and the College of Humanities and Sciences (CHS). This is more evidence of the increasing influence of design in our society.

In addition to Design Thinking, DID has developed a new core curriculum module entitled, Creating Narratives. This course is focused on preparing our students to be great communicators, both visually and textually. This is a team taught module and a collaboration between DID, Architecture and the Centre for English Language Communication. This effort was led by our colleague R. Brian Stone.

Now joining our affiliate programs, the Design Incubation Centre and Service Design Lab, 2022 saw the launch of the Communication Design Hub, which operates as a collaborative design resource for the university and professional communities. The Design Hub employs design students to develop a range of communication solutions to support research, outreach initiatives, student centered activities and communication.

A very warm thanks to all our DID's colleagues, academic and administrative staff, technicians, and students who have responded to the massive challenge in the face of the COVID-19 pandemic. Their fortitude is greatly appreciated, as everyone was able to complete their respective tasks perfectly.

Since the establishment of the DID programme 23 years ago, the DID team has continuously refined its programmes, which is now articulated around three main areas, 1) Product Innovation, 2) Social & Service Transformation and 3) Design Futures & Critical Inquiry. These focused areas will eventually lead to degree specialisations, resulting in a thesis track for our 4th year students.

The work of DID continues to receive international acclaim. The Division is elated to have received numerous student awards; Outdoor Design Award 2021, Good Design Award 2021 and finally, two Red Dot Awards in 2021.

Our Design Incubation Centre (DIC), directed by A/P Christophe Gaubert helps young design talents to develop and achieve their ideas and projects for production. This year, DIC supported 2 young graduates, Sheryl Ang and Stacey Yip to grow, industrialise and commercialise their thesis project. The incubated products are now sold in many local stores including Design Orchard, National Gallery and KrisShop (Singapore Airlines). Thanks to DIC's effort in promoting, many incubation projects which have won international awards this year, such as the Design for Asia Award 2021 (HK), the Golden Pin 2021 (Taiwan), the Good Design Award (Japan), the Design Anthology Award 2021, the iF Design Award 2022, and the Lexus Design Award, Grand Prix Winner. The current postgraduate incubations will also join in September 2022. Other student

projects will be showcased in Paris Design Week, sharing a vision of Nature through Design. Among the research projects, DIC is currently designing a new generation of microscopes for living cells in collaboration with the NUS Mechanobiology Institute. This project illustrates the cross-disciplinary collaborative activity in NUS.

In parallel to our academic faculty's dedication to teaching during this academic year, their personal design practices were also recognized. We can highlight Christophe Gaubert and Willie Tay from the Design Incubation Centre (DIC) with the project Aline, which won the DFA Design for Asia Award 2021 – Silver Award, the Red Dot Design Award: Product Design 2021, and iF Design Award 2022. A/P Yen Ching Chiuan and his team at the Cute Center got the Gold Award, Virtual/Augmented Reality Category, Multi-sensory Extended Reality (MSXR) Medical Crisis Management System (Mass Casualty Incident START Triage Protocol), Collaborative project between Singapore Armed Forces Medical Training Institute and Keio-NUS CUTE Center).

A/P Yen Ching Chiuan with A/P Thomas Kong Kwok Hoong have been in charge of the Sponsored Exhibition " HEALTHCARE 2030: The Future of a Distributed System" which showcases the collaborative project between DOA/DID-NUS and Philips design. The exhibition was co-funded by DesignSingapore Council.

In terms of teaching, our colleagues: A/P Christophe Gaubert and Dr Lee Jung Joo, have been nominated for the Annual Teaching Excellence Award (ATEA) and our colleague Donn Koh has been nominated for the Outstanding Educator Award (OEA) in NUS.

I would like to take the opportunity to thank our colleague Willie Tay, who has been part of the Division during 11 years as a Senior Designer at DIC. During this period, DIC contributed significantly to our Division through innovative design projects, incubating students' projects, participating in international exhibitions and outreach to local schools. Willie also contributed greatly in teaching and service, where he took crucial initiatives to support our workshop and numerous exhibitions promoting our Division locally and internationally.

On the joyous occasion of our students' graduation, I would like to wish them great success in their future endeavours and congratulate them for their efforts, perseverance and the fruits of their labour. All our accomplishments would not have come to fruition without the immense support of our dedicated faculty staff. Special thanks to the DIC team, over the years rendering their support to the programme through teaching, research and the promotion of our Division. Last but not least, our sincerest thanks and gratefulness to our administrative staff who supported us throughout all projects.

The Division of Industrial Design will continue its pursuits in developing its curriculum, platforms, pedagogy and extensive industry collaborations to ensure its progressive programme remains relevant in the evolving world of design.

Curriculum

Division of industrial design

Our Background

The Division of Industrial Design (DID) was founded in 1999 as Singapore's first university-level course in industrial design. DID offers a highly selective degree course in industrial design. Our pedagogy combines design thinking, innovation methods and humanistic approaches, alongside a clever mix of technical, artistic and economic disciplines - a multi-disciplinary vision of design.

Our vision is to make life better through design; to equip students with interdisciplinary skills and thinking processes required to find unmet needs, as well as solve complex problems involved when creating viable new products, experiences, interfaces and environments. Our graduates are able to take up highly valuable and versatile roles as creative designers, innovators, entrepreneurs, and leaders of change.

Originally part of the Department of Architecture, our programme has built a stellar track record and gained independence in just 12 years. We are ranked among the world's top 30 university for the subject of art and design by QS World University Rankings by subject in 2016.

The practice of industrial design is articulated on three fundamental dimensions, three areas in which it takes root and spreads out in balance.



Service & Social Transformation

A human-centred approach to designing interactions that are usable, meaningful and enjoyable to people. It focuses on bettering lives for our ever-changing society.



Innovation for Industry

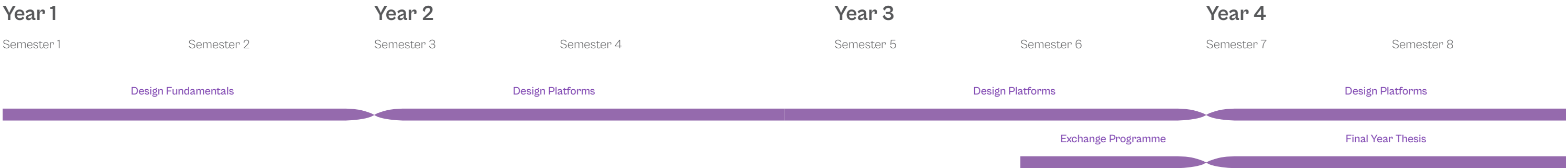
A tactful balance between knowledge of market, function and aesthetics. It aims to deliver an all-round experience that delights.



Design Futures & Critical Inquiry

An imaginative projection into the future of products, technologies, interactions and culture. It spans from critical analysis to disruptive innovation.

B.A. course structure



Design Fundamentals

Semesters 1 - 2

In the first 2 semesters of Design Fundamentals, students acquire fundamental knowledge, skills and aptitudes in industrial design. This is achieved through a succession of small-scale design exercises that focus on specific areas of learning in detail.

Design Platforms

Semesters 3 - 7

As part of our strategy to evolve constantly, a major component of the course is the Design Platforms. It allows students to tailor their individual course of learning by selecting and participating in 2 concurrent design studios from a variety of design projects offered every semester—ranging from furniture design, healthcare design, consumer electronics design, transportation design, apps and interaction design, retail design, home appliance design, conceptual design, service design and more. The range of different topics reflects the ever-expanding role of an industrial designer. Students are not only able to receive exposure to different areas of industrial design, but also gain the opportunity to learn different approaches to designing, from studio leaders and industry collaborators.

In addition, the vertical format of the design platforms encourages cross-learning of ideas, skills and methods while junior students work alongside and/or compete with senior students. Students in a lower year will take up the role of a junior designer, whilst senior students will have the opportunity to assume the role of a senior designer. This arrangement reflects the importance of group dynamics in industry practice, where design teams often comprise of junior designers, senior designers and sometimes a creative director.

From 2010 till 2021, we have accepted a wide variety of industry-sponsored projects from the following industry partners:

Akzonobel, ASUS, DBS Bank Ltd, Dell, Dupont, Eight Inc., Estée Lauder, Eu Yan Sang, Festo AG & Co. KG, GovTech, Groupe PSA, Guerlain (LVMH), Hewlett Packard, Housing Development Board of Singapore, IBM, ICI Dulux, International Flavors & Fragrances (IFF), Jurong Port, L'Oréal, Ministry of Education Singapore, Ministry of Manpower Singapore, Motorola, National University Hospital, Nestlé, Nirvana Memorial Garden, OCBC Bank, Origins, OSIM, Philips Design, Prime Ministers Office Sinagpore, PSA, RISIS, Rolls Royce, Samsung, Shiseido Group, SIMTech, Singapore Civil Defence Force, Suntar Membrane Technology, Supermama, Toshiba, Tupperware, VISA, Woodlands Health Campus, World Kitchen, Xentiq, Yong Loo Lin School of Medicine

Final Year Thesis

Semesters 7 - 8

In the fourth year, students are required to research and investigate opportunities to develop a comprehensive design project. The major topics addressed in this level include research methodology, brief formulation, project planning techniques, information search and documentation, product analysis and evaluation, concept development and selection process for design development, design detailing and final market implementation. The final year thesis gives students the opportunity to self-initiate a project according to their area of interest, preparing the graduates for a career in design.

The final project ensures that students are sufficiently competent in research as an integral part of the design process. In this final year, students learn to form and evaluate value judgments on design decisions ensuring that design proposals meet rationalized and functional criterion as well as less tangible aesthetic qualities. Successful graduates will demonstrate innovation and competency in industrial design.

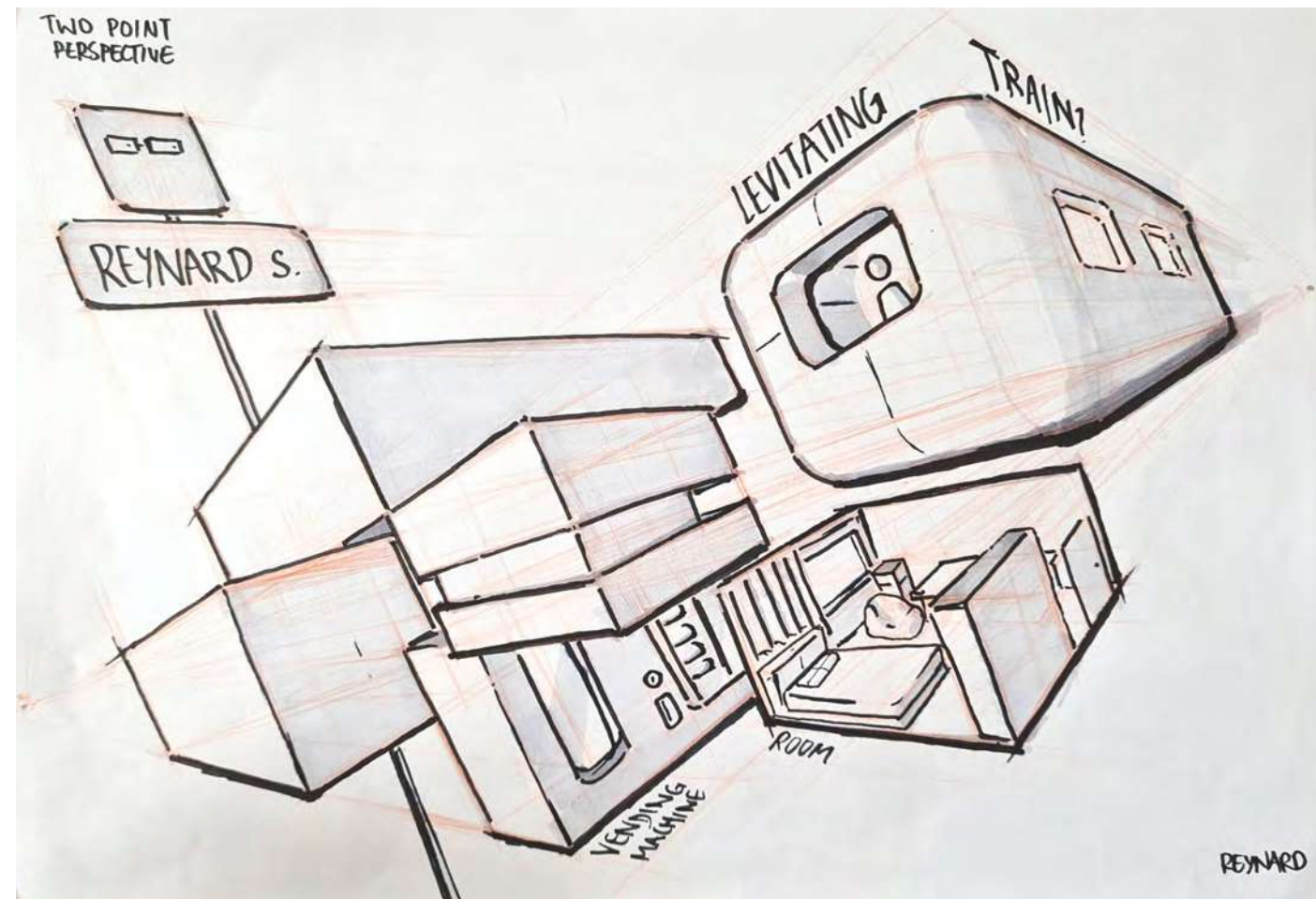
Design Courses

The art of imaginative sketching

Instructor(s)

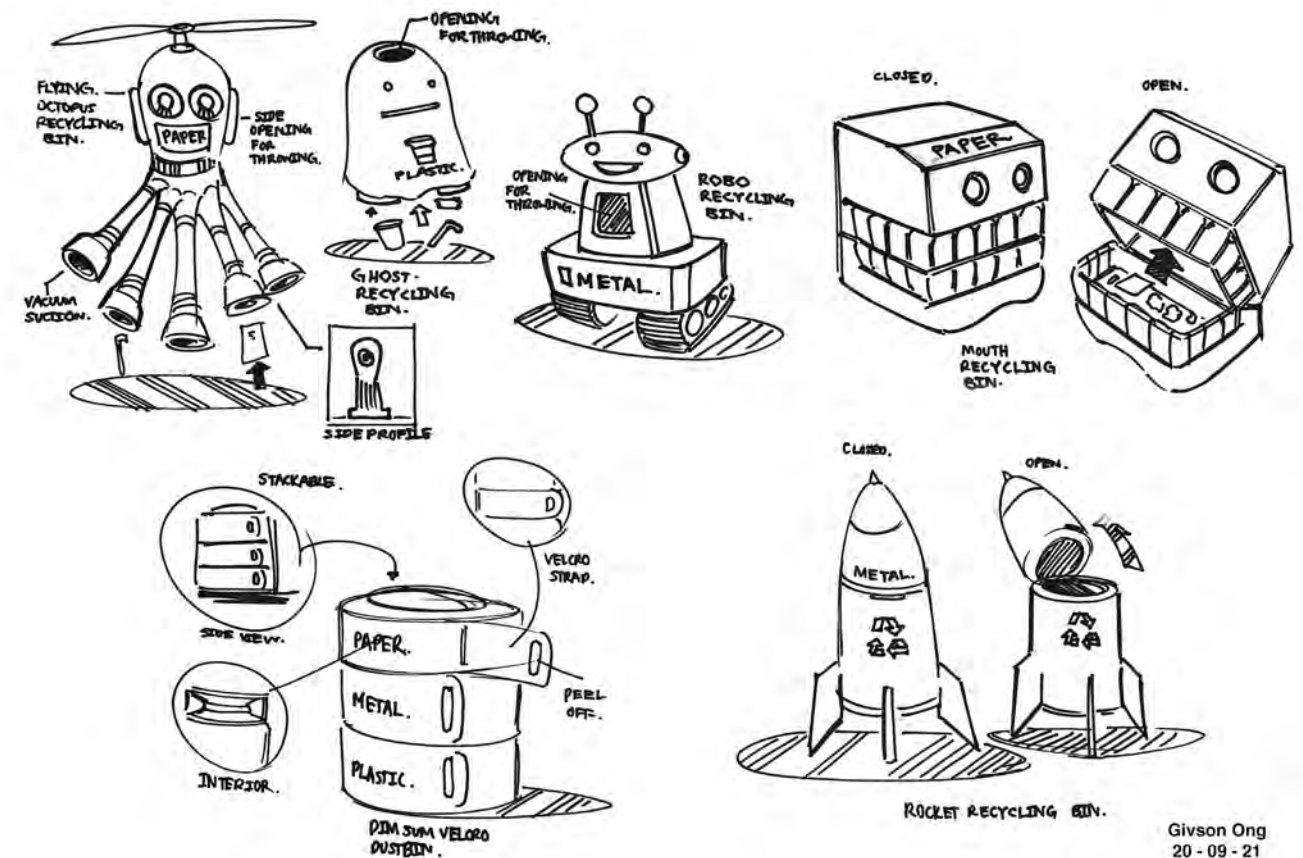
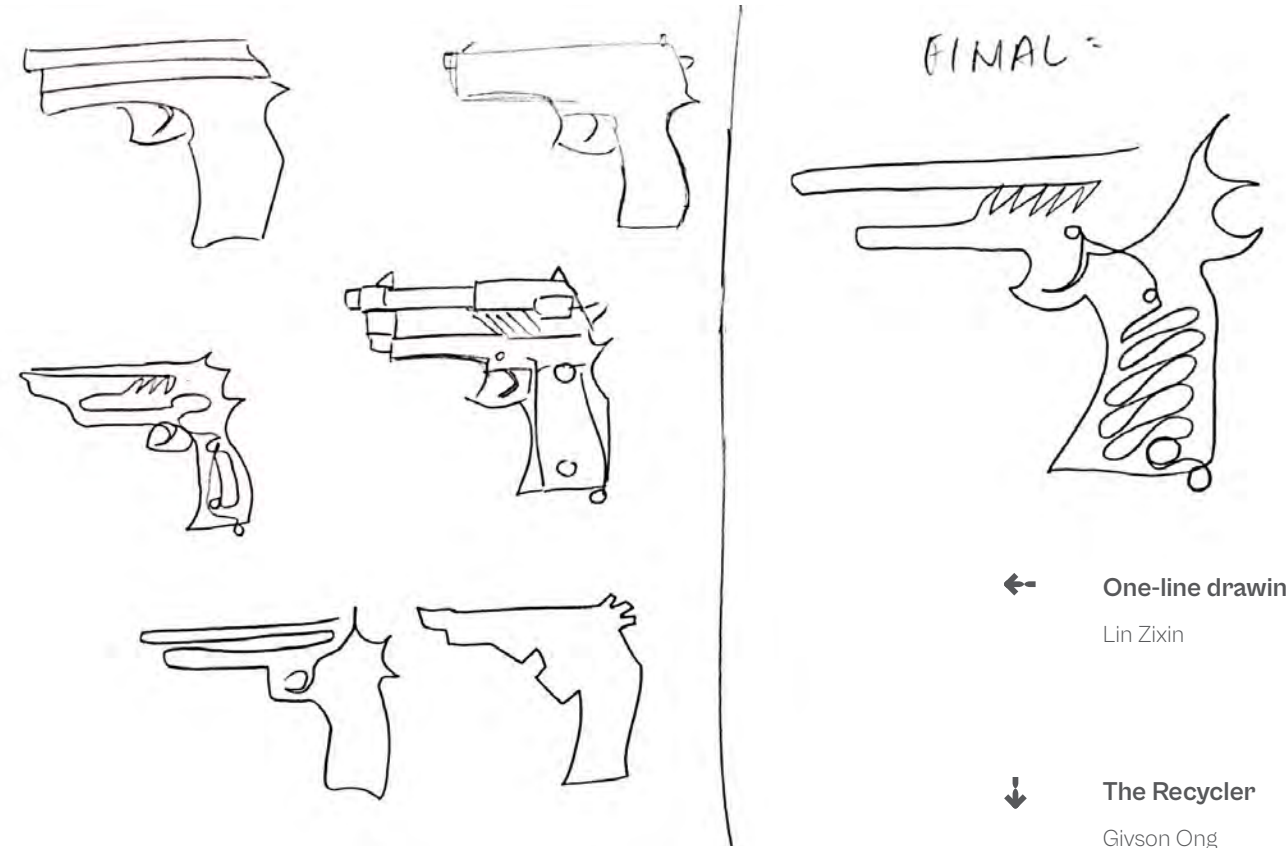
Vincent Leow

This module helps turn any novice illustrator into a creative drawing whiz. Through fun and mind-provoking exercises, it provides students with effective sketching skills to express their ideas visually, turning blank pages into a catalogue of imaginative ideas.



Two-point perspective

Reynard Seah



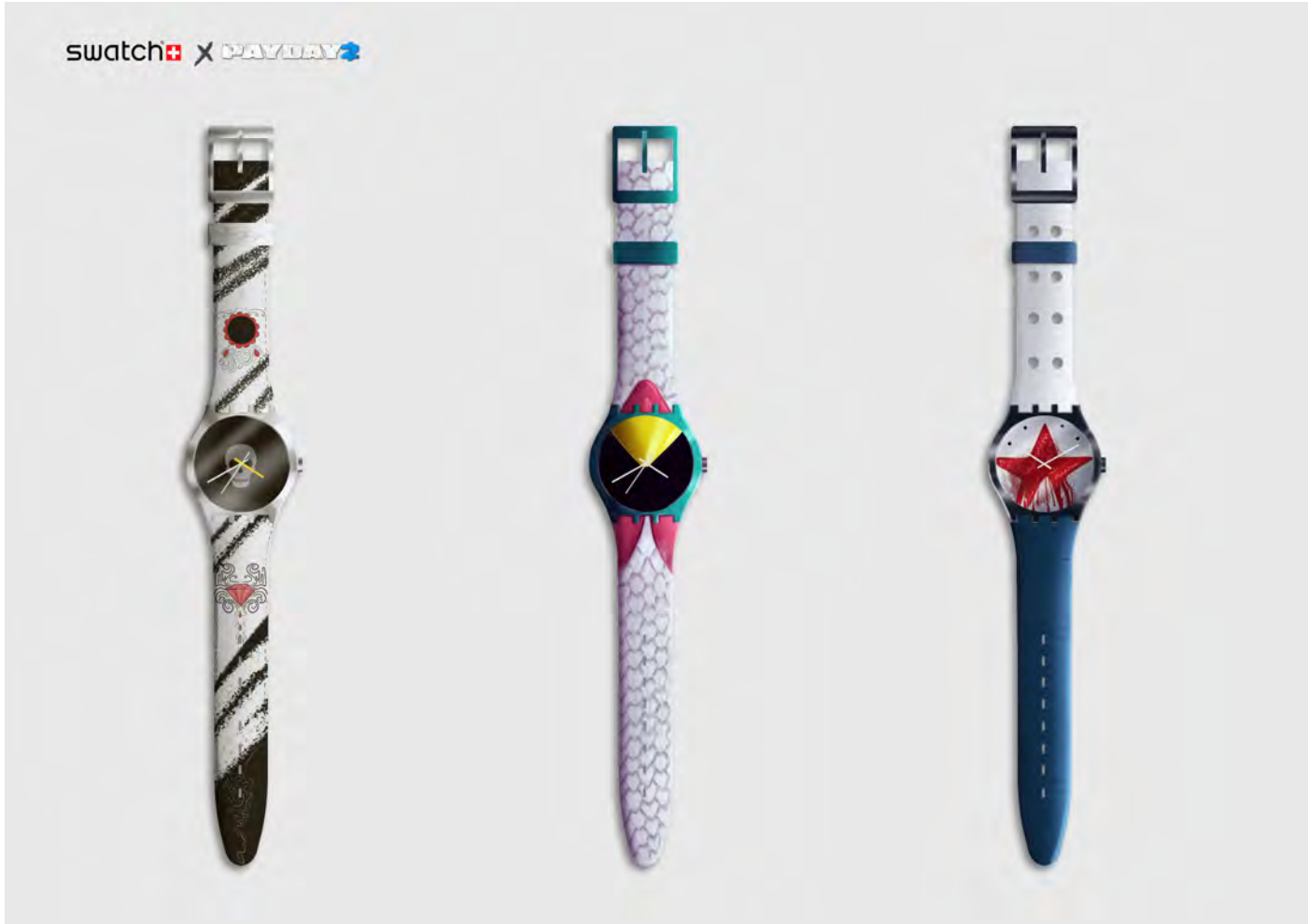
Givson Ong
20 - 09 - 21

Digital sketching & painting

Instructor(s)

Vincent Leow

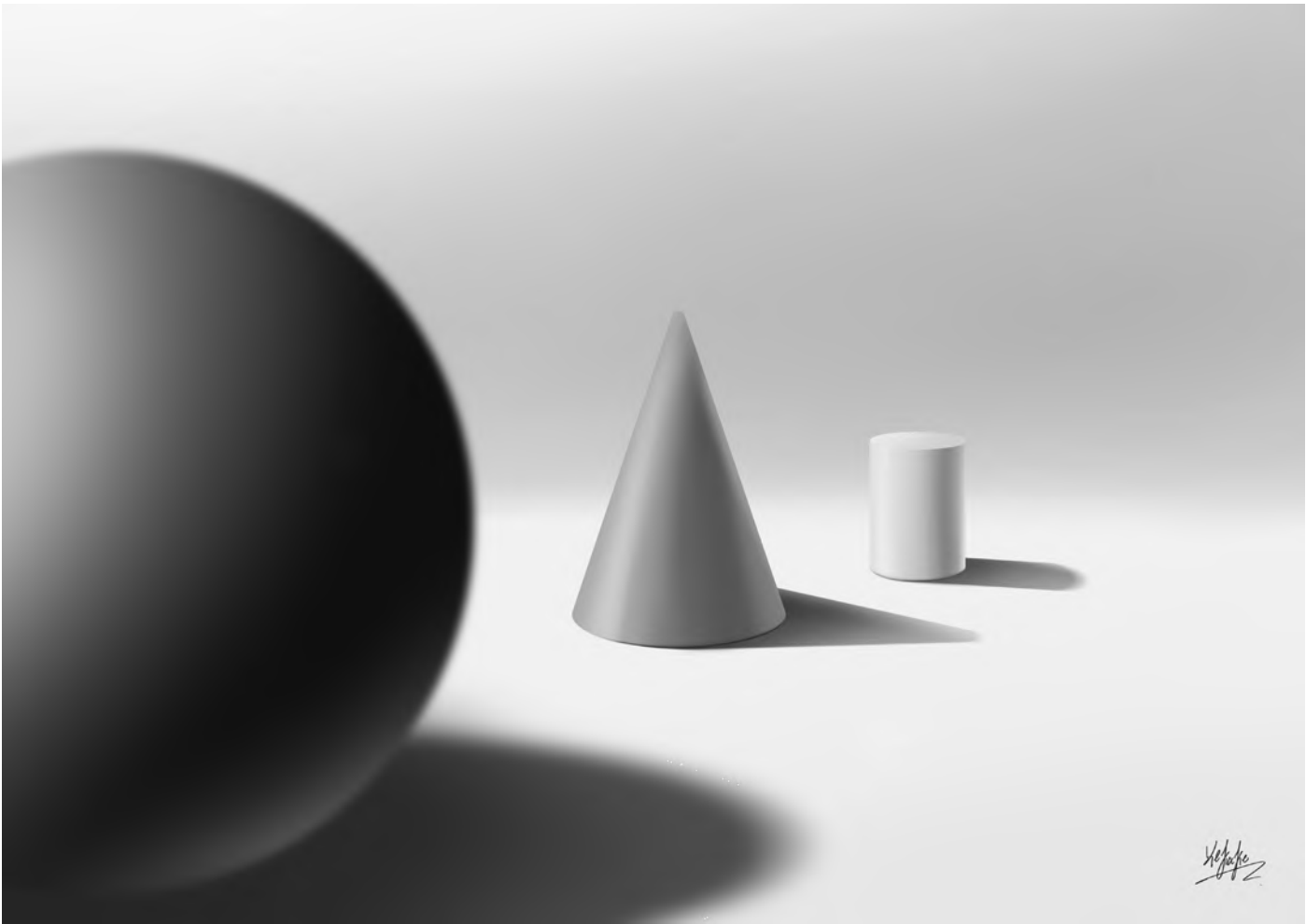
Learn how to create unique pieces of digital artworks using Photoshop. Through a series of weekly practical lessons, students draw and paint using the array of tools in Photoshop while applying ideation techniques to generate unique designs.



Swatch

Use of customised brushes to create textures and patterns

Cao Minh Huy



Geoforms

Understanding of light and shadow through simple geoforms

Ye Jia Jie

Computer aided industrial design

Instructor(s)

Willie Tay

Computer-aided design is an essential part of an industrial designer's collection of skills. Students are taught on the mechanics of three-dimensional modelling and how it can be utilized to design and create products. It also covers how a product can be created to communicate the design essence with the introduction of real-life rendering and interactive animation processes. At the end of the day, students will be equipped with a strong foundation in computer-aided design, allowing them to understand the technical constraints during the design process as well as the ability to utilize these skillsets to execute better design.



Aquio

Inspired by the coffee machine brand, Aquio is a humidifier that embodies Dolce Gusto's playful spirit. It adopts Dolce Gusto's representative organic form in its signature red and black colour scheme, featuring the shiny plastic shell, stainless steel detailing and iconic digital interface.

Nicole Tan Mu En



Marshall Toaster

A toaster concept based on the semantics of Marshall, known for its vintage music amplifiers. It combines ergonomics, functionality and aesthetic balance of the Marshall's iconic embossed logo at its forefront, with a gold brushed accent and knurl textured knobs across the design.

Chong Zi En



Teslon

An iron inspired from the semantics of the Tesla Cybertruck. It holds a rigid, aggressive and sleek form. Holding a futuristic look, it is built with stainless steel and feature glimpses of futuristic light flares.

Ng Xian En David

Electronics as materials

Instructor(s)

Yuta Nakayama,
Akbar Yunus,
Dr. Clement Zheng

Over the course of six weeks, students explored physical computing by crafting their own sensors and circuits out of simple materials. From this exploration, students were tasked to build bespoke game controllers that reimagine the interactions of playing the classic video game 'Snake'. This course culminated in a game festival that offered a myriad of tangible experiences on top of one game.



A lazy controller

This controller allows the player to experience the snake game with minimal physical effort. A maximum of three fingers are needed to play the game and at its 'laziest', one finger is required. This controller uses pressure and touch sensors to alter the snake's direction, speed and to reset the game.

Rachael Anne Lee Hui Ting



A thrilling controller

The thrilling controller is certainly one that gives users a full body work-out when trying to balance off the elevated platform. Users control the direction of the snake by tilting back and forth, left and right while the woodle handle that decides the speed of the game acts as an imaginary support.

Geraldine Tong Xin Yin



A coordinated controller

The snake game has now been transformed into a challenging and rewarding co-op experience as players must coordinate by lifting the straw up and down. They will then have to consider each other's momentum and timing as their ring hits and slides down, which will be both entertaining and challenging.

Muhammad Haziq Bin Roslany

Computing for design

Instructor(s)

Yuta Nakayama,
Akbar Yunus,
Dr. Clement Zheng,
Benjamin Xue

This module introduced the elements of computational thinking and its application in design. Students acquired skills and knowledge in the use of computational logic and methods such as basic programming, data acquisition, and network architecture. Students learnt to apply computational thinking to solve design problems and used computational tools as part of their design process.



↑ Connect the Dots!

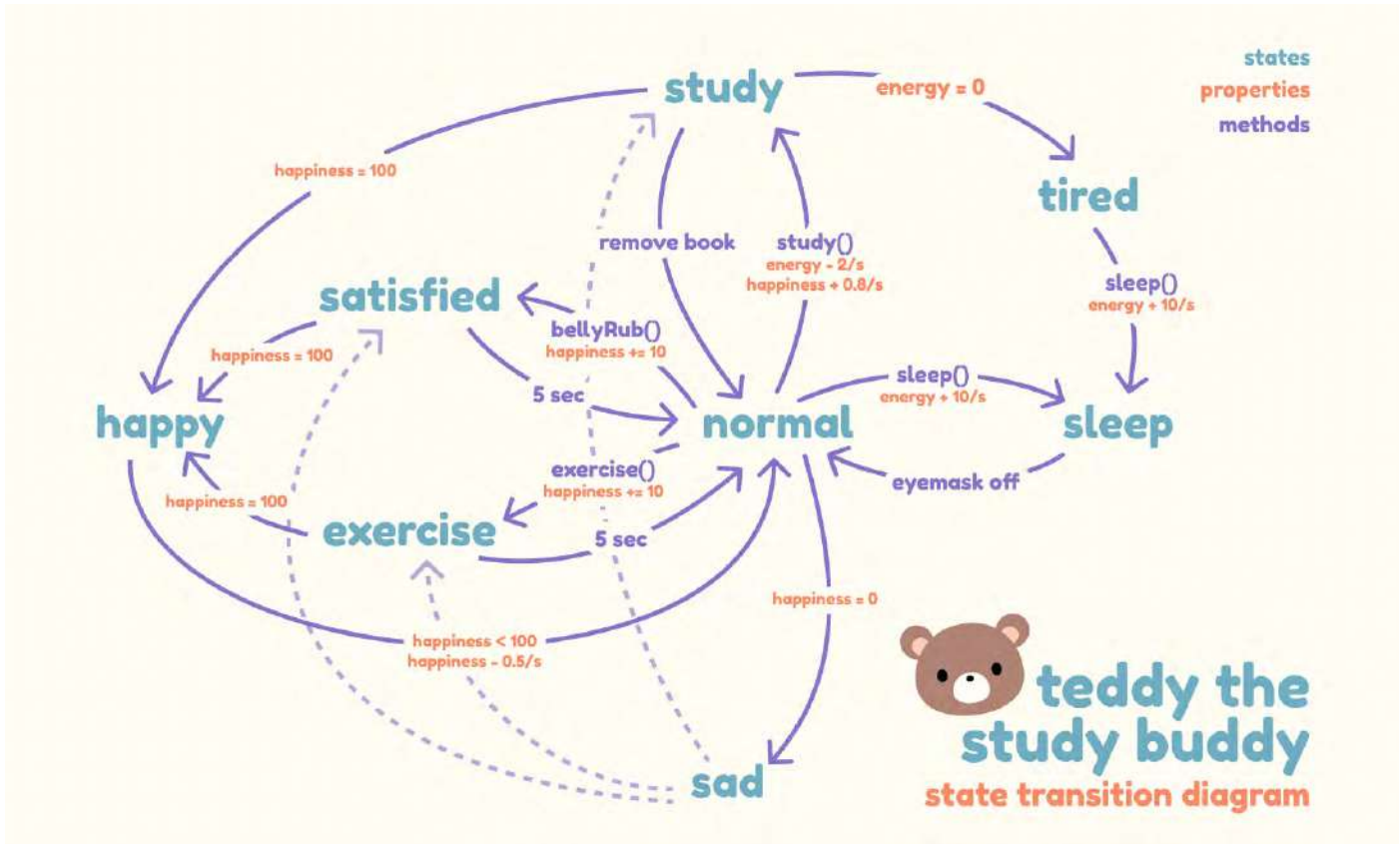
Connect the Dots! is a placemaking project designed to be placed along the walls of the Singapore Art Museum. Aimed to connect the visitors with the museum through simple gestures possible with PoseNet & p5.js, visitors can connect the dots in order to reveal the various exhibits available in the museum.

Chan Wing, Petot Mathieu Charles & Wina Nashita Rakana Adisetiya

↓ Teddy the Study Buddy

Teddy the Study Buddy seeks to help its user cultivate healthy study habits in a fun and engaging way. By interacting with Teddy using its accompanying objects and responsive interface, which tracks and reflects Teddy's mood, users are able to study productively, rest sufficiently and play with Teddy.

Nicole Tan Mu En & Seah Kwee Suan Celeste

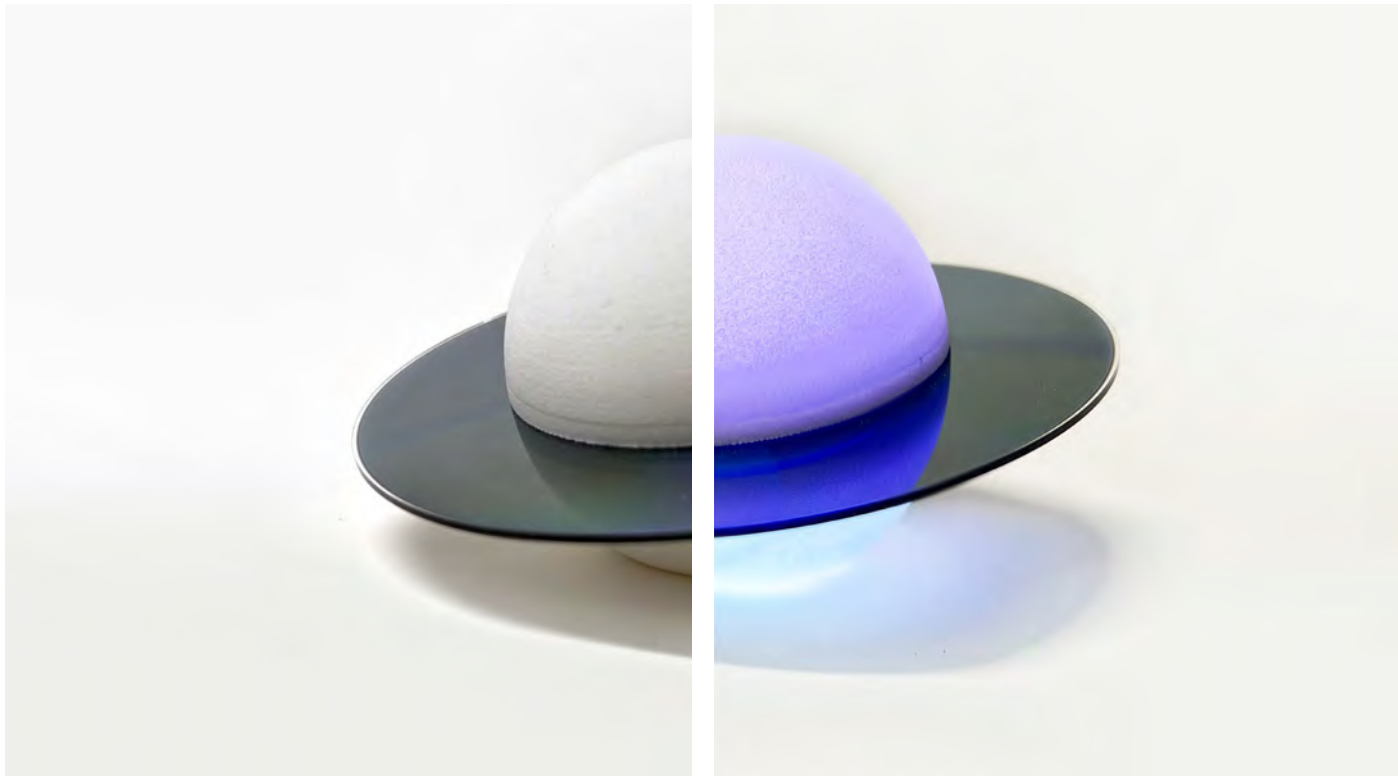


Introduction to prototyping

Instructor(s)

Willie Tay

The understanding of theories and embodied experiences of operating digital and fabrication tools is a core skill set for (industrial) designers that enables them to translate their ideas to a tangible outcome for evaluation. Industry practices of prototyping have embraced the digital revolution, with digital fabrication techniques, designers are now able to fabricate prototypes of varying fidelity with speed and accuracy.



CD Saturn

CDs can do more than store data. Looking at it as a material and placing emphasis on its mirror surface, the underside acts as a brilliant light reflector in this saturn-inspired lamp.

Ye Lin



S-whisk

The S-whisk reimagines the functionality of a S-hook by using the hook's thin, curved body to act as a whisk. Housing two S-hooks, the S-whisk has also been designed to allow adjustable whisking angles that adapt to the user's whisking style.

Gan Jie Lin

The appreciation of wood craft

Instructor(s)

Jason Ong

This module introduces students to various wood-working processes through the fabrication of a small solid wood product and furniture. The syllabus covers instructional demonstrations on the use of hand tools, power tools and workshop machines; as well as the finer points on understanding and appreciating the material properties of wood and good finishing.



Ordinary Oak

Made entirely of oak, this stool was designed to be both sturdy and durable. The curvatures of the stool were delicately hand chiseled to compliment the natural impression of a person's bum to provide comfortable seating for all.

Colette Chan



ufo stool

Taking the form of an unidentified flying object, the ufo stool is made of walnut and finished with bees wax.

Siew E lan



GRAIN

GRAIN, a visually distinctive three-legged stool made from oak and walnut wood. Handcrafted using various machinery and hand tools, the subtle curvature on the seat enables the user to sit with comfort and ease.

Chantel Loh



Walnut stool

The seat profile was meticulously chiseled to reduce the overall visual weight of the stool, while the flat top allows the walnut grain to take centre stage. The natural beauty of walnut wood shines through in this simple design.

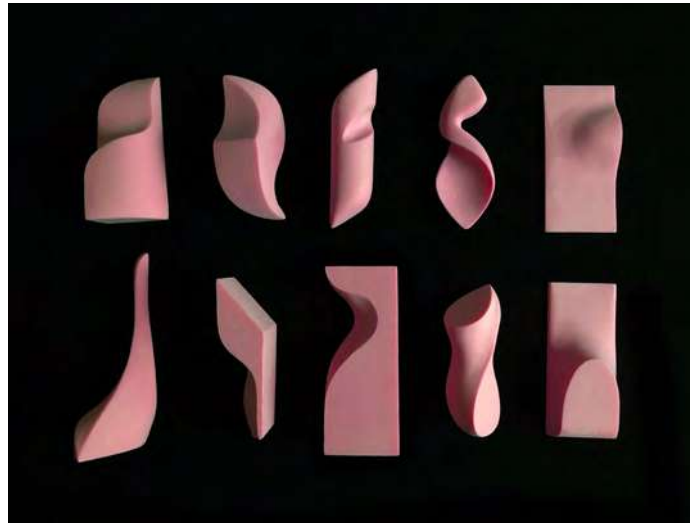
Teh Wen Jan

Form finding

Instructor(s)

Patrick Chia

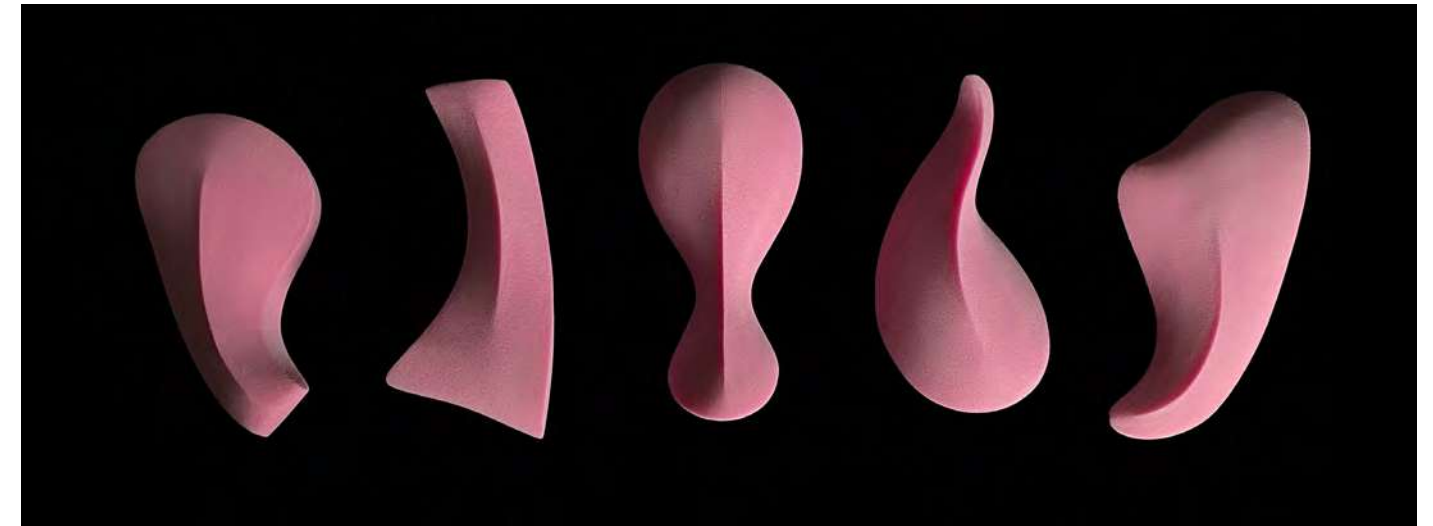
The overall aim of this exercise is to develop perceptual form modelling skills to visualise and make value judgements on the quality of 3D forms, with respect to volumes, surfaces, and details. In part A of the exercise, students learn how to manipulate the material with simple tools, discovering and developing a wide variety of possible forms. In part B, students try to develop different expressions while keeping the same DNA of a selected piece.



Gerrica Eponine Tan Fei



Muhammad Haziq Bin Roslany



Chan Mun Dawn



Patricia Tantrasari Seitiawan

Thinking through making: fascinating flour

Instructor(s)

Hans Tan,
Sheryl Teng

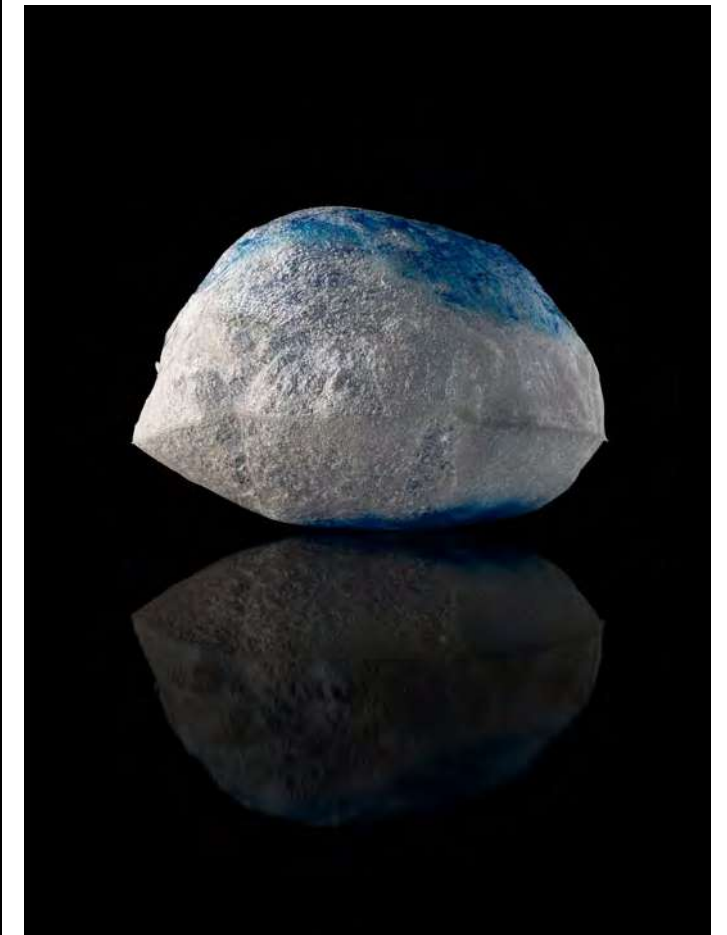
Working with flour as key material and steam as fabrication method, each student is tasked to arrive at a fascinating piece of cooked flour. Immersing themselves into a hands-on exploration process, they take risks and brave failures, harnessing the creative cognitive link between their hands and brain.



Chan Shao Kaye



Jerome Wong



Cheryl Pang

Conceptual design of button controls

Instructor(s)

Dr. Christian Boucharenc,
Tan Sixiu

The aim of this discovery exercise is to develop a conceptual understanding of the physical attributes, control functions and visual signals of buttons used in general product design. Each of these buttons should have one of the following functions: to push, pull, swift, shift, etc. The presentation of the final prototype should be the closest representation of a real product in terms of form, ergonomics, colour and texture.



Scales

An exploration of fish scales and its intricately delicate features. Buttons are designed with scales layered in three contrastingly different but carefully detailed arrangements to create an interactive and sensory experience - rotate, stroke and slide.

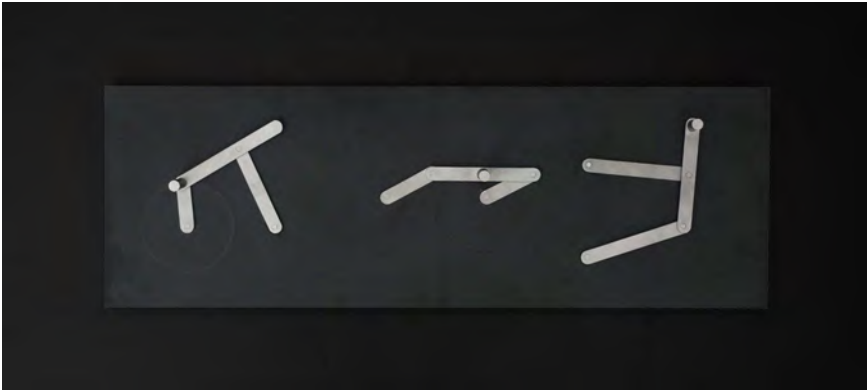
Kwan Jia Chen Suzie



Skin

Designed to mimic our skins' unique features and interactions, these skin-inspired buttons enable users to experience a soft, smooth touch that feels as intimate and as genuine as experiencing the interaction with real human skin.

Muhammad Haziq Bin Roslany



Like Clockwork

Like Clockwork is a series of buttons consisting of mechanical linkages that move along a parallel plane when the user shifts their corresponding vertical handles. The varying lengths of the modules and positions in which they are joined allow each button to produce unique and unexpected user interactions.

Chan Shao Kaye



Visual literacy

Instructor(s)

R. Brian Stone

This fundamental course focused on honing one's ability to interpret, negotiate, and make meaning from information presented in the form of images. Through a series of exercises on design synthesis, gestalt theory, color interaction, rhythm and balance, organizational systems, typography, and communication hierarchy, students heightened their sense of visual literacy. Studies were then culminated into a booklet which described learning outcomes and reflection.



↑ Reynard Seah



Jared Lim

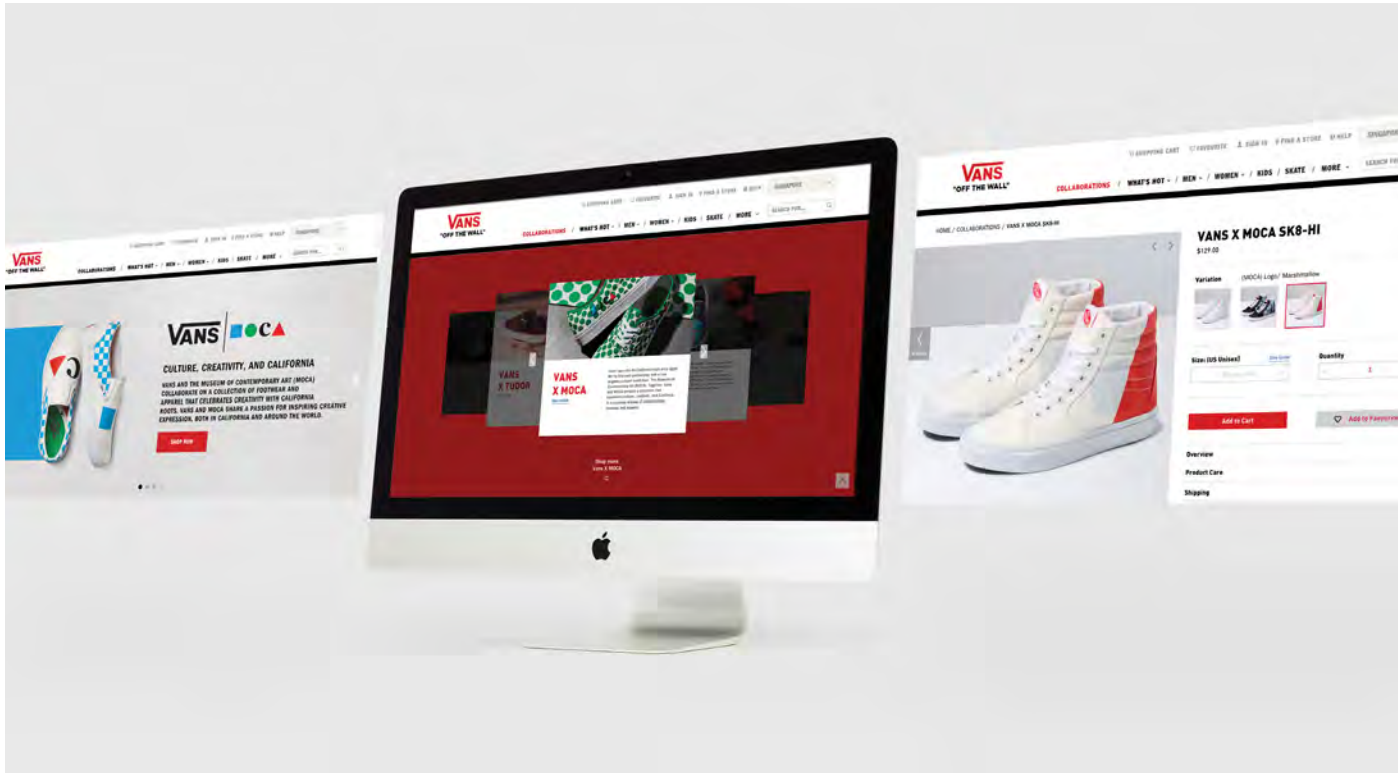


Interactive interfaces

Instructor(s)

Alistair James Norris,
Suhuan Jin

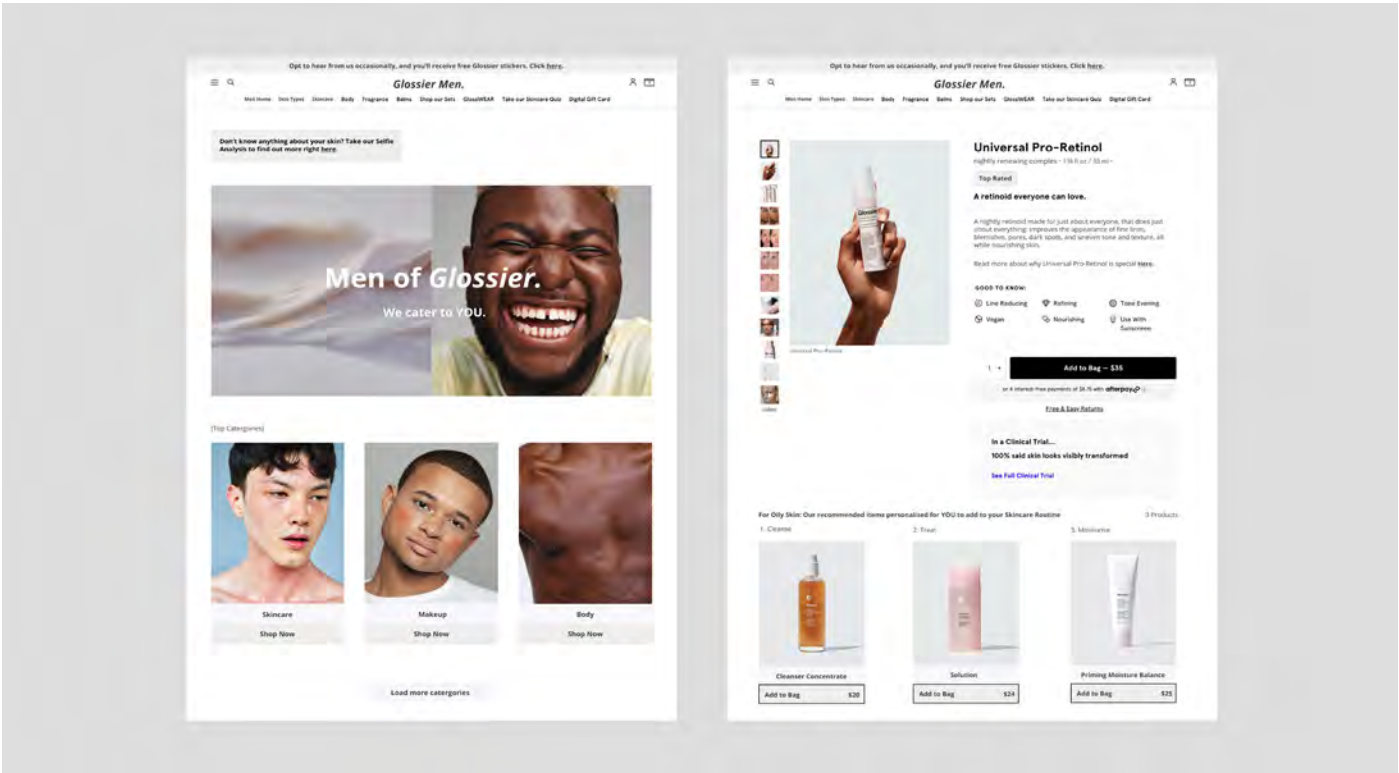
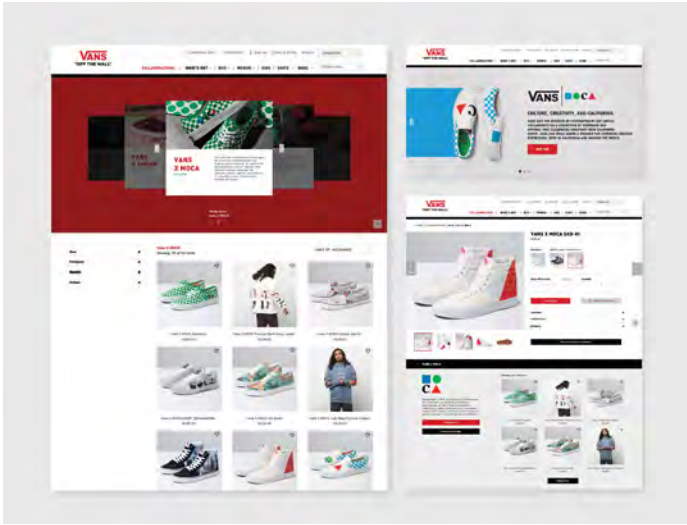
A 1st-year fundamentals module focused on designing through iterative cycles with real users. Students learned to not only design sacrificially but to recruit and interview while putting aside their bias.



↑ **Reiterating Vans' site**

A reiteration of the Vans website pushes the boundaries of exploration in browsing through the brand's collaboration products. Seamless card sort features and navigation buttons on product details page offer users an endless browsing experience in one sitting.

Chan Mun Dawn



↑ **Glossier for men**

Aiming to explore the hypothesis of elevating men's skincare shopping experience through a male-centric website, iterations of the Glossier page were made based on the feedback given by real male interviewees. The design aims to cater to men by enhancing aspects of simplicity, efficiency and aesthetics.

Sophia Chin Ying Ting



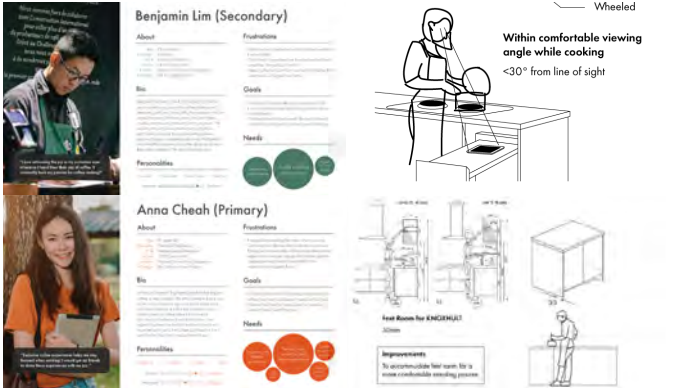
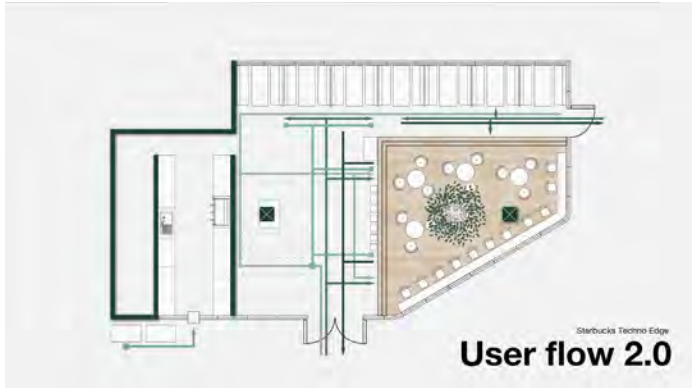
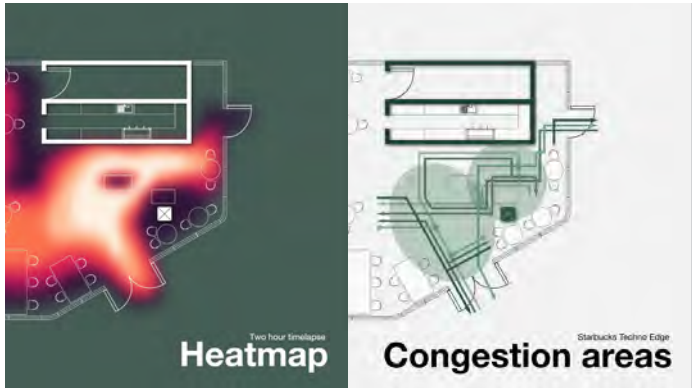
Human-centered design

Instructor(s)

Song Kee Hong,
Timothy Hoo

This module on Human-centred design aims to teach an approach to problem-solving that is often embedded in the design process across different design disciplines. This approach to design development aims to create design outcomes that are more usable and efficient by focusing on users' needs and requirements of their tasks.

This often involves applying ergonomics and usability enhancements to make design easier to understand and use. It may include user research methods in the design process – from observing and identifying problems from the user's perspective, to validating outcomes with target users to determine the success of the solution.



More bucks for Starbucks™

This project focuses on increasing the transactions in Starbucks™ by improving customer experience. Analysing data collected from observational studies, surveys and interviews, Starbucks™ has been redesigned in terms of store layout, customer flows and ambience. A multitude of marketing techniques were employed based on customer psyches to enhance their experience.

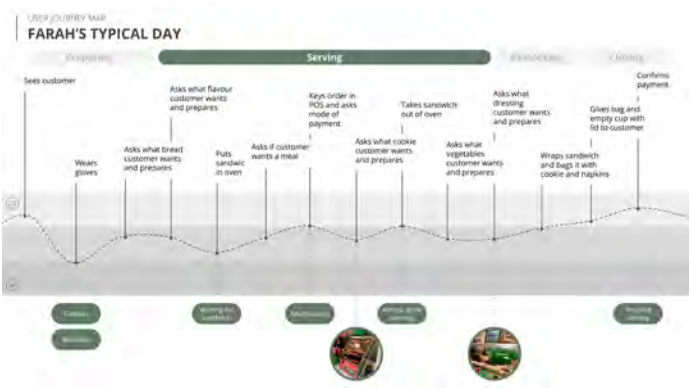
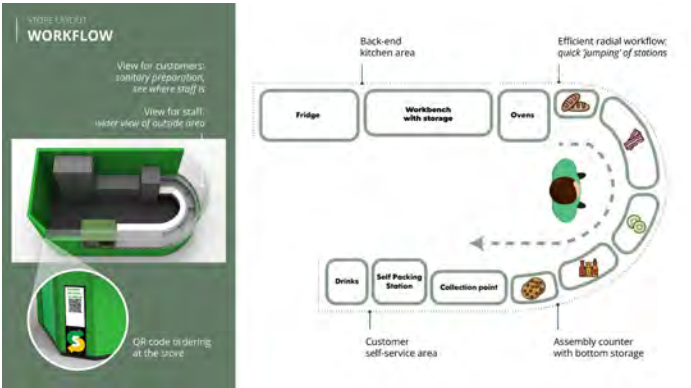
Goh Bing Jun, Lim You Guang Bryce, Cha Ju Hyun, Eda Yasmin Binte Asni, Isabelle Brigitte Kirkwood & Chan Zheng Qi Zoey



Enhancing the Subway experience at NUS

Aiming to achieve an efficient one-man operation in the NUS Subway branch, pain points of staff and customers were identified by mapping user journeys. This resulted in a two pronged strategy of a curved store layout to improve staff workflow and shorten queues through the implementation of a web app.

Teo Swee Yin Chanelle, Daniel Loh Yi Zhi, Wang Yu Wei, Teng Xin Yun & Rachael Anne Lee Hui Ting



Colours, material & finishing

Instructor(s)

Celia Wong

Colours, materials & finishing (CMF) is in everything we can see and touch, it also plays a part in our sense of hearing, smell and taste. CMF plays a vital role in holistic design quality.

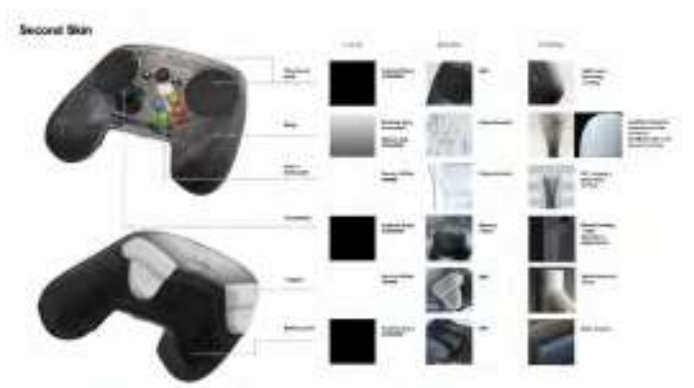
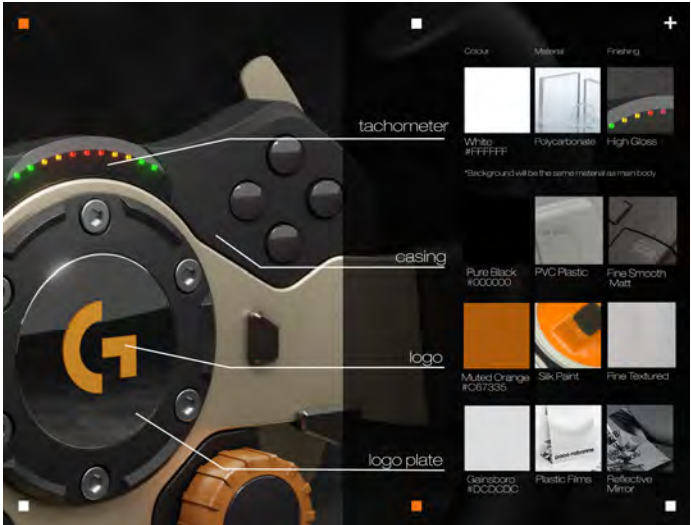
This module aims to increase sensitivity in relating the context of design application, with meaningful choices of CMF, through the process. Perceived values can be more effectively articulated through stronger associations in CMF. New application can drive design innovation, challenging limits in technology. The topics include observing design trends, translating the leading design influences into the relevant palette, exploring and specifying colours, materials and finishing.



Functional Essentialism

In the time and era where brands and companies are constantly using flashy colours and bright RGB lights to capture your attention, consumers have grown tired and developed digital fatigue. In search of a productivity lifestyle that is distraction free, Functional Essentialism is an upcoming trend that tech enthusiasts would appreciate. Functional Essentialism is texturally complex and vibrant yet monochromatics in neutral colours.

Wong Eng Geng



Second Skin

With brands polluting surfaces of products with much unnecessary clutter, transparency strips away noise for consumers to truly appreciate objects and their pure functionality. Second skin goes beyond the surface, evoking a sense of curiosity and playfulness. This 'skin' enables us to respect the raw guts of a device or underlying colour, acting as a protective layer, making an object a timeless piece.

Siew E Ian



Austere & Untouched

In this new era where people romanticise the purity of unembellished and raw environments, this is a study of what happens when the trend of using nature-inspired palettes with tactile materials is transferred to a commonplace and highly manufactured product, creating a striking exploration of the juxtaposition between the two.

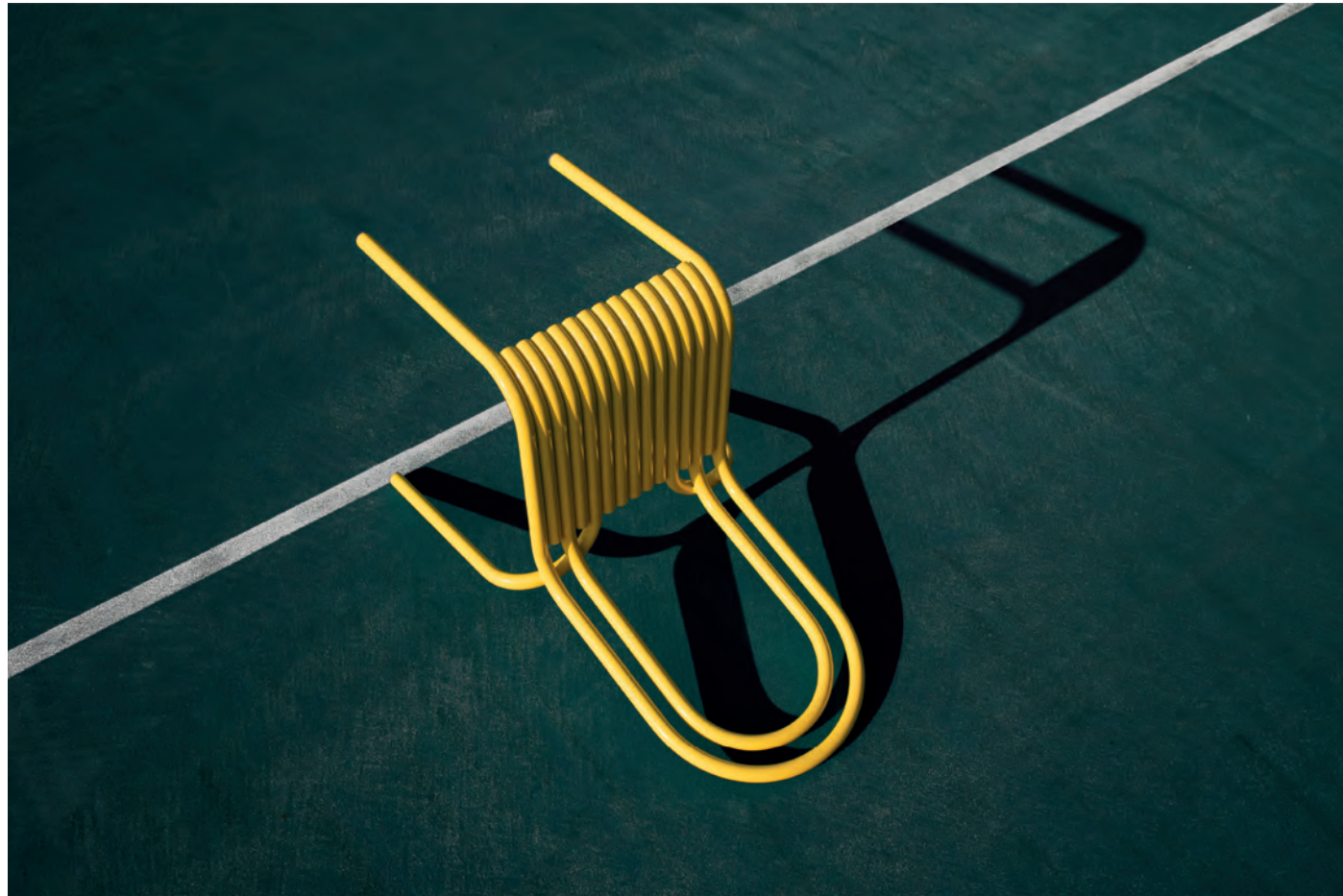
Tan Ying Lin Valeska

Product photography

Instructor(s)

Poh Yun Ru

This module breaks down everything a professional photographer uses to bring products to life in a photo. Students will learn the basics in framing, shooting, lighting, setting up, and post-processing to accurately represent products in an image. It will enable the students to express these ideas and more through the tools and techniques of photography. Through practical activities, students will then dive into the different photography styles. The students were tasked to compose a series of images with the outdoor furniture that best conveys their personality, style and character.



Gwen Pang Ying Qi



Clarissa Edeline Yu



Ye Jia Jie

Design Platforms

As part of our strategy to evolve constantly, a major component of the course is the Design Platforms.

From their second year, students can tailor their individual course of learning by selecting two concurrent studios from a variety of eleven to fourteen different design projects offered every semester. Topics of each design studio are in line with the department's strategic focus areas, consisting of Commercial design, Social design, Exploratory design and Discursive design. The range of different topics under these four focus areas reflect the pedagogies of the ever-expanding role of a designer in the current society. Presented here are student works, where students tackle both conceptual and real life projects with industry collaborators. With this constant engagement of industry collaborators, students are exposed to real industry working experiences and develop relevant skill sets.

The structure of the Design Platforms allow junior students and senior students to work together as a group, which we call 'the vertical format'. Students in a lower year will take up the role of a junior designer. Whilst senior students have the opportunity to assume the role of a senior designer. This arrangement reflects the prevalent importance of group dynamics in industry space.

Future of work

Instructor(s)

Dr. Lee Jung-Joo,
Chew Jia Ying,
Dr. Lee Li Neng (Psychology),
Loh Ai Poh (Engineering)

Collaborators

Johnson Controls,
Faculty of Engineering,
Department of Psychology

Unprecedented disruption caused by the pandemic has propelled the topic of "Future of Work" to be more critical than ever. The accelerated shift towards remote work introduced new values such as wellbeing, trust, collaboration, flexibility and sustainability. These values have since become core tenets for work and work environments, particularly for Gen Y and Z employees. This platform tackled this topic through a design-driven transdisciplinary lens, in collaboration with the Department of Psychology and Faculty of Engineering, as well as Johnson Controls as our industry partner.



↑ **AiDA: a new dimension of productivity**

Tackling productivity in a hybrid workforce, AiDA is the future companion of employees that aims to empower productivity anywhere. Through the use of smart AI and IoT, AiDA's ecosystem of products detects and creates a personalised working environment optimised to each employee's productive state - from home to work.

Sarah Tan Wen Hwei, Aye Phyu Thant, Natalie Lee Hui Wen & Liang Yude Lawrence

↓ **Empowering employees through radical flexibility**

Cospo is a digital office that enables radical flexibility, where employees are empowered with the choice over when, where, and how they work. With Cospo, employees can enjoy internal employee mobility and better work-life integration. Complemented with configurable office spaces, it also supports the effortless transition between productivity and collaboration.

Gwen Pang, Ko Na Yeon, Zhang Yue & Benjamin Chan



Alive

Instructor(s)

Christophe Gaubert,
Poh Yun Ru,
Nathaniel Tan

In a wish to explore what designers can bring in the context of Climate Change, this platform proposed to design objects that allow conversation with the living. Mediating objects, allowing contemplation, open-mindedness or provocation, these projects aim to offer a different perspective on the nature surrounding us. Beyond Design, they are a modest contribution to a big topic that should concern everyone of us.

After studying selected species, from their phylogenetic family to their endemic variant, the students conceptualised a possible dialogue with them, embodied in the form of a practical, symbolic or discursive object.



↑ **Harena**

Like an empty frame displaying living nature, Harena highlights the Asian domestic gecko (Hemidactylus frenatus). Attracting nearby insects, including inauspicious mosquitos, this open stage becomes the spectacle of a salutary night feast.

Kianne Lim & Celine Chan

↓ **Corol**

Corol is a manifesto of the desirability of the coral torn from reefs, whose admired beauty is nothing but the skeleton of a dead animal. This jewellery collection only reveals its intrinsic colour when it is put back in the water, the coral's native environment.

Huang Anqi & Kwang Yu Hang



↑ **Twee Twee**

We often hear birds before seeing them. The Twee Twee collection pays tribute to the diversity of tropical birds found in Singapore in a form of colourful and singing wooden roly-polies.

Li Si Yi & Canice Ng

Improving everyday life

Instructor(s)

Dr. Christian Boucharenc,
Tan Sixiu

Improving everyday life starts with discovering a problematic situation in our daily life. The student develops an acute sense in observation and problem definition, to devise a design solution or creative alternative to improve an everyday or ordinary day encounter. It presents an opportunity for students to consider people behaviours, mindsets, and lifestyle habits. The design outcome can be a new product, a built environment or digital application.



Home Fit Home

HOME FIT HOME is a smart home fitness system that marries interactive guidance with the workout your body needs. Comprising an app and a mat that gets to know you, they work as a navigational tool that adapts with you at every step of your fitness journey.

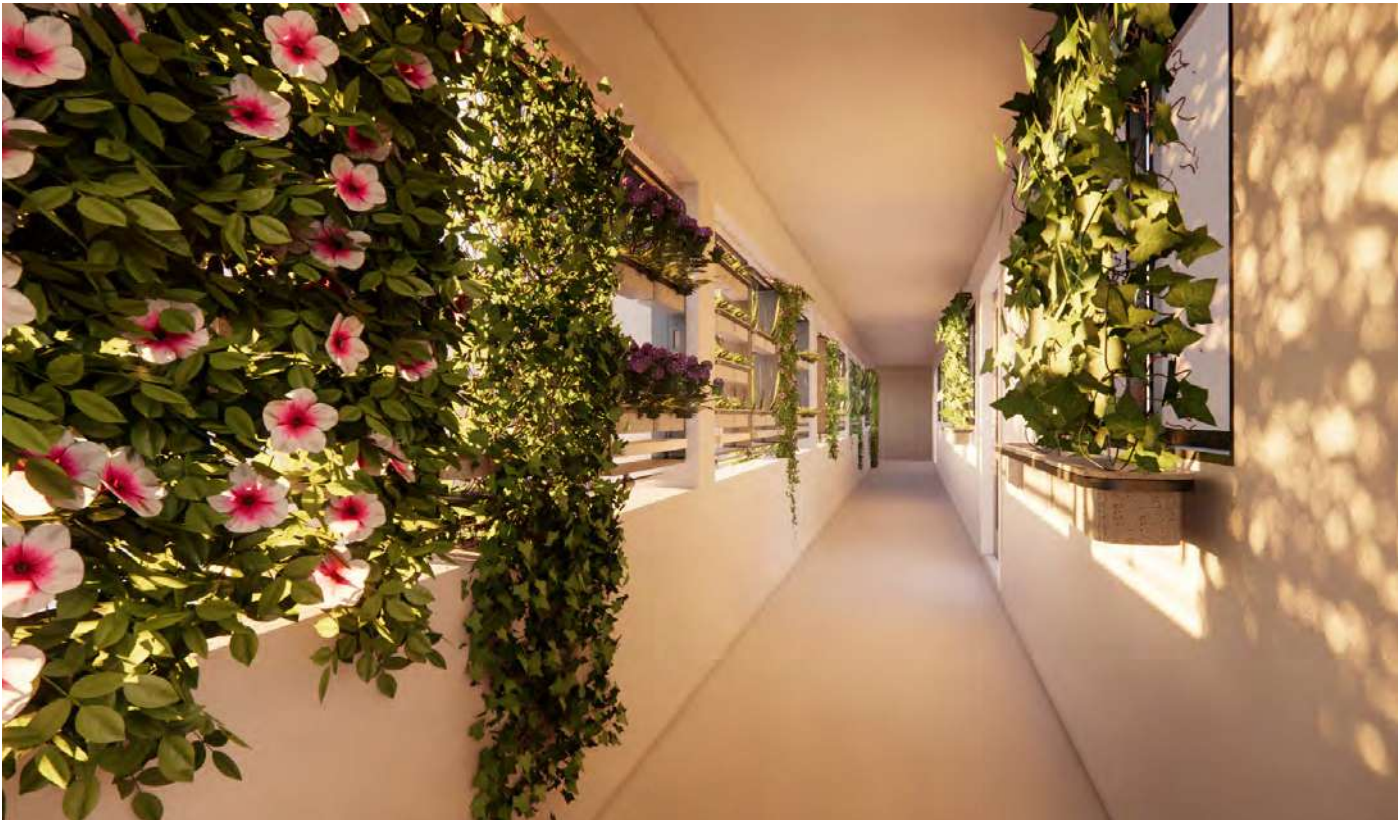
Karen Gan & Goh Jia Hui



Verdure

Verdure is an original global farming system built and designed with the totality of high-rise apartments, especially in Singapore, where there is a biodiversity and tropical climate. This concept re-embraces nature back to our living space, fostering social cohesion through the creation of lush greenery to our mundane space.

Ong Kah Min & Chong Zi En



C for cast

Instructor(s)

Hans Tan,
Stacey Yip

Collaborator

NUS Baba House,
students from the
Culinary Institute of
America (Singapore).

This studio is an experimental inquiry of casting as a phenomenon, extending it as a key enabler of mass product manufacture in industrial design to the context of food design. Casting with moulds to produce repeatable shapes can date back centuries in culinary practices. Students experiment to redefine casting methods and tools common to Kueh (Southeast Asian "pastries"), producing new versions of traditional recipes that reinterpret the narratives of heritage in food.



Overview of all the Kuehs

→ Porcelain Kueh

Porcelain Kueh is a kamcheng-shaped Ang Ku Kueh. Its casting method mimics porcelain moulding and the way of hand painting the colors. A reimagining of how kueh can be made more precious while reflecting Ang Ku Kueh's cultural festive origins.

Kwa Li Ying & Chantel Loh



→ Xiang Kueh

'Xiang' means auspicious in Chinese. Xiang Kueh is a re-conceptualisation of Steamed Kueh Lapis that is inspired by how it is consumed, layer by layer. Embedded with messages, each layer of Xiang Kueh reveals something different for joyous occasions.

Lee Zhi Ying & Claudia Goh



→ Kueh Batu

Inspired by geometric tessellations and the traditional Kueh Bangkit, Kueh Batu is designed to support nesting, symbolising the building of communities. The modernised kueh can be eaten devoid of any occasion.

Clarissa Edeline Yu & Lim Zhi Stacy



Fictitious forms

Instructor(s)

Olivia Lee

In Fictitious Forms, students are tasked to invent an imaginary premise and design a collection of utilitarian objects uniquely suited to that world. By applying their industrial design skills in the creation of diegetic objects (fictional design props), students demonstrate their ability to: reframe problems, interrogate context, extrapolate from research and communicate through sophisticated product storytelling.



↑ A world without mark making

In a world where mark-making with ink is taboo, an engraving-based society emerges. Chloe and Elicia have reimagined the systems of communication, authentication and identification in this world and illustrated it through the context of an airport embarkation experience.

Chloe Chan & Elicia Low



↑ A culinary set for a world of symmetry

Two students, both named Rachel, conceive of a world where symmetry is the defining standard of beauty and order. They have designed a series of kitchen utensils that illustrate the ceremony and rituals that come with prioritising symmetry in the everyday.

Rachel Sim Si Hui & Rachel Tan Yu Jie



↑ A world with no thumbs

What if humankind never developed opposable thumbs? Playing with our sense of urgency and familiarity, we designed a humble first-aid kit for this world – forcing us to reexamine our entire vocabulary of finger dexterity in everyday life.

John Marie Tan Hui Zhong, Rain Tay Xin Yu & Valerie Ng

Smoke and mirrors

Instructor(s)

Kevin Chiam

From automatic, sliding doors to Special Projects' Magic UX, we experience magical moments on a daily basis; some might be less inspiring while others are powerful and memorable. Magic operates at the delicate intersection of art, science, engineering and design. In fact, magicians are very similar to designers; both professions strive to create unforgettable moments for their audience. Design magic is rooted in strong research fundamentals, and all exceptional experiences are seeded from a simple hypothesis. There can be many but the platform's journey begins with this notion: "The principles of magic can be meaningfully applied to the design of everyday interactions".



Oatsu!

With sound analysis sleep tracking, Oatsu is here to enrich your morning experience by helping you understand your own sleep and guide you to rest like many other sleep apps. By overriding the users' perception of time by presenting time differently, users are drawn into the illusion of having more than 24 hours a day.

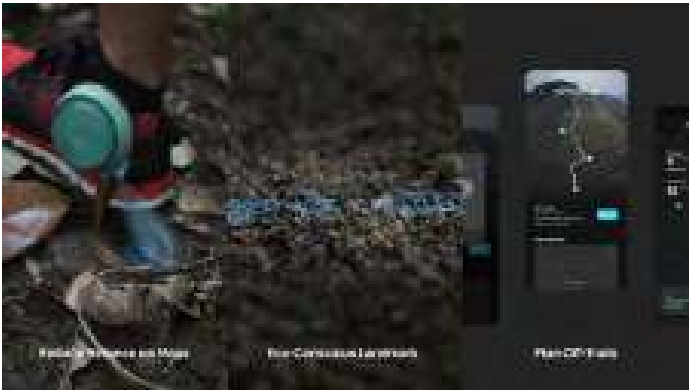
Yong Zhen Zhou, Ziling Loo & Chew Shi Yun



Kinesis

Kinesis leverages upon the digitalisation of donation boxes, by implementing a device and interface which seamlessly interacts by short-range communication technology, tangibilizes the unseen aspects of the experience by lighting animations, and ultimately connects donors to the beneficiaries they come to impact.

Ng Xian En David, Leong Jo Yie & Tan Guan Quan Ivan



Rebo

With "Vanish" as our magic principle, this project aims to vanish the reliance of maps in the process of wayfinding. Rebo is an attachment that enables safe and eco-conscious off-trail exploration in hiking by dispensing fertiliser.

Serene Tan, Choo Yuan Jie & Xiao Jieying

Everything is launched

Instructor(s)

Donn Koh

This platform brings students through the opportunity identification and validation process to create a market-ready idea for crowdfunding. The projects are developed with production-ready finishing and detailing, and launched for crowdfunding to assess their real market performance. The best teams finished the 13-week course with a product on the market, a pool of pre-order customers, and a handsome profit to further their business.



Buru-buru

Buru-buru is a motion activated dispenser that instantly converts any foaming hand soap into a cloud of bubbles. With buru-buru, every hand wash becomes a fun, engaging experience. Buru-buru's bubble medium also offers better all-round surface coverage over hands as compared to conventional foam or liquid-based soap dispensers.

Cheng Zaiyang, Lucas Ho Yi Jing & Chua Zi Xin



TOFO

TOFO is a cute virtual pet that lives in your pen. With many reactions and expressions, TOFO makes writing more enjoyable and encourages kids of all ages to write more.

Cao Minh Huy, Grace Zhang Bo Ya & Wu Junyi



Candlebar

Candlebar introduces a fun, interactive, and delicious twist to traditional scented candles. It takes the familiar form of a chocolate bar - simply break off squares and combine flavours to instantly create new scents. Candlebar also introduces the Melt Tray; no more open flames, for a safe, clean, personalised scent experience.

Mabel Khaw Shi Qi, John Tay Jo Han & Ong Jingheng Travis

Haptic everyday

Instructor(s)

Dr. Clement Zheng

In the current design and technological paradigm, haptics is often a by-product of the components selected rather than an actively considered design feature. A paradigm that (arguably) places an emphasis on visual appearance in our vision dominant culture. In this platform, haptics as a design consideration takes center stage. Design students explored materials through the lens of haptics. From this exploration, they defined new material systems for haptics and systematically characterized the haptic behaviour of these systems. They then designed and built real world applications on top of the new haptic systems they developed.



↑ Happily Haptic Lab

Happily Haptic Lab is an exploratory research project that sought to create haptics using a standardised set of materials, consisting of 3D prints, magnets and hall sensors. With a vision of modular controls and customizable haptics, we designed modules that could be housed in chassis of various form factors.

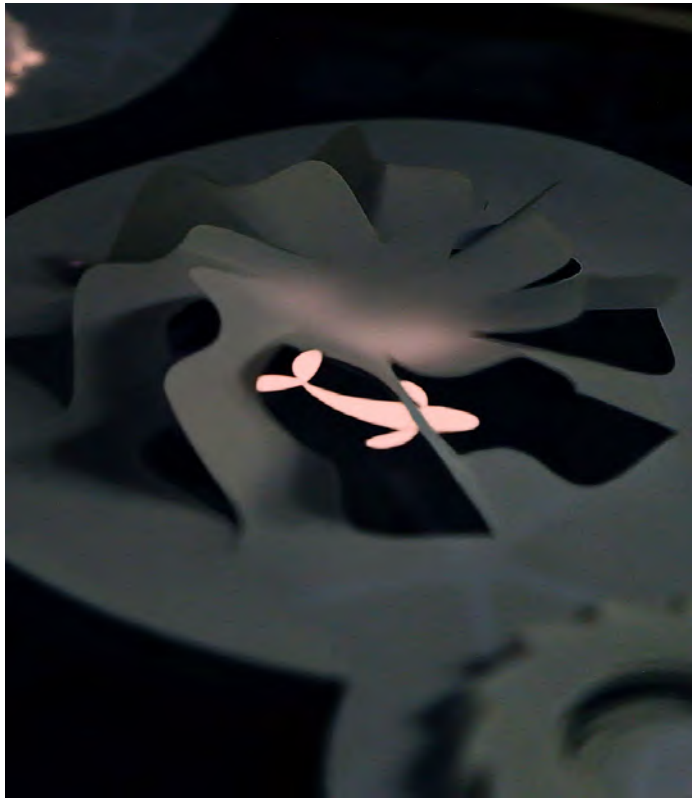
Isaac Lim, Ye Jia Jie & Jonathan Low Kai Yi



Tactylar

Tactylar is an exploration of parametrically designed kirigami switches that transform two-dimensional sheet materials to three-dimensional haptic buttons. Different patterns result in buttons with distinct visual, auditory and tactile feedback, which can be applied to flat screens to tangibilize the relationship between what is seen and what is felt.

Tay Ying Qi, Tan Zhi Qi Vivien & Ng Keng Wei



↑ Creamy Clicks

A haptic exploration that enhances the physical touch feedback of a device - neodymium magnets, providing a familiar clicking force, are embedded in silicone membranes that achieve a satisfying tension.

This material system offers new techniques of creating robust yet adaptable devices such as wireless controllers, customizable lights, and enhanced prosthetics.

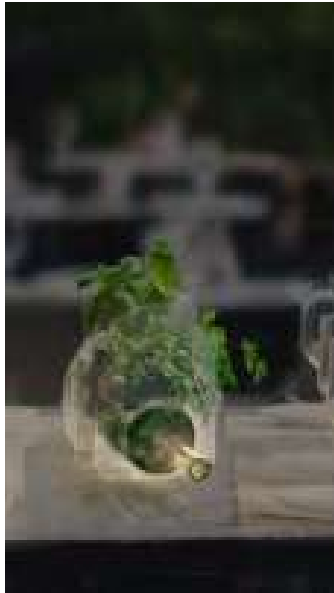
Celeste Loh, Prasanth Kumaar & Mok Zijie

Alchemists

Instructor(s)

Ash Yeo

"Beauty as part equation of Utility" is interrogated with Design Art outcomes, as total aesthetics is valued with two Sustainability hosts: Material Wastes & Design Acts (applied-arts). Pushed to their teleology (means &) ends, Alchemy happens when both produce works, resonating larger than their sum of parts as beauty magically emerges, and happens.



Herbaway

As a sustainability slow-movement design-art kit, Herbaway upcycles wine bottles into pleasing geometrical assembly modules, where plants herbs and glass present bon-vivant greens to the minimal art of living environs.

Chan Wing



Komorebi

Komorebi eloquently captures light as they dance through trees. Noticing it centres and calls us to present-minded states. When brought into hospitality and wellness services, this phenomenal light play, assembled with upcycled glass bottles, gives peaceful states of truly being, without haste.

Tham Yu-Xuan Sarah



Futuring transit: 3.3 m³ x 18 hrs

Instructor(s)

Patrick Chia

3.3 m³ is the volume of space taken up by a business class seat in a typical aircraft. 18 hours is the duration of a direct flight from Singapore to New York.

In this platform, students were tasked to explore and design new meaningful experiences base on the concept of space and time while attempting to expound on some of question such as; what does it mean to be in this volume over this amount of time? Is it just 5 movies and 3 meals services? Or could it be a life changing experience? What is luxury?



↑ **TAIR - The Future of Flight.**

Individuals with locomotor disabilities require transportation aids such as wheelchairs to move around. Yet, not all modern facilities are mobile friendly.

TAIR aims to bring that level of inclusivity to air travel with the emerging exoskeleton technologies that enable the disabled with more comfort, accessible and convenient means of movement.

Aderes Chua & Donaven Tan

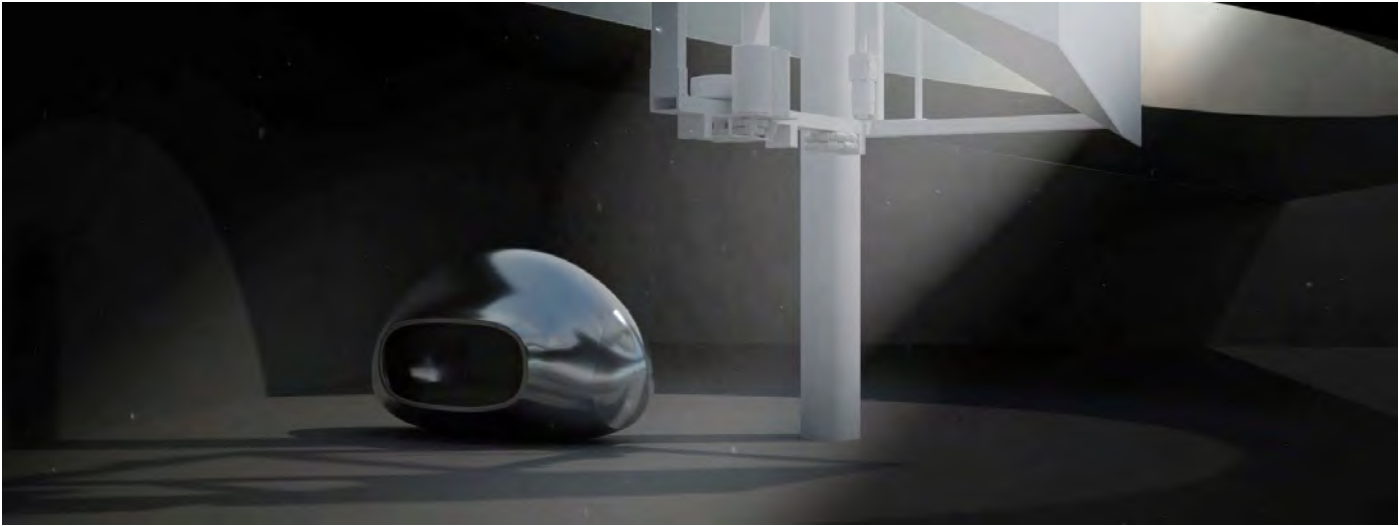


↑ **Sanctuary**

Sanctuary is a sky hotel concept that provides the comfort of an electromagnetic (EM) detox, away from the increasingly tech-dense ground environments.

As it drifts through clouds and nature, passengers are offered a meditative space to relax as their journey is being charted.

Edwind Tan Yi Fong & Lewis Ten Yi An



↑ **Ascension**

Ascension is an 18 hour journey to space where its transit is more than just about the journey or destination.

Through this surreal yet tranquil experience, it serves as a sanctuary for the soul and an answer to cancer - offering individuals a second chance to live again despite being diagnosed with a deadly disease.

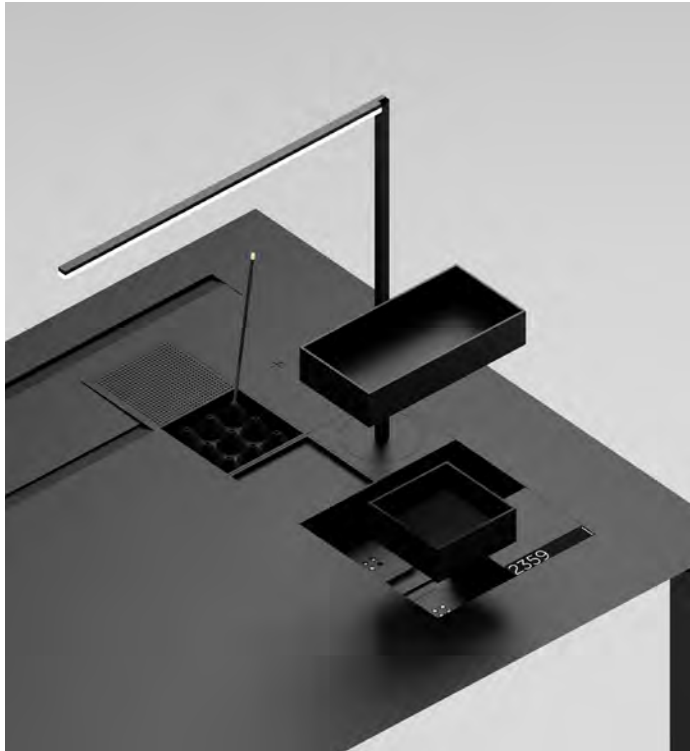
Shaina Kang & Tan Cun Jia

Product design+

Instructor(s)

Song Kee Hong

Product Design+ is a studio to create unique products with well-integrated touch points to enhance user experience. Module consists of form and UX development workshops with multiple peer driven critique sessions to foster independent learning. Students are guided to design around a cross-disciplinary ecosystem of user touchpoints to address key issues driven by market, usability, aesthetics and technical constraints.



Rune

Rune, a modular smart table, sets the new standard of productivity in a hybrid working environment. Accompanying table modules with its unique features fits seamlessly into Runes table socket, allowing a harmonious system and experience.

Mok Zijie



VOLT | EV Charging System

Volt is a next-generation autonomous EV charging system designed to bring high-efficiency smart charging to urban cities. Using existing car park infrastructure, Volt utilizes a rail-mounted solution to ease the current space-time constraints of EV charging in a multi-story or underground car park, thus leveling out energy usage required ultimately reducing charger installation and grid infrastructure upgrade costs.

Isaac Lim Yi Jie



Airgate

Airgate is a comprehensive crowd control system that reimagines the future of rapid mass health screening with radio-frequency identification, facial recognition, a diagnostic breathalyser, and an AI-empowered crowd visualisation software.

Tan Ying Lin Valeska

Science of secondary

Instructor(s)

Tze Lee

"Science of Secondary" is a dive into what makes good secondary research and different ways to structure approach to frame challenges, organise and synthesise data in a way that uncovers opportunities for design.



↑ The next evolution of punk health

My research delved into Punk Health, where youths offset unhealthy behaviours by consuming healthful products. Based on observations from the trend, I uncovered a design opportunity for L'Oréal - to build a framework around the characteristics of Punk Health, that facilitates the transition from punk health to a truly healthy lifestyle.

Zhang Bo Ya Grace



↑ Addressing male skincare stigma in India

While the male skincare market in India carries immense potential, brands attempting to penetrate this market have faced difficulty due to existing stigma. This research aims to uncover the reasons behind the stigma and propose a design direction for a male skincare line that breaks conventional feminine associations.

Ho Yi Jing



↑ Finding the value of community engagement in waiting times

Through an analysis of digital health and community engagement trends, this project aims to look at how we can enhance the value of waiting times at the National University Hospital in 2027.

Choo Yuan Jie



The simplicity and complexity of UI: designing a complementary UX

Instructor(s)

R. Brian Stone

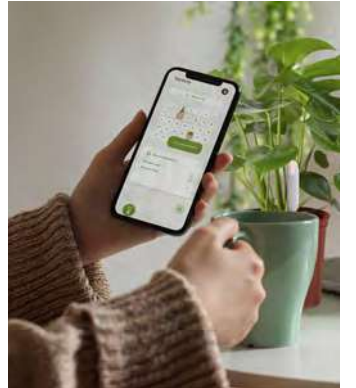
Students examined the distinctions between UX Design, Interaction Design, and UI Design, while examining the appropriateness of certain interaction models and product form factors. These form factors may be realized through television, desktop, tablet, or wearable applications and consider how each manages information in a continuum of complexity to simplicity. Students then designed a goal centric system that includes two complementary product interfaces, one dealing with the simplicity of tasks and the other, complexity.



Rooma

Rooma is an interior-planning system that assists homeowners in planning and curating their homes through accurate and customisable representations of their space on mobile and desktop interfaces. By utilising range sensors and automated product detection, users are able to plan, decide, and purchase items for their home with confidence.

Cindy Evangeline



Verdure

With different plants having different needs in Singapore's ever-changing weather, it becomes difficult for plant parents to keep up with their individual plant cares. Hence, a system for novice plant-parents that enables them to simplify and streamline their plant care process. Verdure is a system consisting of a sensor and a mobile app.

Wu Junyi



SYN

SYN is a system created for the dispatcher and responders to work together effectively. The interface was designed with simplicity and clarity in mind to prevent anxiety and fear from users.

SYN is a multimodality solution that has visual and audio aid capabilities, allowing the user to communicate in their most comfortable way. It is able to identify keywords from the conversation and recommend the next steps for the users to take. The user flow is purposefully kept simple so that the user can reach their desired action without friction.

Ng Xian En David

How to create colour

Instructor(s)

Tiffany Loy

Colour and material are inseparable. How can we use colour to reinvigorate common, or even waste materials? Colour is one of the first few things we notice when we look at any object, yet compared to form and function, colour is a relatively less explored parameter amongst industrial designers. Students in this group have explored colour and materiality, and found ways to present beauty in various materials, through their own lenses.



SKIN

Skin is an exploration of colours through natural skins such as garlic & onion husks. Through carefully layering and bonding the husks, we are able to create a paper-like material. Each and every skin brings beauty in different ways, through its translucency, colours and texture, there are endless possibilities of how one can create colours.

Claudia Goh Chen Shuane



Kintsukuroi

The project explores the potential in the detrimental process of corrosion, finding beauty in broken things, similar to its title "Kintsukuroi". The work consists of two foam tables utilising acetone based spray paint to create different variations of texture and vibrant colour combinations, albeit using the same corrosive spray method.

Lee De Wei



Coir

Coir explores the capabilities of coco pith and fibers extracted from coconut husks, as a medium to compose complex colors. Through a series of separation, dying and reconstitution processes, Coir is developed into a sustainable and lightweight material, with a diverse palette of unique colors and patterns.

Rachel Tan Yu Jie

The future of retail today

Instructor(s)

Sixiu Tan

In this platform, we re-imagine the act of shopping and explore ways in where a retail shop experience can be fun and memorable. The student first identify a shop of interest and analyses the business, he/she will conceptualize a unique customer journey that aim to increase product desirability and customer satisfaction. The touchpoints should include an online/digital component. Through the design process, the student gains key retail and consumer trend insights and technical understanding of interior, spatial design.



House of Chuckles

Boardgame Cafe is a place where people come together to have fun. But... placing your order is mundane, choosing the right game is stressful, dices falling off the table, and condensation from drinks disrupt the playing experience. At the house of chuckles, these pain points are reimagined into playful affairs.

Cherie Phua



GoFishy

GoFishy is an aquarium store which aims to revolutionise customer experience in the fish retail business. It encompasses an enjoyable viewing experience, providing educational value, enabling joyful fishing, and overall creating a memorable experience of purchasing their pets.

Rain Tay Xin Yu



Death is just part of the journey of dying

Instructor(s)

Alistair James Norris

The journey of death is expansive, from intrusive thoughts of the potential future of loss of a male child after receiving their National Service letter straight after their birth to celebrating ancestral family trees that date back hundreds if not thousands of years. What if we explored the often overlooked and underserved moments across this journey of death?



↑ Heirlooms

People tend to pass on items their loved's ones will cherish after they pass on but they're often hidden amongst the noise of things to be sorted out. Heirlooms is a kit to guide the bereaved through the sorting, resulting in a precious keepsake to remember their loved one by.

Seah Kwee Suan Celeste



Unspoken Exchange of Eulogy

Designed to bring the appreciation of friendships and social circles into the customs of death, Unspoken Exchange of Eulogy allows family members space to grief yet at the same time learn information about the deceased's friends that will help in the process of sorting through sentimental possessions.

Wong Eng Geng



ReinCarnation – Eternalising a fleeting journey of motherhood

ReinCarnation hopes to eternalise a brief journey of motherhood and redefine a lifetime of Mother's Day for mothers who have experienced infancy loss. This is envisioned through meaningful preservation and repurposing of the breast milk, such that mothers, like their child, can begin a new life with renewed purpose, even after their private encounter with death.

Ziling Loo

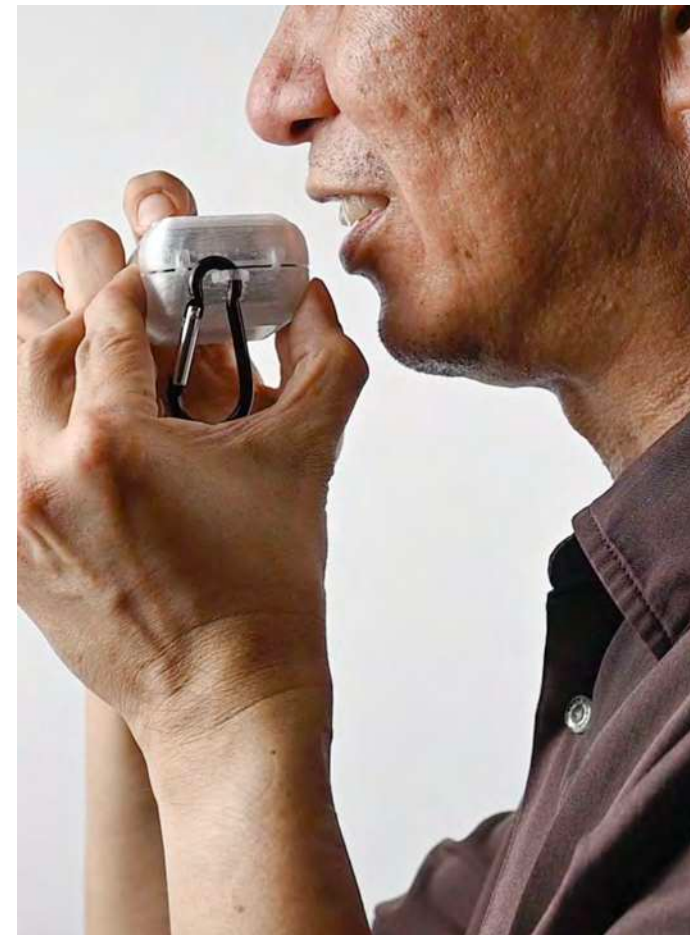
Death is just part of the journey of dying (cont.)



Read me when you are ready

"Read me when you are ready" is a series of postcards that act as a time capsule for parents to preserve their intangible stories for their children. Parents can reflect upon their life experiences which will be preserved for their children to refer to when they are older.

Chelsea Angelina



A message for you...

Designed to allow sentiment to be appreciated by people of all financial backgrounds, this keepsake lets the giver record a personalized voice message about an object they intend to pass down, allowing the receiver to retain the sentiment from their loved ones, even in the absence of the physical object.

Nicole Tan Mu En



Experience design - creating excitement

Instructor(s)

Tomomi Sayuda

Experience design is a form of design that introduces enjoyable elements to daily activities. Good experience design comes from a mixture of your imagination and tangible past experiences. In this platform, we will keep asking the question to participants, "Does your project bring new excitement to its users or audience?"



Instrumental Cleanliness

Instrumental Cleanliness hopes to bridge the experiential gap between personal hygiene and community hygiene. Mundane actions, such as wiping down surfaces, is made fun and playful through the incorporation of music and sound into common cleaning instruments like tissue and spray bottles.

Alexandra Arguelles



Interactive Solo Dining

Interactive Solo Dining combines the unpleasant experience of dining alone with the wonderful experience of travelling. The use of interactive table projections provides visual stimuli to encourage people to feel comfortable dining alone while being immersed in a different country.

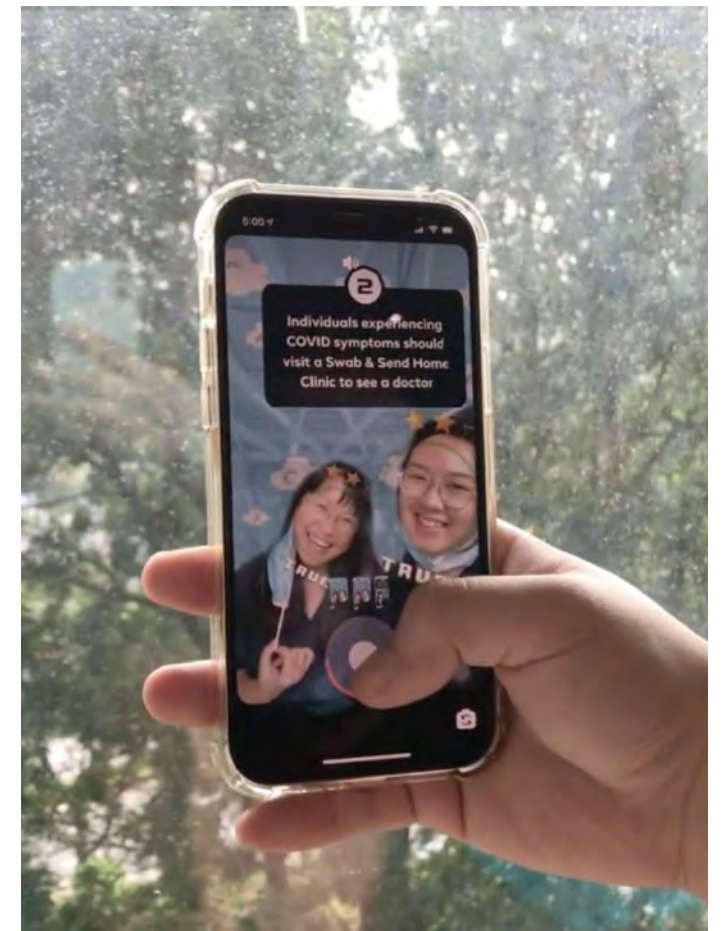
Canice Ng



The Boring News

A 8-bit gamified filter that utilises augmented reality technology to captivate young adults to learn about important news topics around them. As filters can be reshared amongst friends on social media, it is able to spread awareness and promote meaningful discussions amongst the community of young adults.

Prasanth Kumaar



Interaction and sensing

Instructor(s)

Yen Ching-Chiuan,
Liu Xin,
Han Bo

This platform designs and develops an application using a triboelectric nanogenerator (TENG). TENG is a type of technology that converts friction into electricity. The triboelectric effect is ubiquitous in our everyday lives and results from two different materials coming into contact, such as a static shock, a kind of triboelectricity. Based on its unique nature, the development of self-powered active sensors enabled by TENGs is revolutionary compared to externally powered passive sensors. In this platform, we explored the uniqueness of TENG to see how to apply the technology to create a new type of sensor based on human motion to develop new applications.



The Clean Bear

The Clean Bear is an interactive children's book that demonstrates how triboelectric nanogenerators (TENG) can enhance a child's learning and sensory experience. Physical motions such as brushing and flossing can be translated into light and sound feedback, which provides sensory cues for kids to learn good hygiene habits while training their motor skills.

Gabriella Edith Tan Rui



Cattery

Powered by triboelectric sensors, Cattery is made to be easily assembled with the use of basic electronic components that are housed inside its body, serving as a diffuser and lamp that changes colour, dims, and brightens by interacting with simple, customisable touch sensors that activates when the silicone lamp cover touches its metallic contact points.

Tan Zhi Qi Vivien



Building materials – explorations and studies

Instructor(s)

Grace Tan

This platform attempts to investigate the materiality of some common building materials. Guided by the material properties, the students started exploring and developing various ways of working with their chosen material. Using the data and know-hows acquired from their hands-on investigations, the students worked towards a final product that possessed the essence of the material and the nuances of the making process.



↑ Cementics

Cementics is a series of receptacles that challenges the conventional semantics of cement through an unexpected soft quality given to it by its fabrication process, piping.

Lee De Wei & Ng Keng Wei



Stone of Today

The stone of today is a system that provides an opportunity to repurpose stone wastes in the form of dust & debris, into new building materials. It aims to encapsulate the ideals of this Anthropocene age, incorporating sustainable methods and use of technology to create a stone representing our times.

Rachel Tan Yu Jie & Wina Nashita Rakana Adisetya



Anti-Crown

The 'Anti-Crown' is a contradiction. It serves as a symbol of solidarity in defiance of a self-proclaimed king, while challenging the perception of its main material: cement. This industrial material was pushed to become thin, light and precious. Through this process, the material became the mould.

Mathieu Charles Petot, Ria Arinah Bte Muhamad Redza & Teh Wen Jan

Future of retail

Instructor(s)

Sixiu Tan

In this exercise, we want to re-imagine the act of shopping and explore how a product or a service can engage with people in new and more meaningful ways. We will also examine global and local trends that impact our behaviors as consumers.

The student will first identify a product/service of interest, he/she will conceptualize a unique customer journey that aims to increase the desirability of the product and customer satisfaction, in a shop or home environment. The experience should include an online/digital component.



↑ CYCLEPULSE | Million tracks in a heartbeat

Extreme cyclists need capable bikes to excel in high performance sports, such as mountain trails and endurance races. To find the winning bike is no easy feat, as bicycle stores today cannot bring the experience of the challenging circuits and rough terrains into the constraints of four walls.

Donaven Tan Wei Xiang



Pawsitive | Therapy with Pets

Traditional therapy sessions come with a ton of barriers, making it difficult for people to seek help. Pawsitive aims to shape the future of therapy by introducing pets, to create a comfortable and engaging environment for therapy to be effective.

Cherie Phua



COLLECTIVE | Pioneering the new frontier of drink slinging innovation

COLLECTIVE hopes to spur cocktail explorations in a more wallet friendly way, perfect for youths and people who are new to the cocktail scene. Collaborating with popular mixologists, customers can order exclusive ready-made drinks via the COLLECTIVE app, for a less daunting introduction to the world of cocktails.

Merkayla Wong

Migrant worker dorms: designing for long-distance fathers, husbands & sons

Instructor(s)

Alistair James Norris

Migrant workers are often only designed for through two lenses; the worker and the resident. What if we designed for them based on their own identities, not the ones we assign them?



BE-loved

In the absence of physical interactions, migrant workers struggle to meet the expectations of their spouses, potentially leading to confrontations.

BE-loved employs haptics as a means of communication for migrant workers to provide continuous assurance to their wives, allowing these migrant workers to focus on their careers.

Kwang Yu Hang & Nazurah Binte Mohd Rohayat



Ment2

Ment2 is a growth-oriented platform that encourages mentor-mentee bonds within a dorm. Through facilitating migrant workers' growth journeys from start to finish, Ment2 cultivates a culture of mutual learning, and an environment where ambitions and skills flourish.

Alex Arguelles & Serene Tan



Tinycade

Platform Leader

Dr. Clement Zheng

Collaborator

VIVITA Singapore

In this platform, students were challenged to redefine the boundaries of the magic circle commonly associated with video games; and to develop projects that facilitate playful and tangible experiences for a specific audience in mind. Students built DIY systems that facilitated tangible play experiences. These experiences are powered by everyday mobile devices, leveraging onboard sensors and cameras for interaction sensing and computer vision.

This platform was conducted in collaboration with VIVITA Singapore. Throughout the semester, we had the privilege of visiting their space (VIVISTOP Orchard) and students got to deploy and discuss their prototypes with VIVITA members.



↑ **Aru-scan**

A scanner system that allows parents to build interactive activities for their children using a smartphone and scannable markers. Assign the unique Ar-uco marker stickers with different values and stick them on objects around the house. Build all sorts of point-and-scan experiences for your child for their education and enjoyment!

Emily Zhou, Joseph Liew & Tanya Verma



↑ **Leapfrog**

Leapfrog: A DIY arcade kit that functions as both a diorama display piece and a mobile puzzle game. Leapfrog leverages on the accessibility of DIY to blend the physical and the virtual into a cohesive experience, turning papercrafts into game controllers.

Ong Jingheng Travis, Lim Zhi Stacy & Allen Ding



↑ **Cardboard and Dungeons**

An immersive multiplayer game that brings back the imagination of young kids, fostering teamwork among them to create memorable shared experiences - all while striving to be as accessible as possible.

Srikesh Sundaresan, Aileen Ooi Ai Lin & Mars (Madison) Lovelace

Incidentally social - design thinking for future spaces

Instructor(s)

JieYu Yong

Collaborator

Marine Parade Community
Care Hub (MPCCH),
Surbana Jurong

This platform uses a design thinking process to derive human centered starting points for architecture and urban design. Such projects exist on a "pre-design" stage, where research insights, human stories and design ideas help guide and define spaces that are meant to be built.



Caregiver Clubhouse

In collaboration with WeCare@MarineParade, we designed a clubhouse as a respite space for low-income caregivers under the caregiver support network. The space allows caregivers to shed their daily burdens temporarily, and connect with other caregivers for support while feeling assured that their care recipients are well taken care of.

Cherie Phua, Canice Ng & Grace Zhang



The Montfortcare Treehouse

In collaboration with MontfortCare in Marine Parade, MontfortCare Treehouse is designed to be an approachable space that focuses on families, encouraging kinship, while challenging the perceptions of social services for better outreach upstream. This design is a first take at applying principles from research on upstream outreach to parents.

Donaven Tan & Low Kai Yi



Redesigning Deaf Employment

Through this project, we aimed to design a space that seamlessly integrates persons with disabilities through employment without compromising Don Don Donki's profitability. We focused on redesigning employment of the deaf through designing systems of support to facilitate communication with other hearing employees and customers through spatial redesign and technology.

Lim Si Yi & Leong Jo Yie

Beyond mere objects

Instructor(s)

Grace Tan

We are surrounded by design objects that appear rather odd or radical that do not conform to the accepted norm or their 'prescribed' utilitarian functions. Such designs, no longer existing as mere functional objects, create new ways of engagements and practices. As we look within ourselves and our society, how do we approach design in this changing world? How do we bring value and meaning to the objects in our daily lives?



Interscape

Interscape connects the world of humans and betta fish. The tools created would allow both the observer and the fish to interact directly, providing an intimate experience for the two singular entities and transforming the betta fish into something more than just a pet.

Siew E Ian



Kasut Lapis

Translated from Baba Malay to 'Beaded in Layers', Kasut Lapis aims to expose Peranakan beadwork to everyday people in the form of ambient lighting. Using light refraction and layers to create distortion, it adapts the craft to today's times and environments.

Aileen Ooi Ai Lin



Designanalysis

Instructor(s)

Christophe Gaubert,
Poh Yun Ru,
Cheng Chen

This platform is the opportunity for students to elaborate and define their style as a designer, and to apply it to a collection of products. Based on a methodic analysis of their personal universe, the students have to settle the principles of a design language, then to apply it to a very personal product involving a high level of technical constraints: a camera.



Belle

Belle's form stems from principles of nature, organic yet structured. The layered gradient covers encapsulate femininity and mystery, concealing and revealing the technology within. Through double exposure, the camera captures the sensitivity of the user when interacting with their surroundings.

Kalinda Chen



Kairos

This camera absorbs the frailty of permanence and the unstopping nature of time by capturing all dimensions of a moment. The captured sequence allows the viewer to rediscover, cherish, and reflect upon the context of each moment as unique individual universes.

Kent Limanza



Onsight

Onsight is a camera that acts as an extension of the body, with its purpose to capture unimaginable panorama pictures that separate users from physical reality. It will help climbers go beyond their limits, forming a detachment from the world.

Kwang Yu Hang

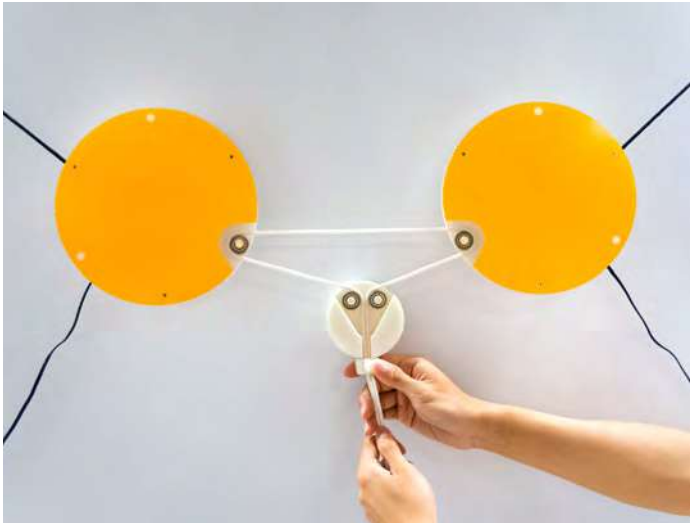


Making links

Platform Leader

Tiffany Loy

Every point of connection between materials is an opportunity to design a link, an intersection, a transition. The students in this platform have explored the idea of a link through different lenses. Some have created novel typologies of joints, while others adapted existing systems to new applications.



↑ Nexus Link System

The Nexus link system is capable of multiple configurations, simply by varying the position of anchor and pivot points to control how the introduction of tension by a singular motion can result in varying form transformations. A wall light has been designed with transformability through a singular pulling motion.

Luke Goh

→ Bobine

Bobine is a whimsical lamp inspired and constructed from a multi-axial system consisting of 2 coils strategically intersected to form an adjustable, rigid yet flexible structure. This structure affords 360° rotation both vertically and horizontally, and affords translation along the horizontal axis.

Chiw Suan Hui Clair



→ Blox

An exploration of how Jacob ladder links between geometric forms allow for fluid interaction and transformation. The combination of angular and round forms allows a controlled, yet fluid movement. When strategically applied, this link system lets the object function as a transforming furniture piece, with room to discover more compositions.

Gabriella Edith Tan Rui

Meta matters

Instructor(s)

Olivia Lee

In the speculative design platform Meta Matters, students investigate the implications of Web3, the mass adoption of blockchain technology and mixed reality platforms. Extrapolating from the emerging technologies of today, students conceive of new products and services for a near-future in which the metaverse achieves mainstream adoption.

The results are impressively diverse and thought-provoking, as students pose wide-ranging critiques and responses to Web3-led disruption. These projects range from eco-friendly NFT (non-fungible token) marketplaces to virtual avatars that evolve with good online behaviour, highlighting the merits of virtual commuting and many more.



↑ The Blastzone

The Blastzone is a metaverse made by Redbull and Epic Game. It introduces a new sport inspired by mountain biking that overtakes the physical limits of our world by playing with gravity and magnetism. In this context, bike brands develop new riding objects like the Canyon XR Banner.

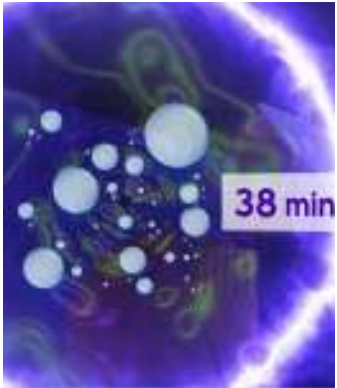
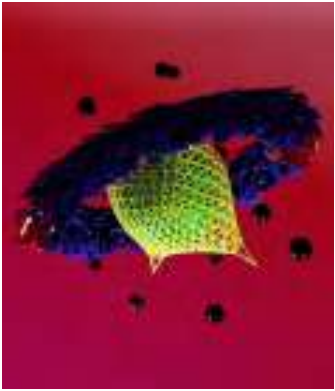
Mathieu Petot



1D3NT1T1E5

1D3NT1T1E5 is a living system that generates a unique wearable orb design based on your behavioral data in the metaverse. Through intricate calculations based on collected behaviors in the metaverse, 1D3NT1T1E5 can chart out the characteristics of a person. Behaviors will all add up to your character chart over time, leading to an organic way of growing your identity.

Nazurah Binte Mohd Rohayat



Transcendence

A transitional virtual commute for Big Tech employees to leave their work mindset in virtual offices and acclimatize into their personal time after work hours. The commuting experience utilizes the abilities of the digital world while retaining a touch of realism as calming spatial elements of physical commutes are incorporated.

Loh Chor Boon

2 pieces of ply

Instructor(s)

Patrick Chia

In this project, the students are tasked to create a piece of furniture with a constraint of using only 2 pieces of plywood. The main objective is to develop a piece of work (or a programme) which has a distinct identity and a strong sensibility while being appropriate for the defined context.



Clover

A bench designed for three, inspired by the organic form of a clover. Created with simple geometric shapes, pieced together with invisible joinery and minimal finishing, Clover embodies the simple yet elegant essence of plywood furniture. Its form is both modern and rustic, suited for a variety of different contexts.

Chen Yueting



notch

notch is a modular bench system defined by their colorful curved notches. Through versatile configurations, notch forms geometric islands that create spaces ideal for social gathering and momentary rest. Each bench can be intuitively connected at their curves to compose a variety of playful shapes.

Aye Phyu Thant Cherryl

Forms apparently, virtually?

Platform Leader

Ash Y.S. Yeo

With emergent roles of experience design of 6th Industrial Revolution, "idea-form" (process) will appear interchangeable. Eye-candy "form-styling" marketing aesthetics becomes substantially sustainable with ecological economics, in essence, less *(materials)* gives more *(experiences)*. Our roles, adept to morphologies, must reconceive foundational habits of 'Form-giving.' A curiosity-based, discursive, process-learning project, against 'trophy-outcomes' we ask: *"if forms were less objects, but constant subjects to flowing changes of time, space, movement, interface experiences, taste-values, then what might appear before us?"*



musuhada

Revulsion irks deeper than our physiological understanding of it. As warning signals, might it be used as salve? Musuhada (growing skin: Japanese) lets us grow face masks with concentrated Kombucha, piqued virtually with repulsive catharsis, as skincare experiences. This project questions ethical links amongst repulsion, youth and ugliness, at the edges of beauty.

Celeste Seah



AORA

The energy waves captured by the aurora borealis make nature immensely ethereal but virtual and apparent. With the morphology of "bubbles" and "cocoons", AORA actuates the experience of mental isolation and "living in a bubble". It is an installation napping pod that rejuvenates energy and creativity for places like offices or airports.

Goh Jia Hui



Dolour

How would pain, if bound by time, and matter, justly appear? Dolour elicits ephemeral pain as psyche complex within our synaesthetic senses, measured neither as good nor bad; a seeming contradiction. Light is transfigured as colour, material and air, transporting the admirer to apparent realms of passing time and pain impermanent.

Ken Fronda

T for T2

Instructor(s)

Hans Tan,
Stacey Yip

Sponsor:

Changi Airport Group
(Singapore)

In this project, students work with a variety of pre-selected materials that have been salvaged from the T2 worksite, which is undergoing major renovation. Students explored the physical capabilities of these materials, while developing a deeper contextual understanding for the stories and sensibilities that the materials hold. The salvaged materials are re-purposed into new functional objects, these could be a product or a small piece of furniture. Bearing in mind that the materials had a past life being part of the airport that delivered the Changi experience through different forms, students appropriated these contextual meanings into their design narrative.



This series of protective sleeves designed for laptops, tablets and phones are made from the baggage belts found at Changi Airport Terminal 2. The hybrid material of rubber and polymer composite makes it shock and water resistant, qualities that are perfect for protecting our delicate devices.

Chantel Loh



In the past, air travel passengers would often receive mini checker sets, but such a practice stopped when entertainment options got more varied. To reminiscence this nostalgic gift once ubiquitous in airports and on airplanes, teak cladding that once dressed the pillars of Terminal 2 was re-purposed into a portable game of checkers.

Rachel Tan



2022 Graduating Students

The design thesis provides students the opportunity to demonstrate their industrial design abilities through the execution of a major design project. The process ensures that students are competent in research - an integral part of the design process.

In their final year, students would learn to form and evaluate value judgement on design decisions that ensure design proposals meet with rationalised and functional criterion as well as less tangible qualities of aesthetic. This year's graduates have demonstrated competence in commercial design, service design, exploratory design and discursive design.



Aderes Chua Xing Ni

As an adventurous individual, Aderes views challenges as an opportunity to learn and improve. She strives to research on new challenges that have yet to be designed in the market that could enhance user's experience.



Portfolio



Tangibilizing Digital Payment for Children

This project is designed for children age 7-10 years old, to understand the values of financial literacy through digital payment. By making the intangible tangible, haptic interactions such as resistance and vibration are introduced which promotes behavioural change for children paying digitally. Instead of just a tap and go, children can learn to be responsible with their spendings and saving in digital payment.

Under the supervision of Dr. Lee Jung-Joo.



User Testing: Scenarios are carried out with the user at an actual location to feel different types of resistance. This allows her to experience paying for her own food using the product at the counter while customers queue behind her.



User Testing: An application is designed to support parents in guiding and educating their child from young, with a saving plan provided to help children set a daily, weekly or monthly target to save. Overall, the ecosystem builds quality engagement between the parent and child.



Services & Social Transformation



Ashlyn Wong

Ashlyn is a multidisciplinary designer based in Singapore. With a strong emphasis on human-centred design, she turns conceptual ideas into products and services that impact people and communities in meaningful ways.



Portfolio



AwfullyGood

AwfullyGood is a line of products made from rescued fruits and vegetables, set to launch in a supermarket. Rescued food are fruits and vegetables that are overripe, with blemishes, discoloured or are oddly shaped. The final product range includes dips, jams and juices which are freshly made in the supermarket. A second life is given to blemished food as it undergoes a transformative process before reaching the consumers. AwfullyGood highlights that blemished food can taste as good or even better through creative and tasteful recipes.

Under the supervision of Song Kee Hong.
In collaboration with FairPrice Singapore.



A set of product packaging was selected to be integrated with a mobile app to complete the brand experience. The packaging is designed with recyclable paper sleeves and reusable bottles, the corrugated cardboard used provides tactility to the paper sleeves.



The brand hopes to change the perception of blemished food through highlighting food's versatility as multiple stages of transformation can happen to basic ingredients.



Freshly made by an eco-conscious supermarket captain, the bottles are sealed after filling in the contents. The product range can be expanded to include seasonal offerings

Onboarding & gamification of app



Awareness on handling rescued food



Expiry date tracker & food transformations



Sharing & chat with community



Services & Social
Transformation



UI Screens of the features within the AwfullyGood app.

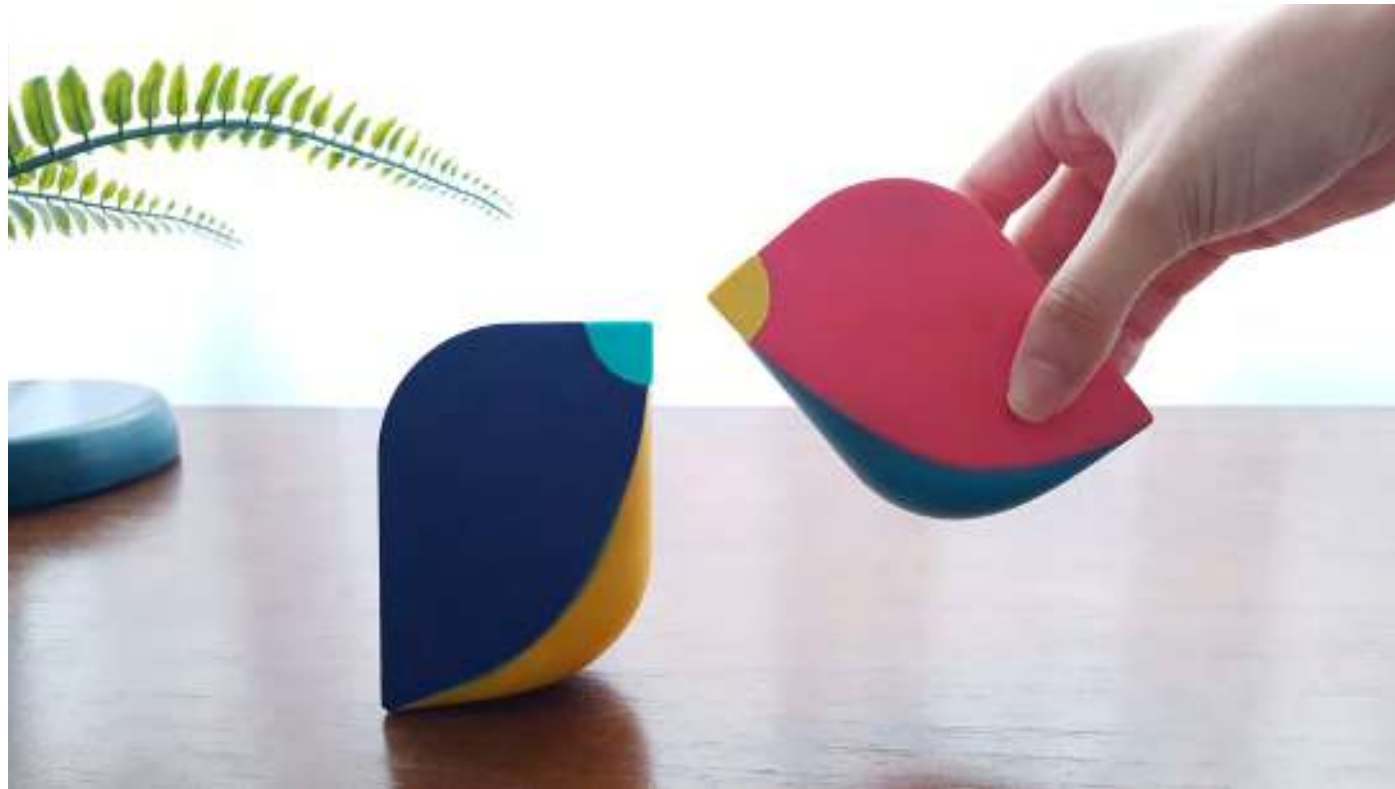


Brandon Ong Wei Sheng

"Make it simple and resonate with people" is Brandon's design philosophy. With an empathetic and human-centered view, he looks to create value in imbuing delight into meaningful experiences for people.



Portfolio



Wobbler

Wobbler is a reminder that nudges you forward with delightful chirping, that brings you closer in distance to where the task is at. Its name stems from the songbirds Warblers which varies their tunes, inspiring a randomised harmonious melody that avoids repetition and instils delight. Be it a pair of lovebirds or a single Wobbler, both serve to ease you into your daily routines through its pleasant interactions.

Under the supervision of R. Brian Stone.



Leveraging as an extension on Google Calendar, familiar navigation is made simple with contrasting elements that highlight reminders by Wobbler.



In contrast to the shrill of alarms, Wobbler amplifies its chirps at an exponential pace that eases you into a slow gradual wake. Its eye-catching wobble motion animates, as if it calls for your attention.



Innovation for
Industry

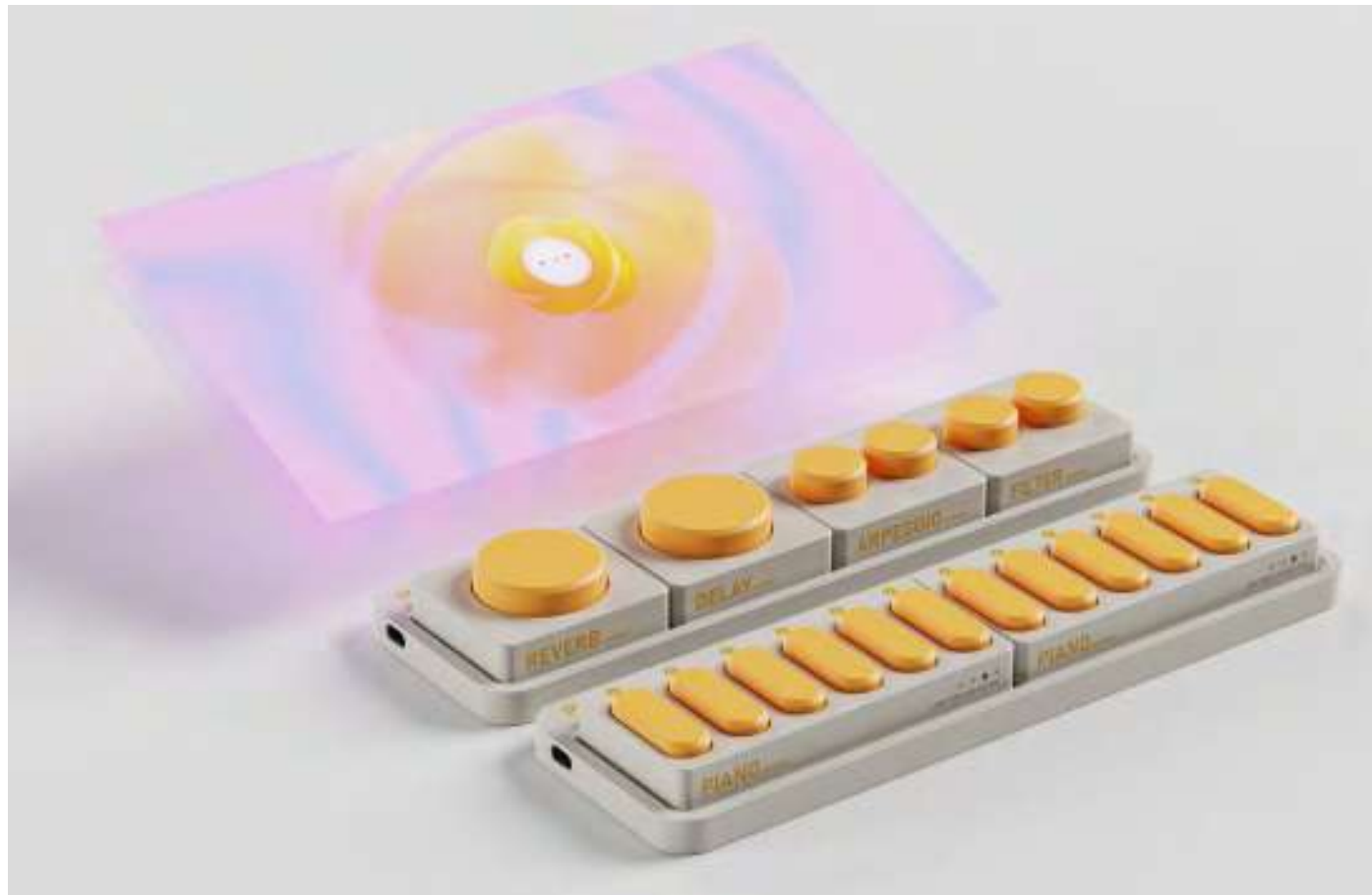


Cao Minh Huy

Minh finds joy in tinkering and making songs in his free time.



Portfolio



Musicblocs

Musicblocs is a series of modular MIDI instruments and controllers that show kids the basics of music making. Many kids find learning an instrument difficult, Musicblocs aims to bridge the gap in learning music by providing kids with an interactive way to create their very own tunes. Kids will be able to learn basic music theory, a sense of rhythm, and MIDI devices in an intuitive way, with the help of a cute visualizer companion.

Under the supervision of Song Kee Hong.



Iteration: Choosing appropriate MIDI parameters to control that is useful for kids in making their tunes. It needs to sound good no matter how they play it.



Endless permutations from choosing between different blocs.



Innovation for
Industry



Celeste Loh Wan Xuan

Celeste draws inspiration from product systems she interacts with in her daily life, intrigued by the way material informs form and function. In awe of the organic precision of nature, Celeste designs with a strong desire to reimagine and reshape manmade experiences.



Portfolio



The silicone pen

The silicone pen is a new way for children to enjoy 3D crafts, and experience the fascinating properties of mixing colours and materials, in this simple and fun kit. The process of silicone-making is streamlined, and the need for precision taken care of, through the use of water-soluble film. This kit leverages the versatile yet delicate properties of water-soluble materials and the intricate process of addition-curing silicone to create an opportunity for children to have messy fun in a clean way.

Under the supervision of Dr Yen Ching-Chiuan.



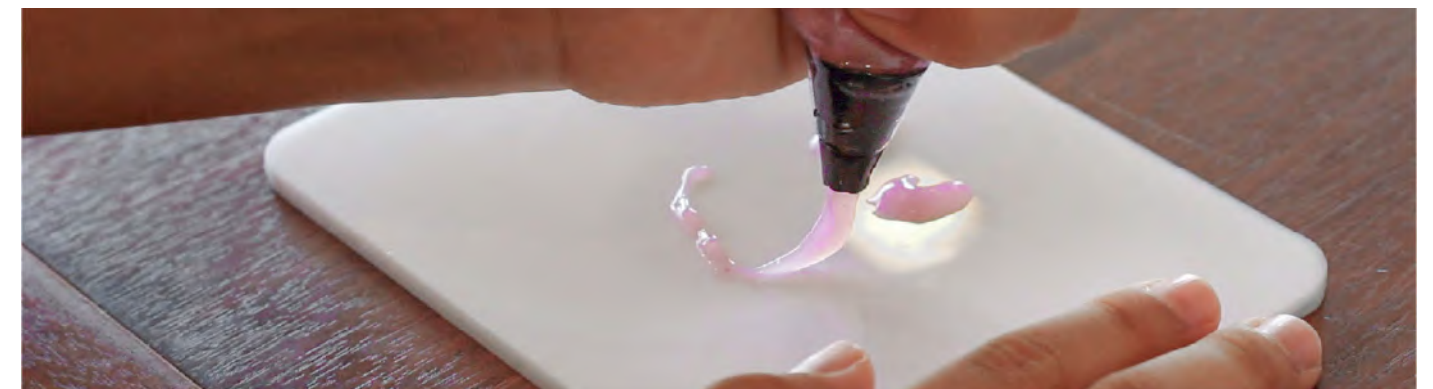
Two-part silicone is packaged in water-soluble film, distinguished by glossy and matte textures. Colours add another dimension to the play, and serve as a visual indicator for thorough mixing of the two parts.



Small water bubbles are used to dissolve the pouches and trigger the silicone-mixing process.



Through a fun "squishing" gesture, children are able to make their own silicone material.



With the cap removed, the silicone is ready for drawing, with endless possibilities!



Innovation for
Industry

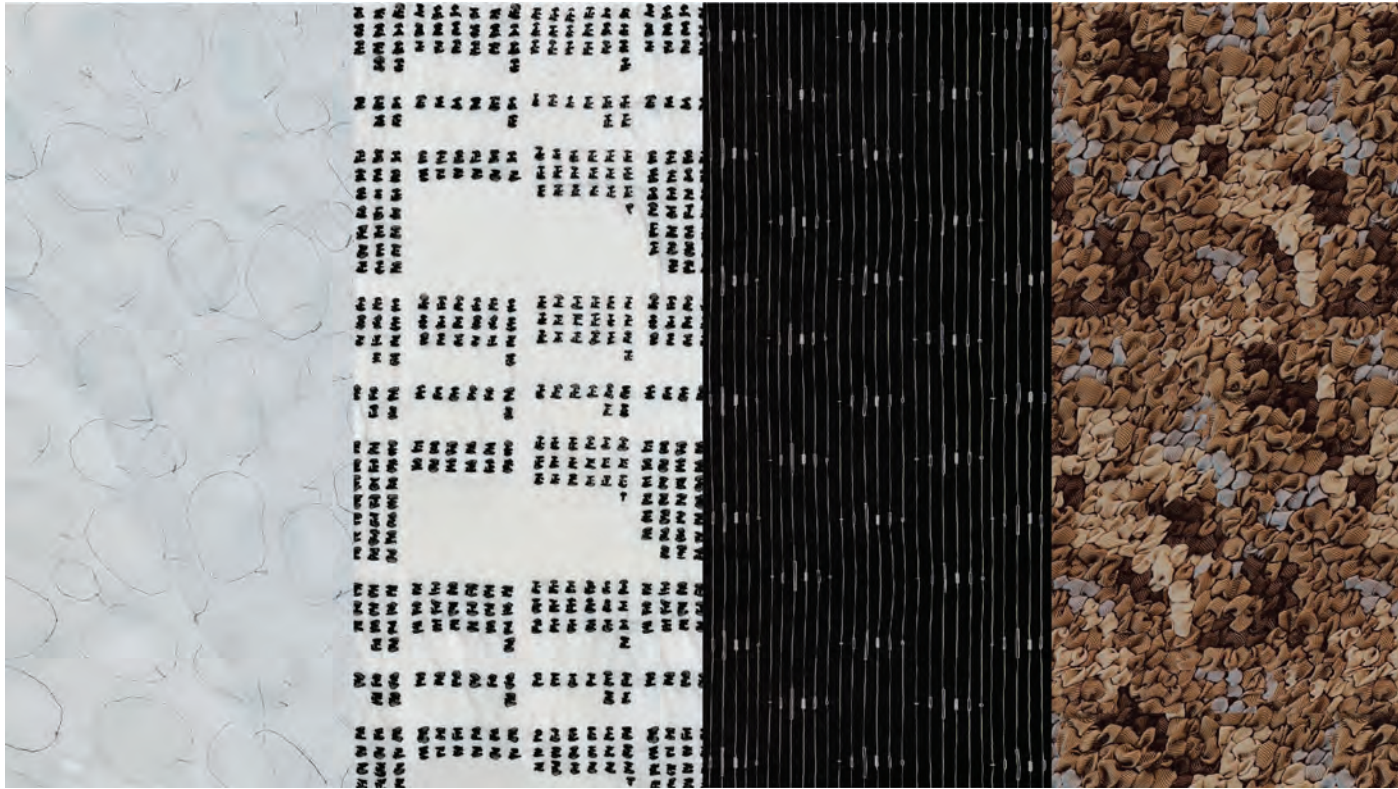


Charlotte Ho Ying

Since she was young, Charlotte would make the things she wished she had. Now, she makes the things she wishes the world would have. Itching to question norms and everyday phenomena, Charlotte tinkers with common associations that often lead to designs that spark reflection.



Portfolio



Txt.tiles

Txt.tiles is a series of patterned textiles inspired by data.

Inspired by embroidered motifs of the past, I sought to design patterns more relevant to today. Now, pinstripes outline wage disparities of textile workers, camouflage reveal data on plagiarism in the fashion industry, 正 (zhèng) characters keep score of clothing utilisation over the years, and bubbles contain information about our water footprint. Hand-embroidery supports data's non-uniformity, and fabric allows the cold, hard truths of the textile and fabric industry to be felt with a touch of humanity.

Under the supervision of Hans Tan.



Camouflage: The frequency of each colour corresponds to the categories of products disguised as original designs.

Pinstripes: Referencing candlestick charts, the length of the bars correspond to the difference in wages of textile workers.



Zheng: Every stroke accounts for a single time a new garment is worn. Similar to calligraphy, data is read from the right.

Bubbles: The size corresponds to the volume (in litres) required for common textile products.





Chin Kar Fai

Kar Fai's design approach is in the pursuit of meaning, relevance and creating delightful experiences. Design to him is a journey of discovering meaningful insights, exploring ideas & concepts to creating unexpected outcomes.



Portfolio



Loop System

The loop is a system of integrated lighting and sound modules designed with the intent to reduce friction and promote positive interaction between cyclists and those who they share space and path with. Loop system is designed with 2 core features, Lighting Mesh and Loop Ring, Lighting Mesh is enabled with lighting controls over every single led unit connected to the system. With addressed lighting based on its orientation on the bicycle, it gives a clear visual indication of bicycle orientation from all angles and also increases visual identification of the bicycle. The Loop Ring is an auditory and visual communication feature, with calibrated bell rings and lighting animations to effectively communicate intention to those around and to reduce misperception of negative intention and triggering negative emotions.

Under the supervision of Song Kee Hong.



Preemptive ring plays at 120 bpm at medium high pitch and urgent/alert ring plays at 168 bpm at medium pitch both with matching lighting. These sequences are calibrated to capture attention without coming across as aggressive, rude, annoying or stressful.



The core of the loop system is the loop handlebar, it is integrated with sensors, processors, and battery to control and power individual loop modules. With centralised control and power, the modules can be much more compact.



Modules are connected to the loop bar via module mount. Mounts are designed to attach modules securely on the bicycle and provide a reliable connection via build in locking mechanism.



Innovation for
Industry



Set up tests reveals that both rings are detectable from 15 meters away and the sounds are not unpleasant. Exposure test showed that 85% of subjects were reactive to the ring, had no visual displeasure and 10% of subjects gave positive feedback.



Chloe Chan

Chloe believes strongly in designing through empathy to facilitate and build connections. She sees the potential of design going beyond the aesthetics – creating interesting interactions between different elements of a product, and between the product and its users.



Portfolio



in-tune

in-tune is a device that plays and curates digital music based on how you want to feel. Inspired by the intrinsic and universal basic emotions, research and user tests were conducted to develop a physical universal language through materialisation. By giving shape to the intangible, the power of emotions was leveraged and applied to our interactions with digital music to build stronger connections. Through new interactions with tangible emotions, in-tune gives you the power to curate your music in a more meaningful way – to reconnect and truly be in tune with your emotions in the moment.

Under the supervision of Christophe Gaubert.



Contextual Use: With the emotion tokens, curate your music based on how you want to feel in any moment and discover the universe of digital music through the power of emotions.



Exploration: The emotion tokens hold the power to curation. Inspired by recognisable elements, they each represent and amplify an emotion through their unique form and colour.



Exploration: The interactive space serves as the platform for controlling music curation. Along with visual feedback, it invites and encourages the exploration of digital music.



Design Futures &
Critical Inquiry



Development: Through a guided unboxing experience, concise descriptive expressions of each token give users a prelude to the way the curated music can make them feel.



Darryl Leong Kar Chun

Darryl is a firm believer in taking the road less travelled. In a world often unkind to new ideas and creations, he welcomes them as an old friend, and takes every opportunity to break the status quo.



Portfolio



Public_Domain

Public_Domain explores the spaces in between the ephemeral and the concrete; an invisible but intimate narrative that ties us, as an individual, to the larger community we exist in. In this space, we rediscover the ways our stories influence this invisible chronical, and continue to build upon and develop the urban fabric within the public domain.

Under the supervision of R. Brian Stone.



[story_telling]: The app interface acts as the point of entry into both the reconstruction and exploration of the archived space.

It enables communities from these spaces to share their experiences through both visual and audio means, which then presents a collective narrative of the space.

Users may explore these narratives to gain an authentic insight into the many nuances of the space, and its people.



[socio_spatial]: An exploration into the relationship between tangible spaces and intangible stories, and the almost symbiotic processess that affect the various ways these aspects develop.

This relationship forms the basis of what we understand as culture, and reveals the many intricacies and complexities that come with it.



Services & Social
Transformation



Daryl Pong Yu Fan

Daryl loves imagining how to make the world better through design and pushing the boundaries of what we can do. As an industrial designer, Daryl believes that our job as designers is to use design to improve the world and bring joy to as many people as possible.' Not outstanding design, but better design.'



Portfolio



Directionary

Directionary is a route crowdsourcing platform which provides navigational information for walkable routes for the blind, created by the blind users themselves. Inspired by the existing methods that the blind learn how to travel around, which is O&M (Orientation & Mobility) Training. Recognising the opportunity in this design space, Directionary is designed with O&M Training in mind. It aims to improve and enhance how the blind in Singapore travel by empowering them to share, create and learn routes.

Under the supervision of Dr. Lee Jung-Joo.
In collaboration with Guide Dogs Singapore Ltd.



User Testing: Users got to search for a route where they tried navigating to its endpoint. The route simulates a typical path they might take from an office to a food centre.



User Testing: Through collaborating with the O&M Specialist, Directionary was intensively tested with users to ensure usability. Directionary significantly helped improve the learning of routes during O&M Training.



UI/UX: Users are empowered through the access to navigational information at the level of detail the blind need to travel about new places.



Services & Social
Transformation



UI/UX: Directionary enables blind users to browse for routes on a Map Library where they can create routes guided by a unique framework.





Feng Guozi, Beatrice

Drawn to discourse, Guozi's questioning nature enables her to turn controversial starting points into plausible design opportunities. In a turbulent world, she hopes her design can be the provocative jolt to get people to contemplate the important questions that come with progress and change, before they eventually arrive.



Portfolio



Should we keep pets?

Having reflected on my relationships with my five birds as a longtime pet owner, I came to the sobering realisation that I may have taken their existence for granted. This got me wondering, just because we own pets, does this mean we can manipulate their behaviours, bodies and emotions for our own consumption?

My objects of discourse are two rather unusual bird enclosures, which aims to surface some underlying things we assume about having a pet in rather exaggerated ways.

By highlighting the inequalities in our human and non-human relationship with our pets and the absurd expectations we hold them to, I want to catalyse a debate on whether we can assume these animals are ours to keep and 'use'.

Under the supervision of Donn Koh.



Explorations

I prototyped a bunch of crazy bird enclosures and invited my friends to interact with them. I wanted to see if this interaction could represent something about our human-pet relationships.



SAUNTER Stroller

Going on a stroll with your feathered friend can be a walk in the park. Lightweight and intuitive to use, this stroller lets you effortlessly bring your pet bird outside more often, so they can be closer to nature.



DAZZLE Enclosure

An all-encompassing handheld enclosure that minimises the needs of your pet bird, for your maximum viewing pleasure. Even at night, you can enjoy the beauty of your bird, until you fall asleep.



Design Futures &
Critical Inquiry



Gwen Pang Ying Qi

Gwen believes in questioning the norm and asking how we can do better. Through purposeful twists in her designs, she hopes they can offer a fresh perspective or bring about new ways of doing things.



Portfolio



Walking on Information

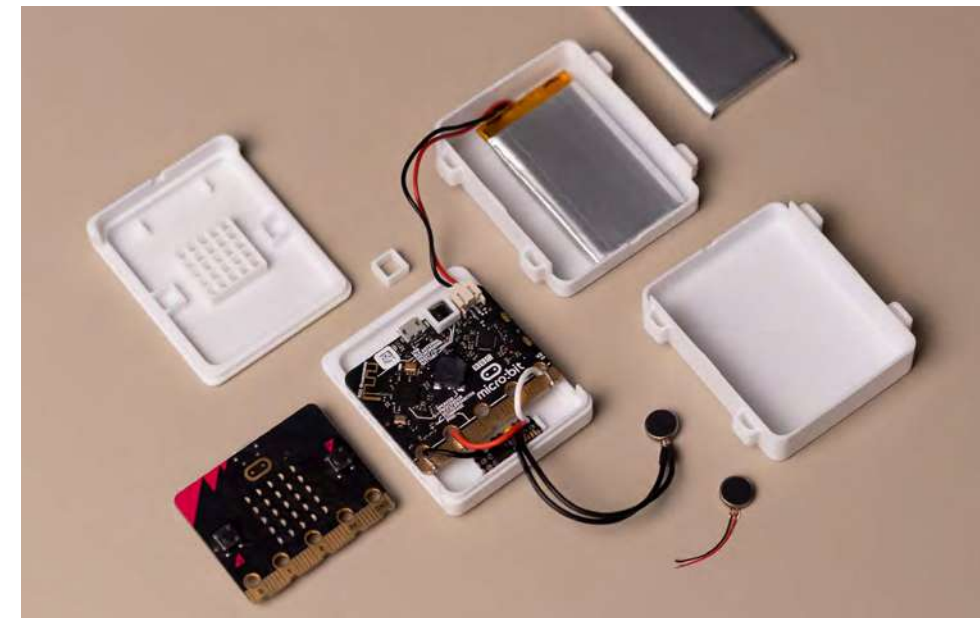
Walking on Information builds on Calm Technology to explore how we can communicate information subtly through touch. A device atop shoes, Feedback, was designed to transmit vibrations that vary with geolocation. According to the user's position and orientation relative to a selected point, recorded path, or drawn boundary, Feedback's vibration patterns vary. Thereby enabling users to walk upon a layer of information.

Under the supervision of Dr. Clement Zheng.



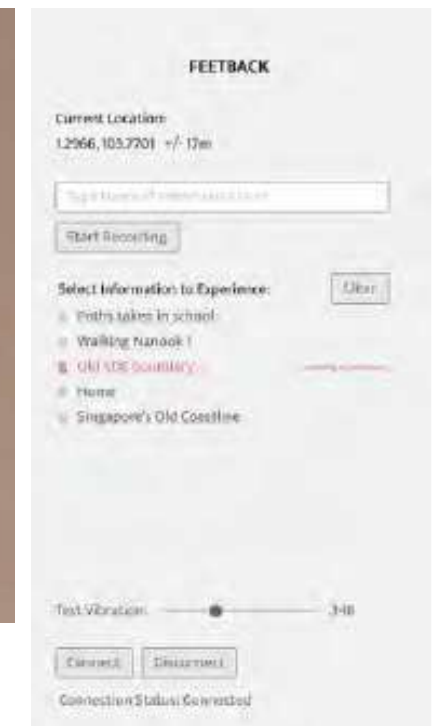
How it feels

An ambient vibration surrounding the user's forefoot is created by placing the vibration motor atop a shoe's toe box, using it as a medium for vibration.



How does it work

A tool was built to facilitate the logging and experiencing of the location based information. Feedback consists of a micro:bit that connects to a smartphone via Bluetooth to access this tool.



Design Futures &
Critical Inquiry



Huang Anqi

The possibilities for tomorrow are endless. With a curious mind and driven by the purpose to improve, Anqi believes in constant innovation and enhancing details to create the best experiences for tomorrow.



Portfolio



Death in a Digital Age

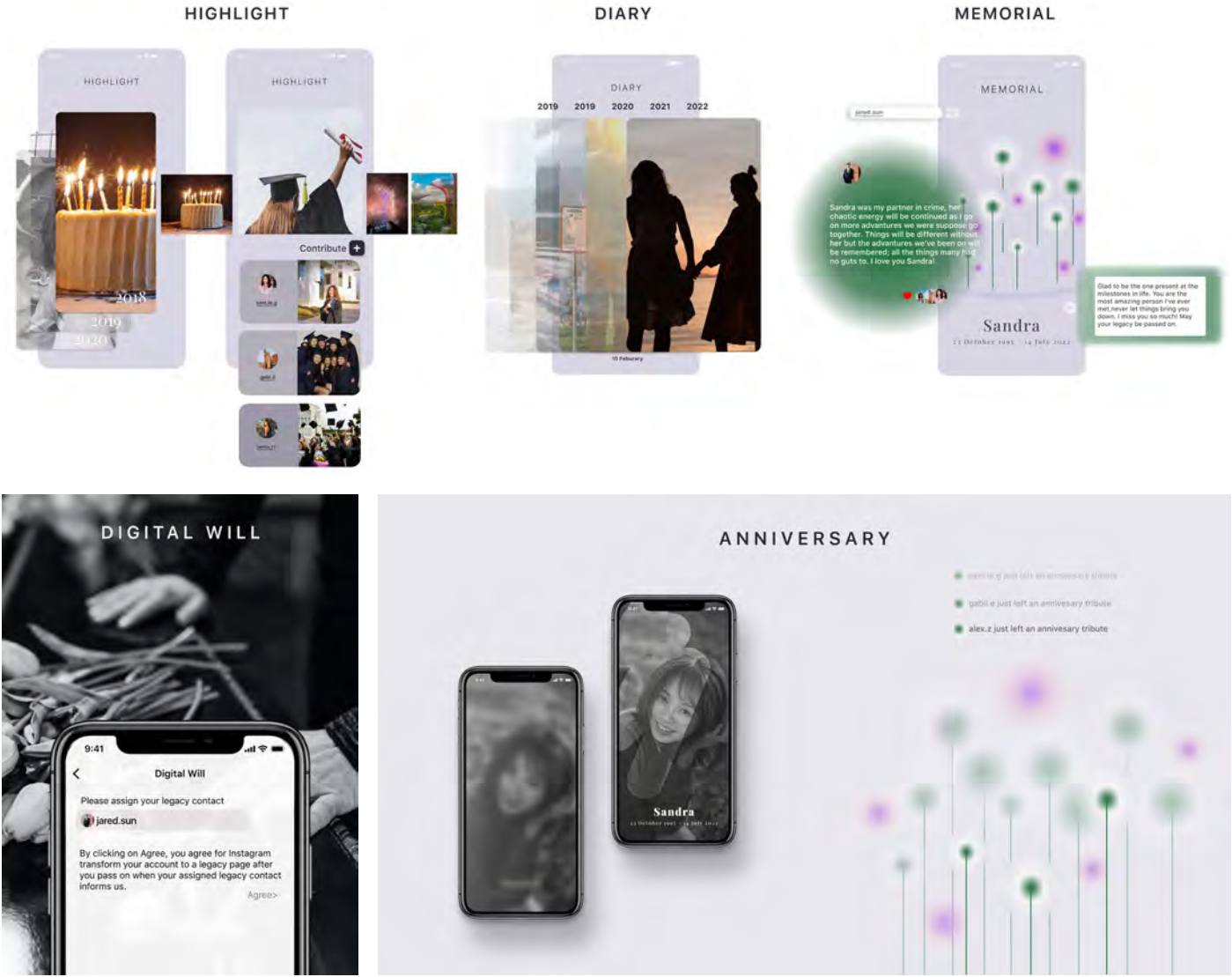
In a digital age we live in, our identity is both online and offline. Millennials today believe that their digital data is equally important as their physical assets. This plug-in allows for social media users to plan in advance how their digital assets will facilitate the grieving process for loved ones. Over time after the passing, data left behind by the deceased and the data contributed from loved ones illustrate the unique life journey which builds a legacy.

Under the supervision of Song Kee Hong.



The Experience

The main components of the plug-in: Highlight, Diary, Memorial. This system allows users to reminisce the time and memories with the deceased while preparing users to reflect and share the story they have with the deceased.



With user's permission, the plug-in will have access to the digital data.
Over time, the visuals will fade and blur out; the natural fading of memories.





Jia Hui Chua

Jia Hui is a designer that enjoys pushing the boundaries and believes that design can play a visionary role in pushing for better change in our society.



Portfolio



OUR SELF

Over one billion people use contraception. Yet, only 1/4 of them worldwide are men. This is because it is the norm to assume that preventing pregnancy is a woman's responsibility. I wanted to challenge these assumptions. Taking advantage of the latest development for both female and male hormonal contraceptives, I designed a range of alternative hormonal contraceptives that can provide monthly birth control to all genders within a minute.

OUR SELF is made up of three conceptual contraceptive products, for her, for them and for him. I wanted to tangibilize this novel contraceptive technology and use it as an opportunity to engage not only women, but all genders to redefine what contraception can mean to ourselves. Hence, by introducing alternative contraceptive methods, I want to inspire interest about the possible futures of contraception and to spark curiosity on what's next for our self.

Under the supervision of Christophe Gaubert.



Microneedle Contraceptive Technology: At the size of a bottle cap, the patch contains 100 microneedles and are made out of a biodegradable polymer. After one minute of application, the needles will embed themselves within the user's skin and slowly release small amounts of the formulation into the bloodstream, preventing pregnancy for up to a month.



← For Her

With microneedle technology, this contraceptive jewellery empowers women to feel attractive while simultaneously receiving their prescribed birth control. With the usage of gold and folding patterns and by weaving receiving contraceptive with the habit of wearing jewellery, it empowers women to feel more confident in taking control of their own reproductive destiny.



← For Them

The applicator leaves a mark on your partner's skin, resembling a playful and loving bite that you would give your significant other during intimate acts. This object provides an opportunity for partners to create a meaningful experience where everyone is actively involved in taking contraception. And perhaps including both parties in the process can potentially be the best way moving forward.



← For Him

To create an approachable design for men, I was inspired by the iconic symbol of a watch. Likewise, the microneedle capsule would attach itself to the bottom of this applicator, which could then be worn on the wrist just like a watch. With time on every digital screen, this contraceptive device is more than a watch, it provides men the power to take on the role of contraceptive responsibility.





John Marie Tan Hui Zhong

John finds inspiration through observing the behaviours that people have adopted, like the affordance of tissue packets to choke tables, recognising that these are the most authentic insights into our subconscious behaviour that makes good design unnoticeable.



Portfolio



Sensibly Delightful Feedback

Delightfulness and functionality are often seen as two opposite ends of a spectrum. The ideation framework that I have created facilitates the curation of sensibly delightful feedback in everyday objects that borders on becoming gimmicky, but provides just enough function not to, by using sensory feedback as an indicator that creates a delightful interaction whilst reassuring the user of the object's function. A measuring tape, screwdriver and bottle cap are results of this framework, highlighting the importance of considering users' emotions in the design process.

Under the supervision of Donn Koh.



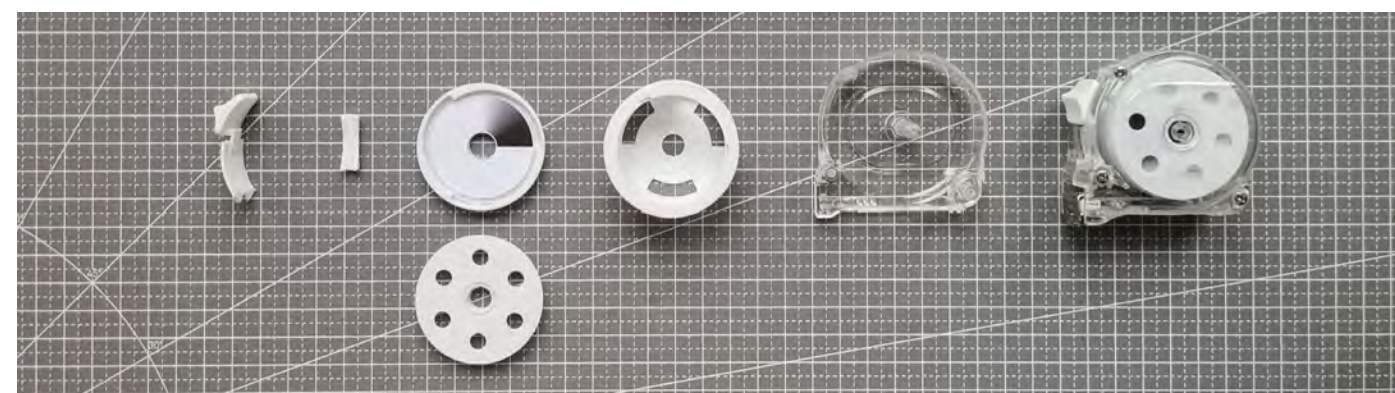
Measuring Tape: An analogue visual effect is created as the tape is extended. Clicking sounds created by the ratchet mechanism provide secondary feedback to gauge distance and create an unexpected twist to the visual effect when retracted.



Screw Driver: The handle slides up and down as it is twisted informing the user of which direction to turn to tighten a screw, especially useful when the screw is out of sight or at an awkward angle.



Bottle Cap: Silicone gradually presses against the surface of a bottle cap as it is screwed on, getting clearer as it is tightened, a full circle indicating that it is sealed tight.



Components of disassembled measuring tape.



Design Futures &
Critical Inquiry

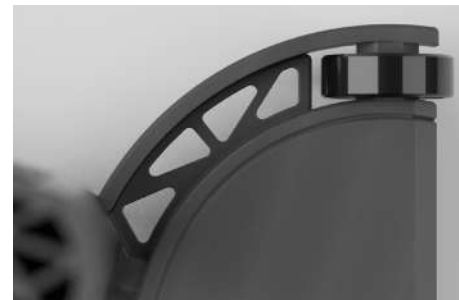


John Tay Jo Han

John enjoys designing complex objects with high aesthetic outcomes. With a newfound interest in manufacturing, he invents concise, implementable solutions to pressing real world problems.



Portfolio



Rehabit

Rehabit therapy equipment is designed for stroke patients seeking effective movement rehabilitation. Light, sturdy and easy-to-use, Rehabit turns tedious exercises into simple habits. Removing complexities and obstacles, Rehabit frees the patient to focus on what matters most - to relearn and to recover, the vital ability to move.

Discover each product in detail at: <https://rehabit.sg>

Under the supervision of Patrick Chia.
In collaboration with multiple therapy centres.



Patients only visit the therapist once a week. For the other 6 days, Rehabit is designed to be your personal therapist at home.



Each product guides you by the hand, to assist you in executing the movement correctly, safely and independently.



Designed around the 3D-Printing manufacturing process, each product can be fabricated to the specifications of each individual.



Innovation for
Industry

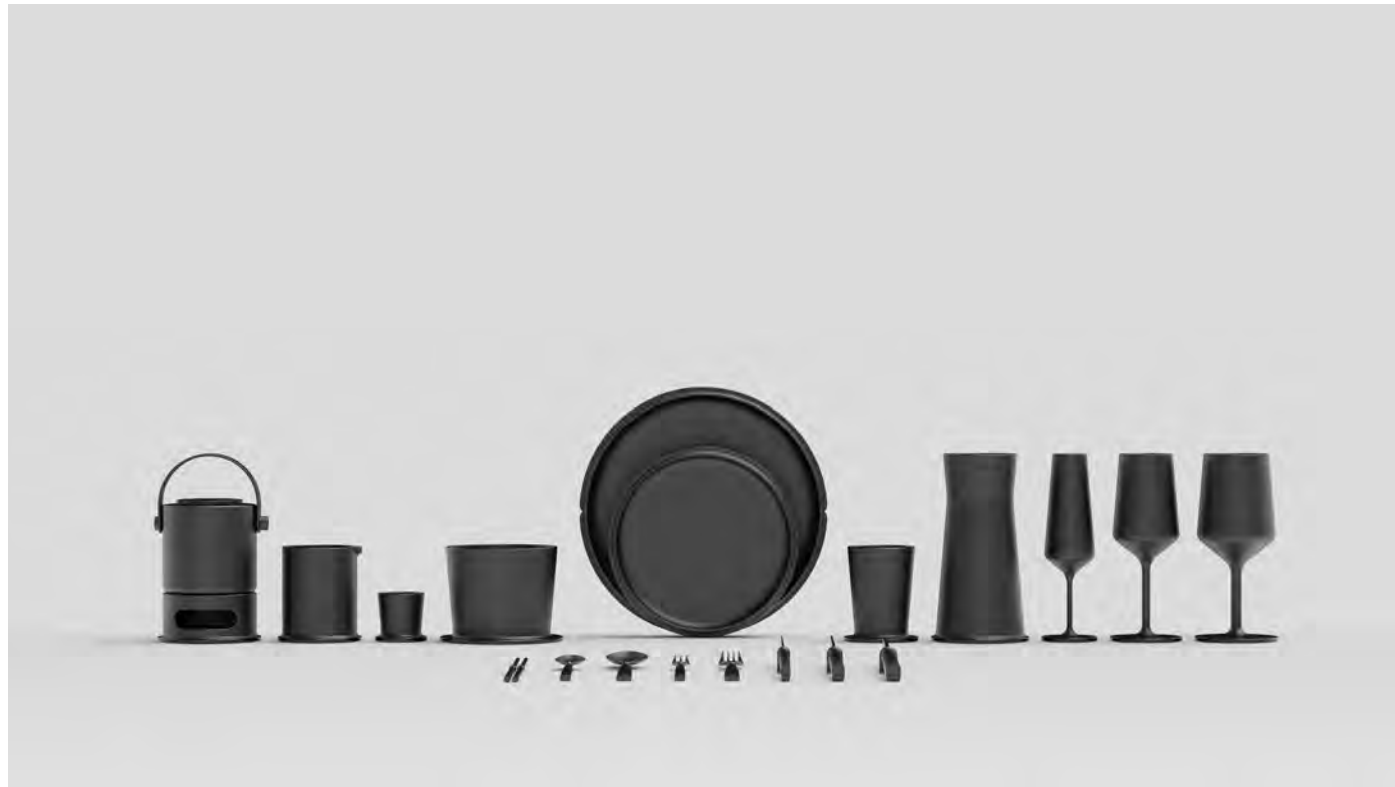


Karen Gan

An industrial designer with a background in communications, Karen tells stories through products, interfaces, and user experiences. Infused with subtleties – such as a familiar sound, a calm moment of reflection, or a small tug at the heart – her works tread along the intersection of design and the poetics of everyday life.



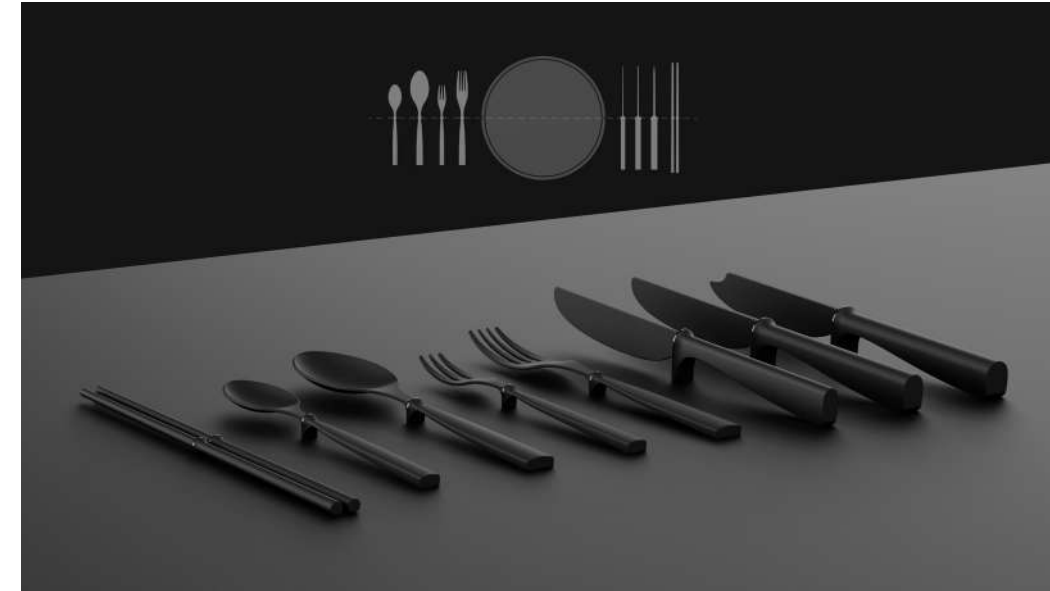
Portfolio



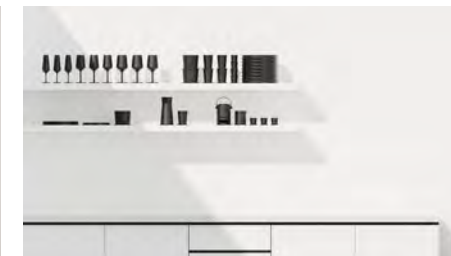
Dine Serif

Dine Serif is a family of tableware inspired by the unifying principles of typography. Designed like a typeface, it embodies the expression of a language that binds different culinary traditions – from the Western knives and wine glasses, to the Chinese chopsticks and tea set. Each piece dialogues gracefully with one another, refined to work in concert and in any combination. By practising typographic instincts (e.g. light, regular and bold weights according to the sequence of placement), the collection behaves like an alphabet of objects that harmonises your dining and storage experience. All made with traditional materials then finished in black, each item is like a letter to be composed on a page of white.

Under the supervision of Christophe Gaubert.



The collection complements the art of table setting by adopting typographic details to intuitively guide people. With the 'serif' detail right at the midpoint of all silverware, users are able to neatly align and space them apart with ease. They are welcomed by gentle imprints on both sides of the plates and bowls, producing an optically balanced layout.



The goal of typography is to create harmony and bring order. This same idea extends throughout the product journey: from how they are introduced in the catalogue, to the way they are packaged, from when they are in use on the table, to when they are stored on shelves and in drawers.



Design Futures &
Critical Inquiry



Kianne Lim

Around 5 years ago, I realised that business alone was not enough to solve social issues dealing with community revitalisation. I was drawn to the inherent power of designing products and services, and how it can build relationships and empower people. In 2018, I quit my job to pursue studying product design full-time. That was my start.



Portfolio



Fascinating Clouds

Of all things that paint the sky, clouds have long been objects of my fascination. There's something about gazing at clouds that leads me into a quiet world of contemplation. And yet the creative force of clouds is a strange, even counter-intuitive, one. A big part of my journey was learning how to be delicate in capturing and translating an idea; to maintain a light touch and work in a child-like, intuitive manner. The result is a series composed of reflections leading to objects with a simple connection to clouds.

Under the supervision of Patrick Chia.



In a collection of rugs inspired by a walk after the rain, the velvet sheen shines as if the clouds themselves had multiplied into brilliant cloud puddles.



A composition of 7 circles, it is possible to assemble several carpets, according to the desired size and shape.



With an exterior but no walls, yet an inner space exist. The cloud sculptures imagine a space where people could move in and out freely.



Design Futures &
Critical Inquiry



Koh An Pang Samuel

Samuel finds joy in building relationships and learning about people. He is optimistic towards the challenges in life, and believes that there will always be a way to make something better. He also believes that it is important to slow down in life, to take the time to breathe it all in and appreciate life.



Portfolio



The Social Messenger

An app that allows you to better communicate and express emotion, allowing you to say the things that you wish to say, the way you wish to say it. The social messenger focuses on allowing you to express your emotions, by picking up signals through sensors in your phone. Coupled with the power of machine learning, the Artificial Intelligence suggests effects and animations to assist you in the delivery of your message.

Built to capture the intricacies and nuances of daily in-person conversations, the Social Messenger reimagines digital conversations, through the translation of daily actions into visual animations.

Under the supervision of R. Brian Stone.



Feature: Artificial Intelligence captures the average keystroke speed and, coupled with readings from other sensors, suggests the appearance of the text, showcasing the haste in which the message was written. This, however, can be toggled and adjusted by the user.



Conversation signalers

- Translates physical actions
- Indicates exiting of chat



Feature: Feedback by the AI captures the latency in keystroke speed, mimicking the vocalised pauses in speech, which then translates to a halted-review animation message, where the message is revealed as it was typed.



Feature: Conversation Signalers pick up the physical actions from the phone, such as slamming the phone down in anger or lowering the phone down sadly, and translates this into animations on the receiver's screen, to create a dialogue.



In-text animations (Animations)

- Controlled Vocabulary
- Broad yet specific
- Selected emphasis



Services & Social Transformation



Feature: Animations allows you to express emotion, through animation. Choosing and applying the appropriate animation creates emphasis and lends the effect of speech and body actions to the text.



Koh Bei Ning

Bei Ning's iterative design approach acts as a reflective lens for her to embrace failures as thoughtful lessons. She believes that good design enables, and that her empathy, sincerity and optimism are essentials to design meaningfully.



Portfolio



Rollerball Itch Relief

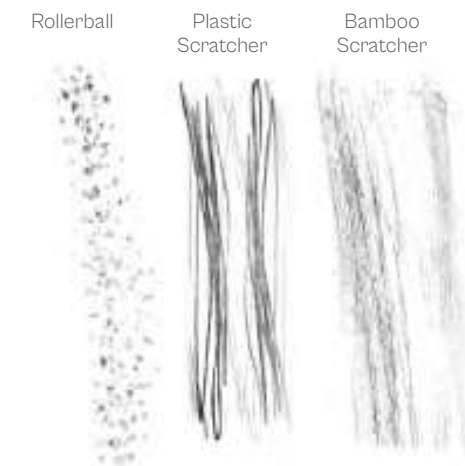
A rollerball itch reliever that never scratches. Designed to help eczema patients cope with their unbearable itch, this textured rollerball provides a sensation similar to scratching, while its rolling mechanism ensures that skin is never torn. Made of stainless steel, the rollerball is cooling to the touch even at room temperature, so users can further soothe their inflamed skin. This itch reliever is proposed as an intervention tool, so users will no longer feel helpless and guilty during flare ups.

Under the supervision of Donn Koh.



Design Details

Its 3 piece case can be taken apart to allow for effortless and frequent cleaning. It's seamless interior also minimizes the accumulation of dead skin during use.



Safety & Texture Explorations

Scratching over carbon paper helped visualize that the rollerball itch reliever does not drag on the skin and is gentler than other conventional scratchers. Iterations were done by tweaking parameters like peak shape, diameter and height, to deduce a sensation that is safe yet sufficient for relief.



Innovation for
Industry





Kwa Li Ying

Li Ying believes in the merit from uncovering and investigating the history and stories behind our everyday objects, spaces and people. To her, good design starts with questions, both good and bad.



Portfolio



Contextual Use:
Main Label features the hawker stall number, hawker centre name, hawker stall name and an additional Halal symbol. Minimized Label features only stall number and Halal symbol.



Singapore Hawkerware Graphic Label Standards

Singapore Hawkerware Graphic Label Standards is a graphic identity system to unify and communicate a cohesive Hawker Culture branding across the assortment of tableware used by hawkers.

The publication highlights Singapore's current and incoming ware return systems, the necessity to preserve our diversity of hawker crockery and the standards manual for the graphic labels' design, art reproduction control and complementary visual assets.

Under the supervision of Hans Tan.
In collaboration with Hoover Melamineware.
With assistance from The Federation of Merchants' Associations, Singapore.



Read the publication here



Contextual Use: Main Labels are featured on crockery used for mains or entrées. Minimized Labels are used on side crockery, flatware and drinkware.



Design Futures & Critical Inquiry



Lee Zhi Ying

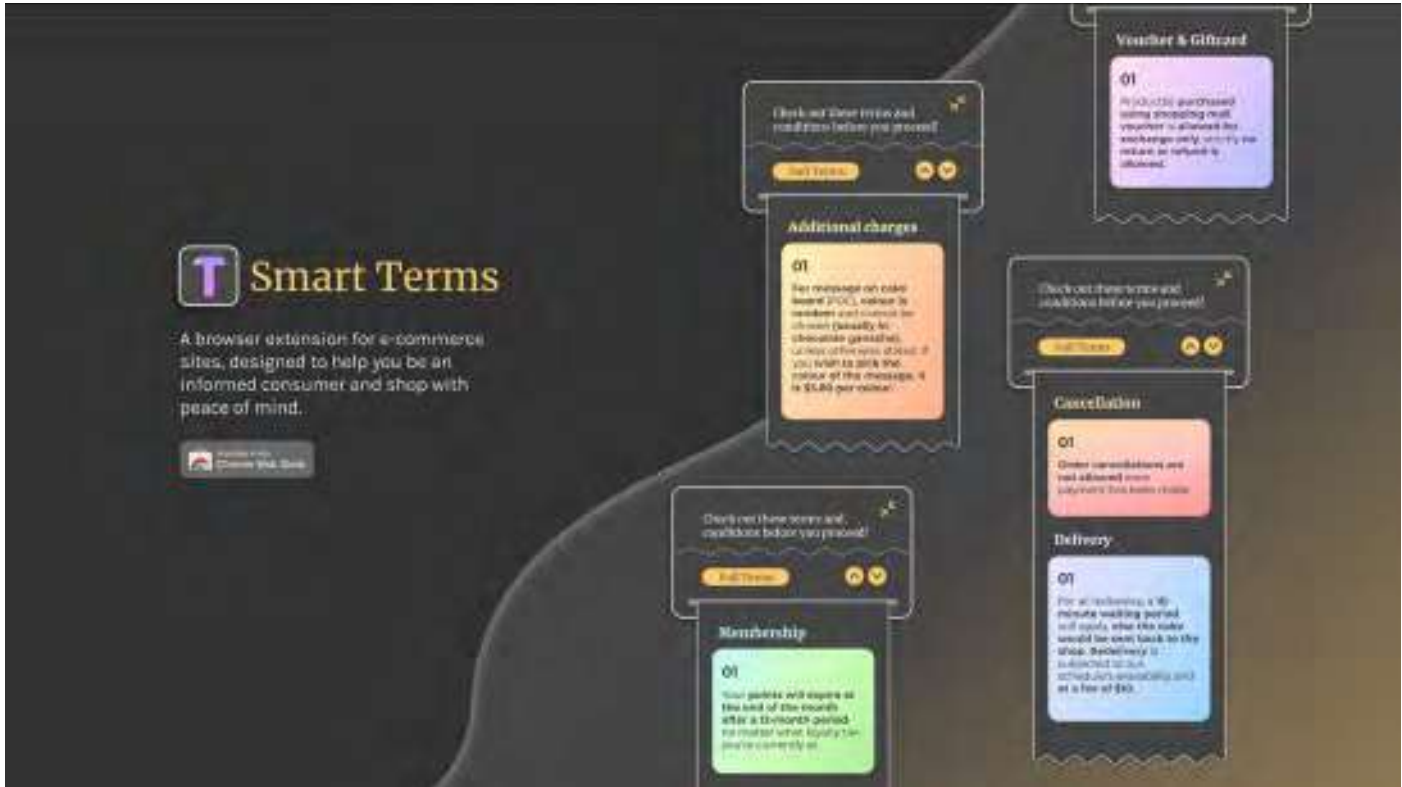
Zhi Ying is a highly empathetic designer who enjoys listening and problem solving. She believes that good design is capable of solving problems for both the user and the business.



Portfolio



← Categories of terms identified to be most important to consumers when they make a purchase.



Smart Terms

A browser extension for e-commerce sites, designed to help you be an informed consumer and shop with peace of mind. Smart Terms analyses e-commerce terms & conditions agreements and displays only relevant terms at appropriate moments during your purchase journey. All the information you need to make an informed purchase, from membership, voucher & giftcard, delivery, return & exchange to charges-related terms are curated for you.

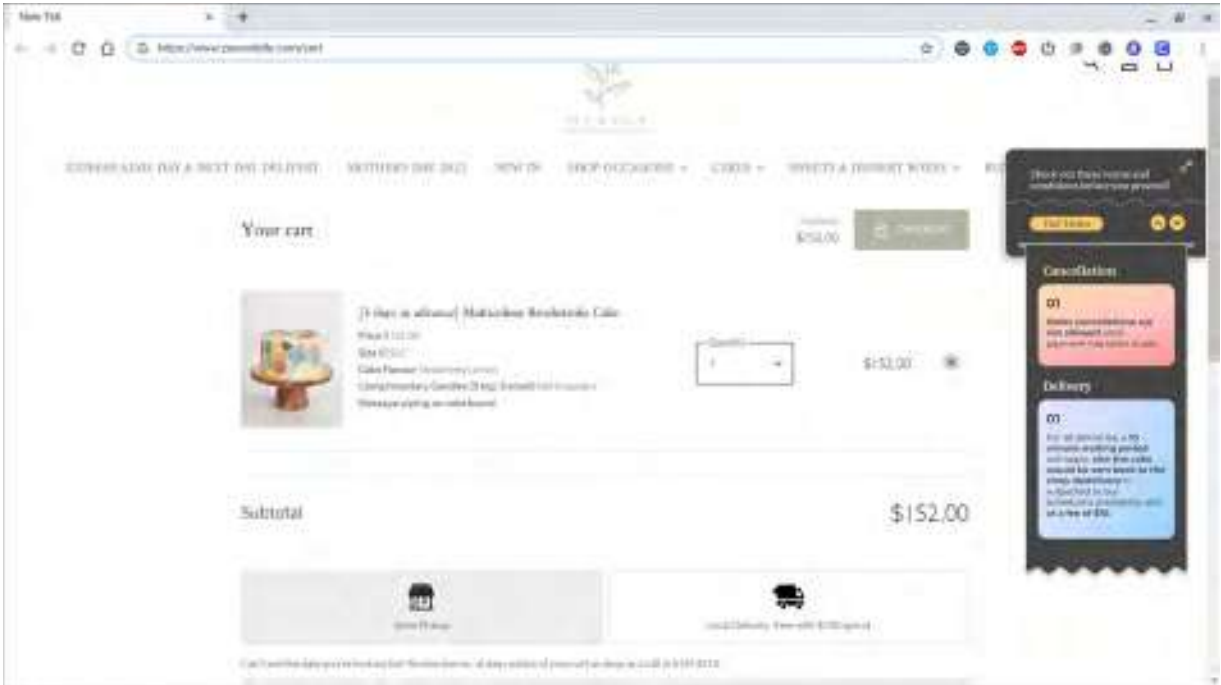
Under the supervision of Dr. Yen Ching-Chiuan.



↑ User personas based on the experience of 2 consumers who have encountered terms & conditions problems with their purchase.



↑ Consumers mostly experience negative emotional experience in the post-purchase phase and when they check out their cart.



Services & Social Transformation

↑ Smart Terms on an e-commerce site.



Lester Kum Kar How

Lester is always looking to challenge the norms and showcase his takes on product design through his works. 'How can I help enhance users' experience?' and 'How can I create a product that can stand out from the market?' are 2 questions that always remains as he conceive his ideas.



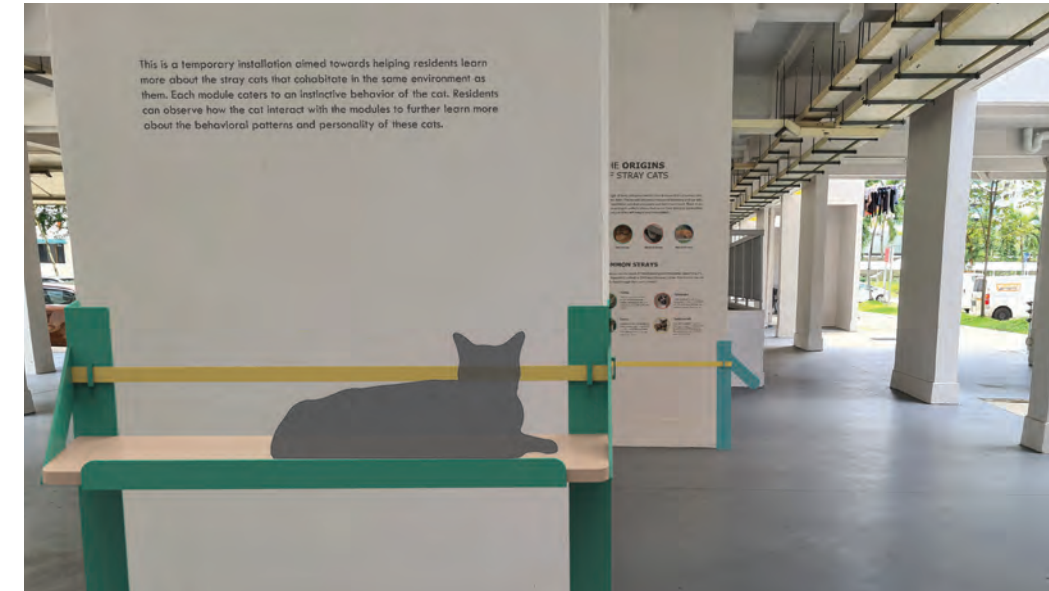
Portfolio



Stray Cats Project

A temporary installation that consist of 3 modules that lean on a cat's instinctive behaviour of climbing, scratching and hunting. Residents can gather to watch the cat interact with the modules, care for the cat and learn new information about it via the information present on the columns. The installation will be rotated between various void decks around Singapore so that residents from different neighbourhoods can experience it.

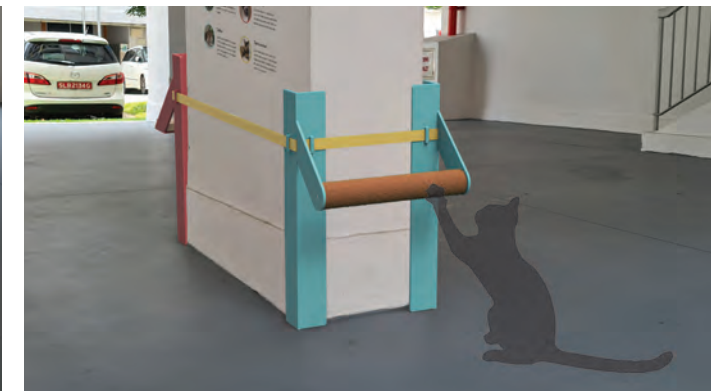
Under the supervision of Dr. Christian Boucharenc.



Rest module: Leverages on a cat's instinctive behavior to climb as higher ground provide it with safety, security and confidence.



Play module: Leverages on the cat's instinctive behavior to hunt. The movement of the yarn mimics its prey movement and having "prey" that the cat can catch will give it a feeling of satisfaction.



Scratch module: Leverages on the cat's need of sharpening its claws via sisal as a form of exercise method to mark its territory. As most cats are sterilized, they are unable to spray to mark their territory.



Services & Social Transformation



Informative text: Information related to stray cats such as their origins and trivia such as how to identify them are present on columns to educate residents.





Lewis Ten Yi An

Lewis enjoys bringing memorable experiences through the narratives he designs. He believes that journey of design is one of humility, understanding and learning ... but an additional sprinkle of silliness makes all the difference.



Portfolio



Surficial Bananas

Surficial Bananas is a study on the fruit as product and its skin being the packaging that holds the contents within. In viewing fruit skins as an interactive surface that communicates with its users, the observations and explorations seek to discover alternative interactions and new starting points for the consumption experience - from seeing to eating.

Under the supervision of Patrick Chia.



What can exist on a banana skin?

Each proposition uncovers a different way of perceiving and interacting with bananas, through the use of stickers as surface manipulators.



PROPOSITION 3

Banana w Artificial Ripening Spots

Spots that occur naturally on the banana skin act as a visual indication of the ripening process. As they appear, one would know that the fruit should be consumed without any further delay. In mimicking the patterns of naturally occurring spots and transposing them onto the skin of the banana, it was to uncover the impact of false ripening indications on the perception and condition of a fruit.

[1] From a distance, the mimicked ripening spots presents a visual illusion of ripeness of the fruit. [2] This increases the cognisance of the state of the fruit and nudges one to consume before it gets overly spotty.



Doppelgänger Spots

The mimicry of natural ripening patterns showcasing the fruit in an exaggerated visual state to nudge for its prompt consumption before overripeness.





Li Si Yi

Si Yi is inspired by the mundane events happening all around us. Her work injects a little joy and warmth into human interactions through questioning and bringing awareness to what we often look past.



Portfolio



Innatralis

What is natural? Human's interaction with nature has been largely debated over the years. Innatralis adds to this discourse through pushing the limits of indoor plant pruning. A series of seven different indoor plants have been curled in different ways through the use of a curling kit. With selective breeding and evolution that is shaped by human behavior, what is truly 'natural', might not be as clear cut as it seems. How then should our interactions with nature be shaped by our understanding of what it is?

Picture: **Dypsis lutescens** / Full roll (M)

Under the supervision of Hans Tan.



Schefflera arboricola / Side Roll (A)



Epipremnum aureum / Cone roll (A) : Made with 60mm diameter circular mesh, 30mm stopper rod, 3mm rolling rod



Ficus benghalensis / Tip Roll (A) : Made with 5.5mm diameter clip, 5mm rolling rod



Design Futures & Critical Inquiry



All the tools are designed to allow for plants to be curled without causing any damage. They are also modular to allow for it to be used for other plants types that individuals want to explore.



Lin Tsai Wei

Tsai Wei draws inspiration from everything around her. She is a big fan of learning. She enjoys turning observations and knowledge into designs that push boundaries. In her free time, she can be found picking up a new craft or language, or reading scientific answers to absurd hypothetical questions.



Portfolio



Expansion

Provides more information or actions

e.g. Drop-Down, hamburger menu, "SHOW MORE"

Navigation

Redirects user to new page

e.g. Link, login button, submit action

Tool

Modifies a web page or its content

e.g. Edit, delete, full, light/dark mode



Exploration: UI buttons come in all shapes and forms. I divided them into three broad categories and decided to focus on navigation buttons.

Button States

Active	Hover
Focus	Click
Disabled	Pressing

Approach in the hallway, 1st step

Touch of the door, 2nd step

Click of the door, 3rd step

Release of the door, 4th step



Exploration: What are the ways people interact with buttons? How do the buttons react to us?

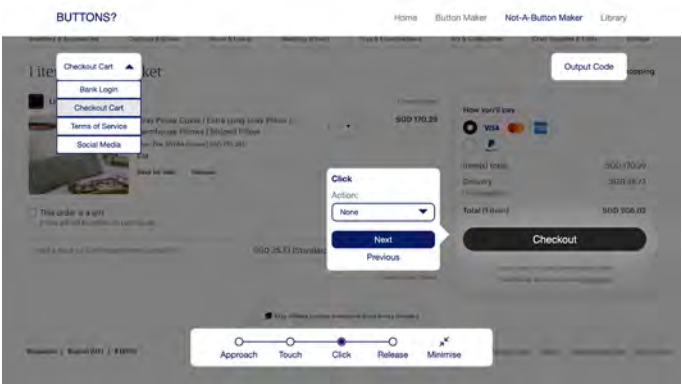


Exploration: Navigation buttons let us cross between virtual environments, like a door. If buttons were doors, then what is a click? I broke down a click into four steps and compared it to the process of crossing through a doorway.

Buttons?

What are buttons and why are they the way they are? This project explores the nature of the buttons that currently exist on our user interfaces. I then propose a new way for designers and developers to create buttons, which is to approach their design as a user journey. If a button shakes as the cursor approaches it and jumps when it touches, what kind of experience would that bring? In a different context, how might the message conveyed by the button change? The website contains button maker tools and an unconventional button depository for designers to explore the answers to these questions.

Under the supervision of Dr. Clement Zheng.



The not-a-button maker lets creators of UI buttons create an entire experience around this micro-interaction. They can then export this button to use it on their own website.

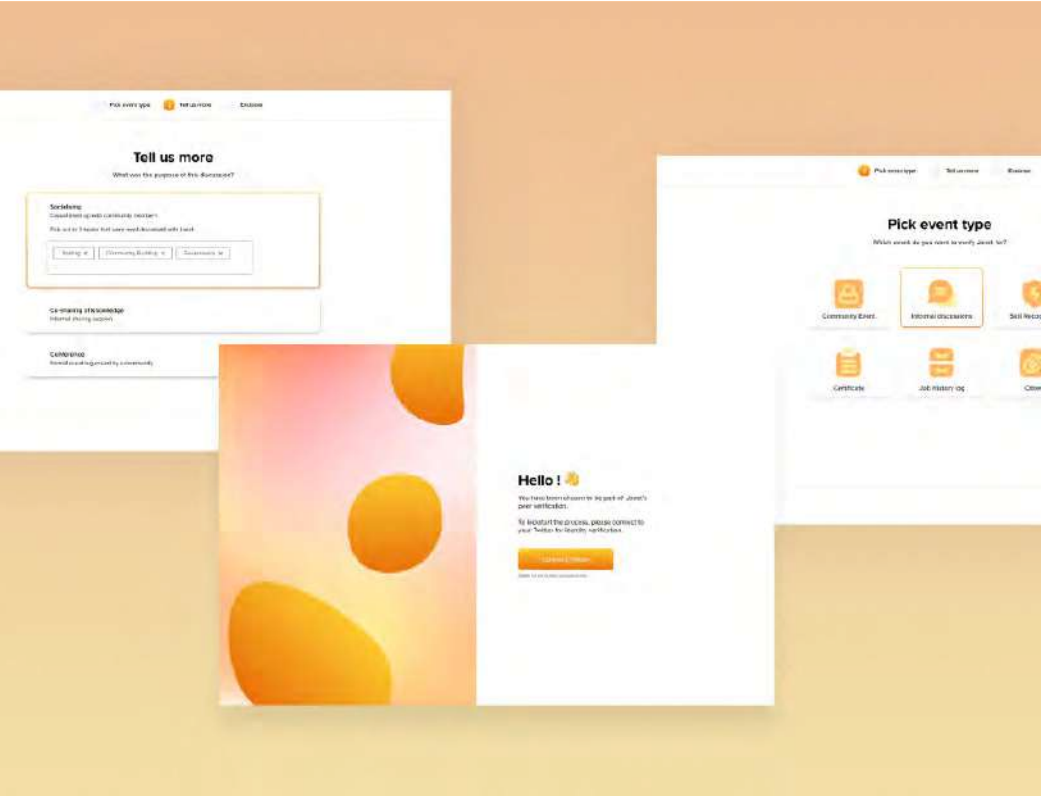
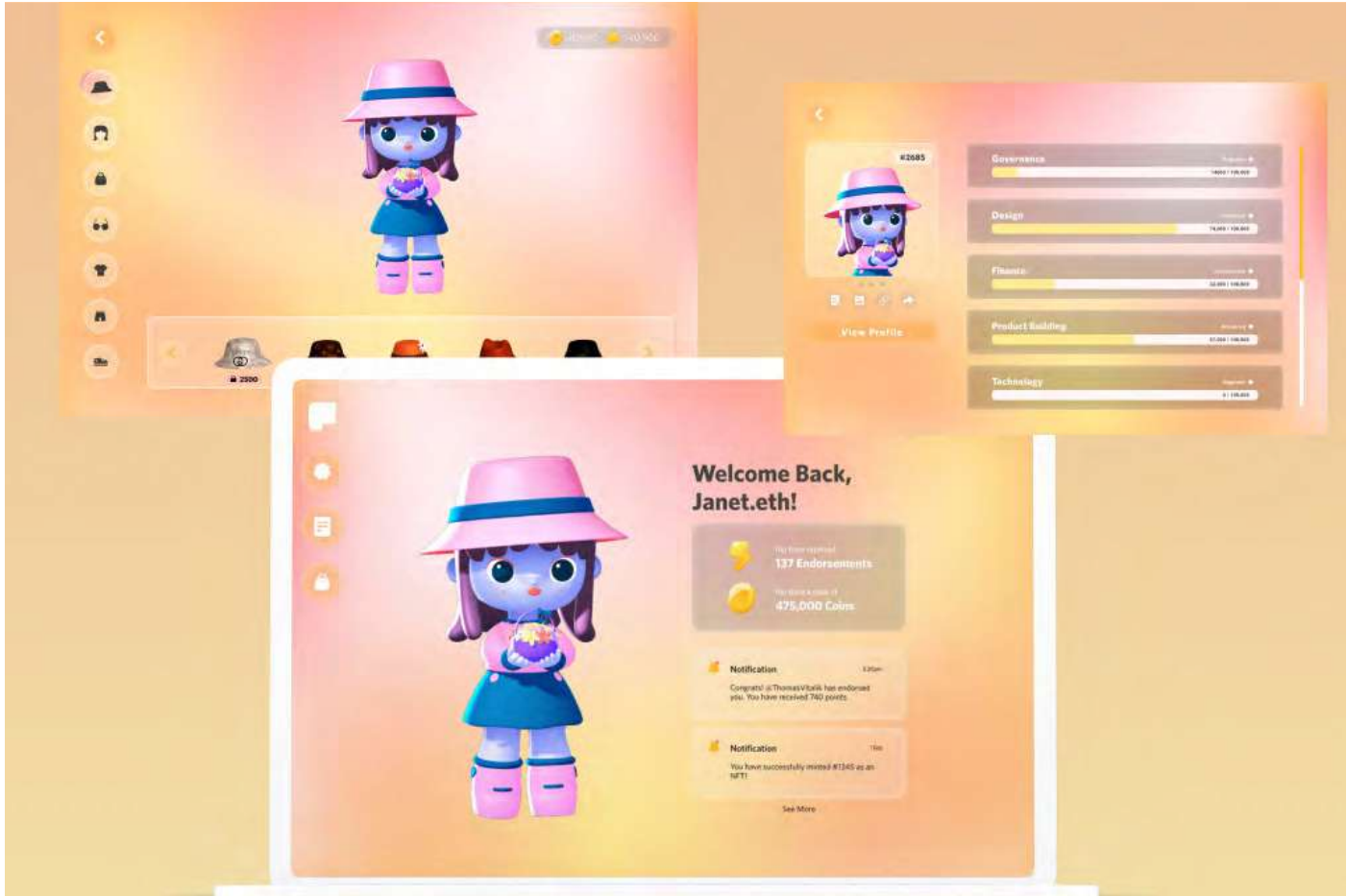


Mabel Khaw Shi Qi

Mabel believes that design is best flourished in industries like tech and business. She believes that good design is holistic and inclusive to everyone.



Portfolio



A Web 3.0 Passport

In recent years, there is a general progression towards a virtual way of living, working and playing with the power of blockchain. Some people call this the new evolution of the internet and they name this Web 3.0. In this new world where everyone is virtual and usually anonymous, reputation & credibility are hard to be conveyed through means we have in the physical world like spontaneous conversations or official documents. As a newcomer, one essentially has to build up a second life virtually and anonymously, from scratch to participate in this new online community and this has proven to be pretty difficult. So, what if there could be a system that could ease this onboarding process?

Under the supervision of Dr. Clement Zheng.



Here is Min, your very own Web 3.0 Passport. It records & analyses your activity and uses the data to shape your virtual identity as you interact with the community. On the other party's end, the existing web 3 community is able to trust and know you on a deeper level with substantiated history and data.





Mervyn Chen

Mervyn has a design curiosity in exploring surface manipulation and textile construction. He believes in both functionality and fictionality. At the same time, he is motivated by designing around the story of product life cycles.



Portfolio



The Mad Hatter Collection

A collection of re-shapeable hats showcasing the possibilities of liminal textile shaping.

These hats are re-designable and re-sizable from scratch without any machinery or tool. The temporary nature of the construction material allows for repeated adjustments, and there is no consequence of making mistakes. Hence, this process can be for an amateur consumer but also can be for a business of a skilled craftsman.

While functional, these hats are also fictional as they seek to question the problem of fast changing trends and consumer culture in the fashion industry today, and how both the consumer and businesses have a part to play.

Under the supervision of Hans Tan.



Liminal Textile Shaping

An exploration on temporary textile applications led to a discovery of a new way to create structure and form on textile surfaces using hook and loop interactions.



A Novel Process Inspired By Traditions

Inspired by traditional millinery craft, and modern DIY culture. Hats can be created to custom fit and custom designs.



Design Futures &
Critical Inquiry



Nathaniel Ng

Nathaniel is a curious designer who looks to making and tinkering as an avenue for creative innovations. He also engages in fictional world-building to create speculative lenses to view familiar aspects of our own that have been transformed and accentuated.



Portfolio



Null Objects

A collection of open-source 3D printed modular electronics. Designed for makers to streamline the process of making bespoke electronics. Null Objects modules are designed to be fabricated with most entry-level 3D printers in the market. Accompanied with parametric design features that enables ease of printing and assembly, the modules are highly versatile and able to adopt most off-the-shelf electronic hardware in the market.

Under the supervision of Dr Clement Zheng.



Modules: The collection consists of 4 types of Modules: Power, Output, Modifiers and Joints. Each serves as a building block that can be assembled into a functional product.



Connector: Specially designed, hot-swappable connector that utilises magnets and conductive pins for satisfying snapping haptics.



With a variety of different output modules ranging from LED to servos.



Assembled devices could range from a single axis motion controller to an adjustable fume extractor or a ring photography light.



Innovation for
Industry





Nysha Tan

A curious individual keen in identifying the undercurrents of human-centred design, Nysha believes in designing with people and not just for them.



Portfolio



Treeline

We often take photos of trees that fascinate us before moving on. How might we enrich our encounter with trees and learn about their hidden stories? Using Geo-location, Treeline allows users to get to know trees in a more personal manner while granting users an opportunity to celebrate and contribute to a tree's living history.

Under the supervision of Song Kee Hong.



Development

Using design probes during workshops to uncover how people want to learn about trees.



User Testing

Testing prototypes at parks to collect feedback on their experience and areas of improvement.



UI/UX

Structuring the digital interface with areas dedicated to discovering and documenting the trees around us.



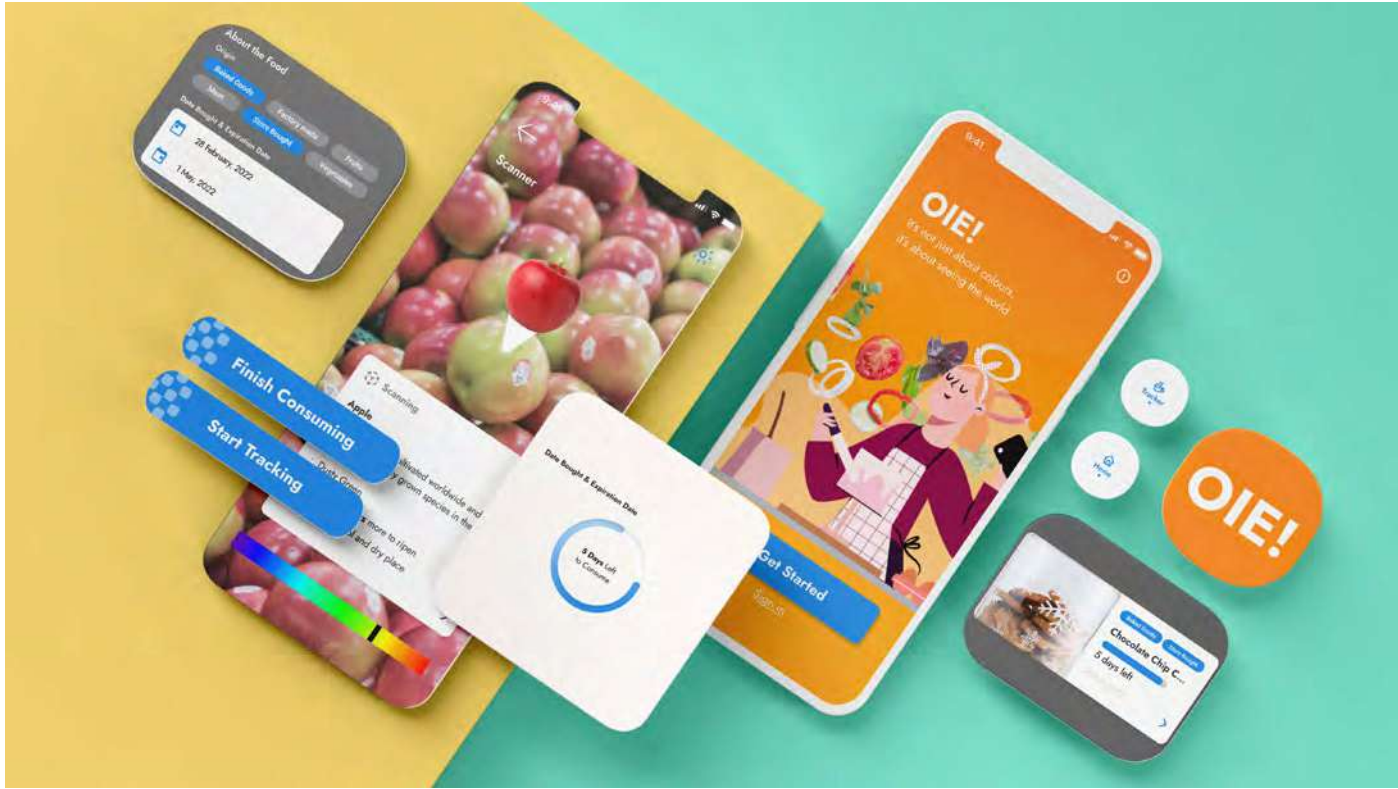


Ong Kah Min

The primary purpose of my role is to bridge gaps in various experience journeys and focus on people's needs. I enjoy uncovering untold stories through genuine conversations with people. While deciphering people's stories, I pick up tiny details along the way and reinterpret them into simple and easy-to-use designs in every possible scenario.



Portfolio



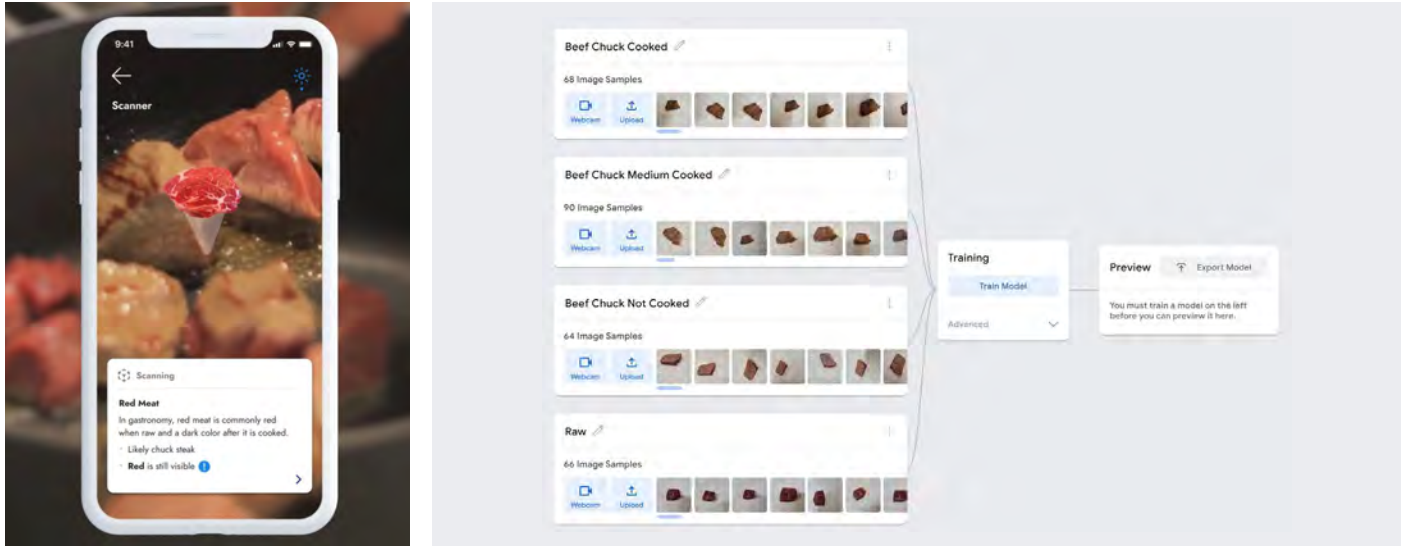
Objective Intelligent Eyes

How is the food safety of colour deficient users being compromised? Most people often assume colour deficiency is about seeing the world in black and white, affecting their world semantics. Neglecting the fact that it corresponds to the natural occurring information we see in food, which is colours. Utilizing a local image database, Objective Intelligent Eyes (OIE) recognizes image pixels to determine the best match for the food product in front of the mobile camera.

Under the supervision of Dr. Yen Ching-Chiuan.



Exploration: Machine learning could be a helpful method to address the verification of the food that a colorblind user is perceiving.



Exploration: The tool aims to be an assistive device in unpacking visual information of food and empowering people to be independent in their food choices, preventing potential food poisoning.





Rachel Sim Si Hui

Rachel has always been in tune with her senses, always looking for new ways and opportunities to play with them. She thinks that design is about more than just improving the user's experience anytime they come into contact with something, because it is the experiences that users have that stay forever.



Portfolio



Repose

REPOSE gives flowers a second life after they have served their function as a gift, a symbol of affection, or a celebratory means. It is a technique for repurposing flowers, transforming them from organic waste to a meaningful solid scent for diffusing and keepsake. A diffuser is built in conjunction with the solids and is especially meant to reduce indoor pollution by eliminating the need for direct burning of the solid to diffuse scent.

Under the supervision of Hans Tan.



Exploration: This making process aims to allow users to wind down and relax from the fast paced lifestyles people are accustomed to.



Exploration: A recipe book consisting of six formulae inspired by flower bouquets, each of which taps into a different category on the fragrance wheel, giving users a variety of aromas to experiment with. Users can refer to the ingredients and are encouraged to explore and be creative with creating new and unique scents right at the comfort of their homes.





Sarah Tan Wen Hwei

Sarah works at the intersection of design, business, and technology - and is a self-starter fuelled by a passion for design-driven innovation. Her multidisciplinary design approach draws inspiration from her varied business experiences in entrepreneurship, marketing, and consulting. As a Design Strategist, she explores the synergy of Design with other disciplines, to design growth-driven products and brands.



Portfolio



d.AI - Designing for designerly learning of Human-centered AI

Today, Artificial Intelligence (AI) is increasingly everywhere around us and to design for more responsible AI, the next frontier of technology needs a more human-centered approach. How might we help designers collaborate better with AI, and improve designer's capabilities to help make AI more user friendly and ethical for society?

d.ai is a platform ecosystem for the designerly learning of human-centered AI to equip designers with AI design capabilities through an interactive and engaging platform experience.

Under the supervision of Dr Lee Jung-Joo.
In collaboration with AI Singapore (National AI Foundation).



d.AI is a holistic AI design ecosystem for designer's learning, consisting of a digital platform & physical toolkit. It is designed according to a progressive learning mechanism and is structured based on interview insights on the key skillsets needed by designers across AI Design stages.



d.AI's AI Design Toolkit is a simple simulation of an AI design process Aimed to be used together with the digital platform, it consists of an instruction manual, 5 prompt cards, and a AI design canvas template.



AI Design workshops: I conducted AI Design workshops with the AI Design Toolkit, facilitating focus group sessions with Designers



the d.AI ecosystem



Services & Social Transformation





Shaina Kang

Design is change, and only change is constant. To Shaina, idiosyncrasy is essential in design, with which without makes Jack a dull boy. Caving in to normality would feel dishonest and boring.



Portfolio



EMBODY

EMBODY is a collection of garments designed to inspire new movements in contemporary improvised dance. These garments accentuate a dancer's emotional experience through constraints imposed that creates disbalance or momentum. This necessitates a dialogue between the dancer and their body as the dancer is made to unlearn how their body moves. In doing so, they rediscover their bodies through a physical introspection which manifests itself in the form of self-expression in dance. The introduction of new dialogues to the dancer's body thus fosters new ways to move.

Under the supervision of Christophe Gaubert.



← THE FLOW PIECE

The constraint imposed here obstructs movement and in doing so its limitations ironically open up new movement possibilities.

This works as the body reacts to the tightness of the garment which brings momentum. As the body reacts to this, it allows the dancer to go over the limit of their body.



← THE TIME PIECE

Tension from the fabric was utilized to forge movement within the dancer. Movement here is induced by creating a domino effect where the arm guides and expedites a continuous movement from the neck and head.

This forced reaction from the body results in new ways to move for the dancer as it engages the whole body in movement in a spontaneous yet organic manner.



Design Futures & Critical Inquiry

↑ THE WEIGHT PIECE

Artificial momentum is created with the use of weights and extended sleeves. This momentum created allows the garment to lead the course of the dance, essentially creating a natural form of choreography for the dancer.

This allows the dancer to simply listen to however their body moves, thus unlocking their body's potential.



Shanel Han Hye Jee

Shanel takes inspiration from the small things in daily life; translating them into her works to create quirky narratives and delightful experiences for all.



Portfolio



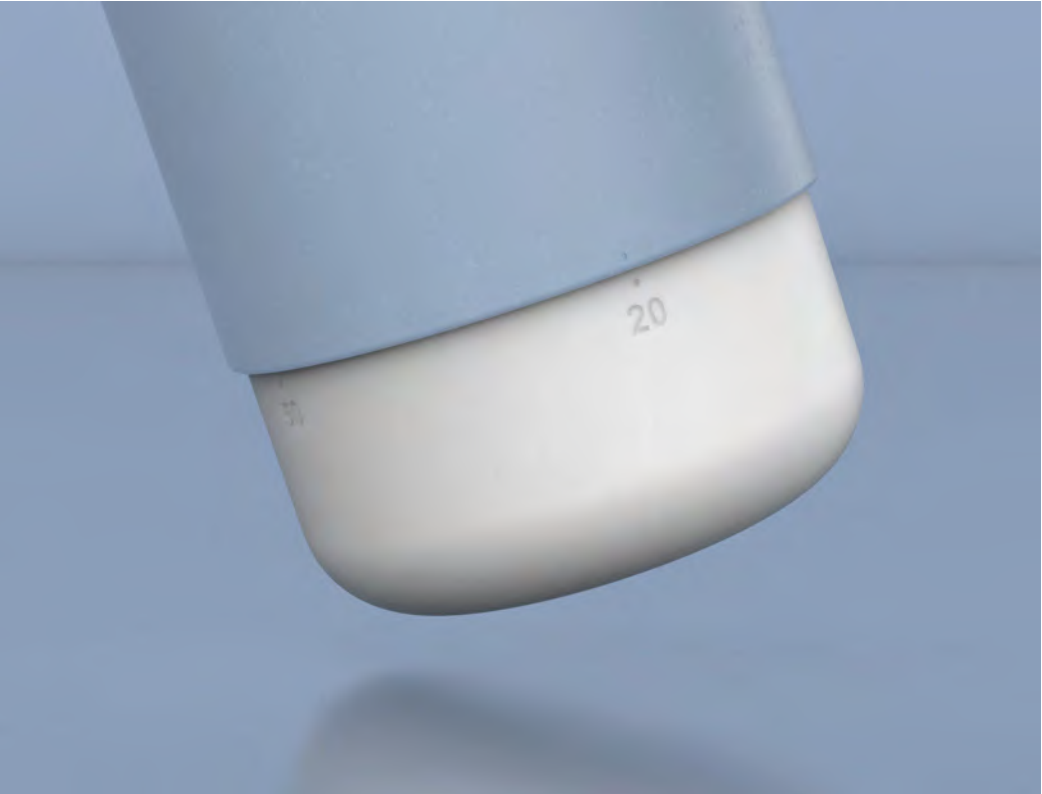
Dysfunctions in
Everyday Objects

Could things that we imagine to be problems be a great source for delightful functions? What if there was a piggy bank that would intentionally leak out the coins that you choose? Instead of working around dysfunctions and perceiving them as weaknesses, we can embrace dysfunctions as potentially powerful tools to create more objects of value.

Under the supervision of Donn Koh.



Exploration: Consider the spectrum of dysfunctions.
From obvious, non-obvious to imagined dysfunctions which don't occur in real life, yet are still plausible to imagine.



Piggy Bank: Using the embossed marks as a guide, rotate the cap to choose the coins that will come out of the coin slit.





Siti Hana Binte Amran

Hana’s first question to anything in life is always ‘Why does this matter?’, followed by ‘How can I help?’. A highly relational and perceptive human, she works out of a conviction that an empathetic life-centred perspective brings value to any project from start to finish.



Portfolio



HEYHEY
how are you?

A campaign branding design with the theme «it’s okay to feel blue», and the development of a platform that addresses men’s mental well-being in our current society. The campaign and platforms are designed to facilitate positive conversations and foster a supportive community.

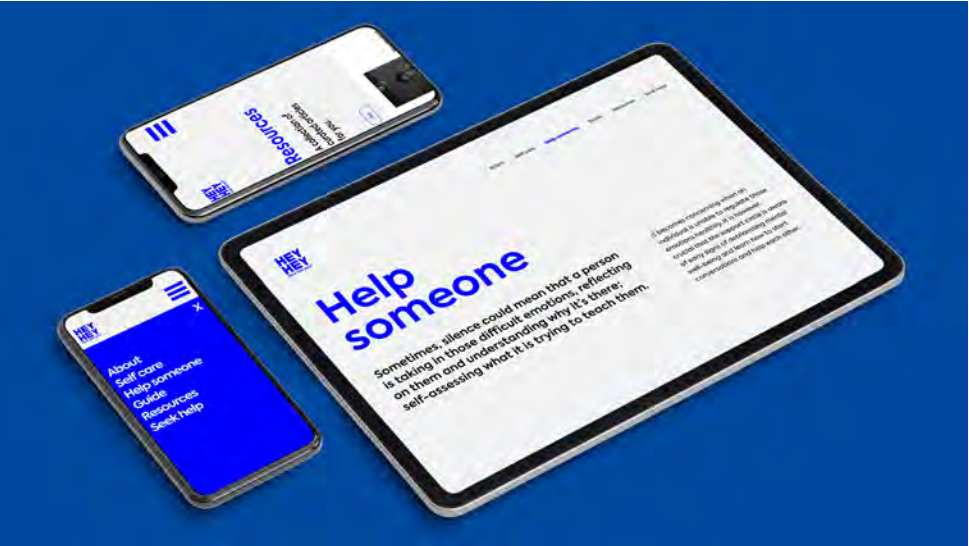
On an individual level, the campaign hopes to allow men between the ages of 18 to 29 years old to acknowledge their feelings, start conversations and reach out for help when needed. On a social level, it is about learning how to support a loved one, observing changes in behaviours, asking the right questions, and following-through.

Under the supervision of Patrick Chia.



Conversation Guide: A guide on alternative «how are you?» questions a person can ask when checking on the emotional well-being of a loved one.

Website: Website interface design where a user can find curated content on the topic of men’s mental well-being.



Brand collaterals: Stickers and totebag design for physical campaign events.



Services & Social
Transformation



Siti Sahrah Binte Juara

Sahrah is a multidisciplinary designer with a passion for creating works for predominantly children. Translating her creative imagination with a splash of colors into meaningful user experiences, her work is never dull. Ticked by the subtleties of uncovering and understanding the nuances of human behaviours with empathy as her key superpower to better equip herself in designing.



Portfolio



The Prompt Placemats

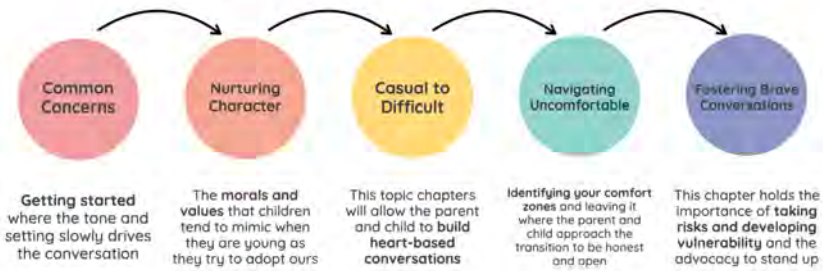
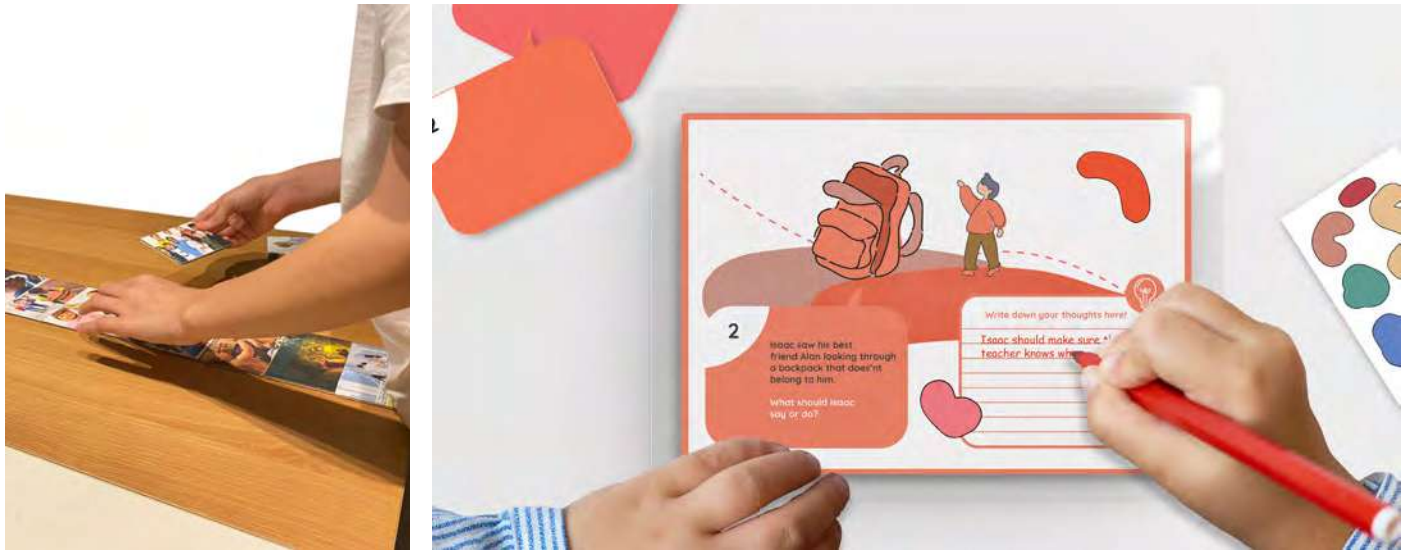
The Prompt Placemats is a conversation starter toolkit to bridge parents and children aged 8-10 years old in facilitating meaningful engagement and communication through the activation of visual prompt scenarios. Designed as a toolkit acting as a gentle nudge as conversation prompts are weaved into the disguised activity book.

Grounded by the framework foundation of illeism, when the child reads the prompts, they are stepping in the shoes of a third person to guide their little friends through their scenarios. Enabling them in a safe space and in control of the stories - without realising that they are answering for themselves or relating back to their own experiences.

Under the supervision of Dr. Christian Boucharenc.



Exploration: Card sorting of topic themes was conducted in the ease of investigating and discovering children's preferences when conversing with their parents as the scope of conversation is being evaluated in understanding of the users' underlying subconsciousness.



Development: The proposed order of topic chapters progressively enables the momentum and intensity of the prompts to be built up for the child to have days that the conversations are more relaxed to more in depth conversations.



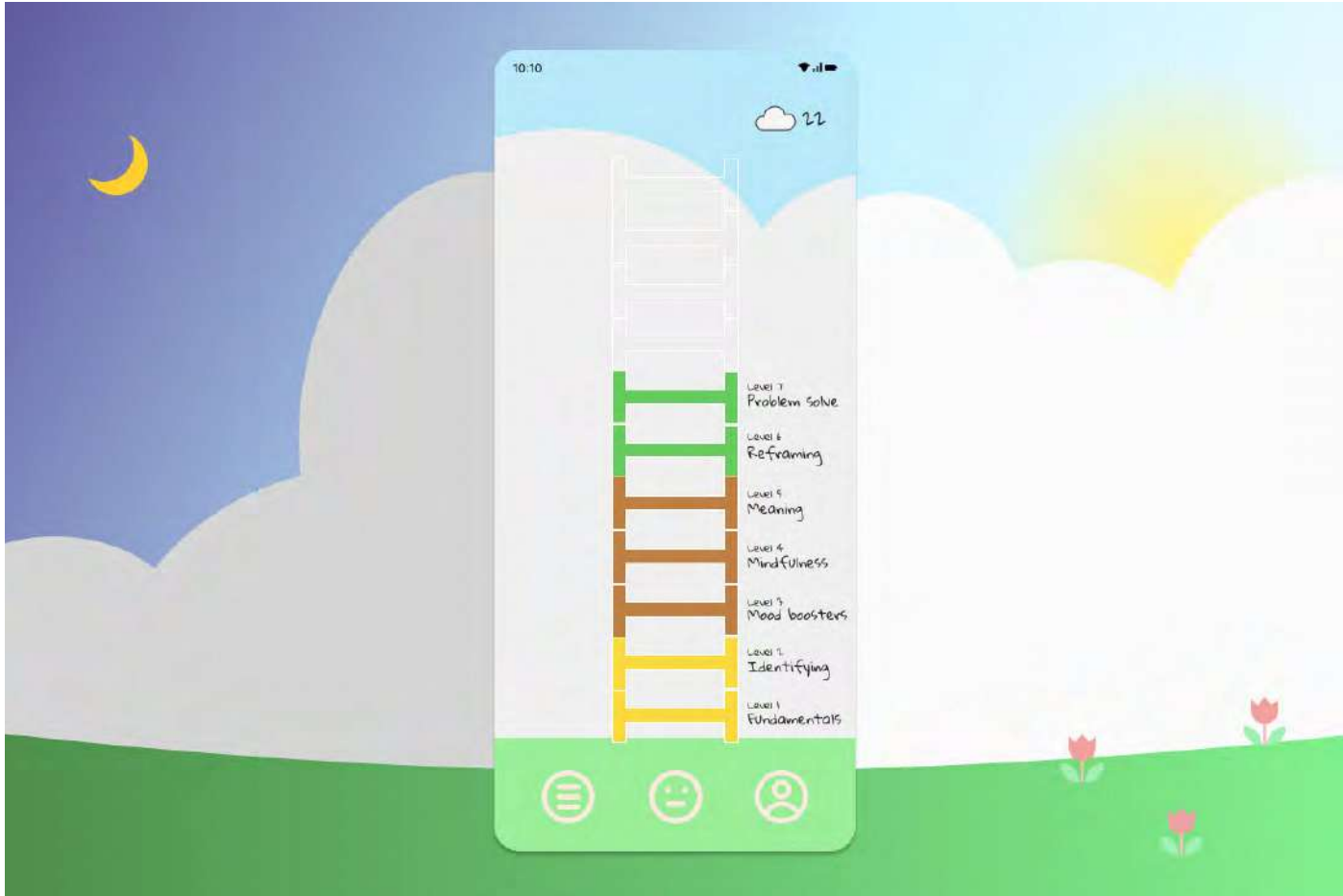


Tan Guan Quan Ivan

To each person who played a part along my journey, I thank you. And to whatever lies ahead, here I come!



Portfolio

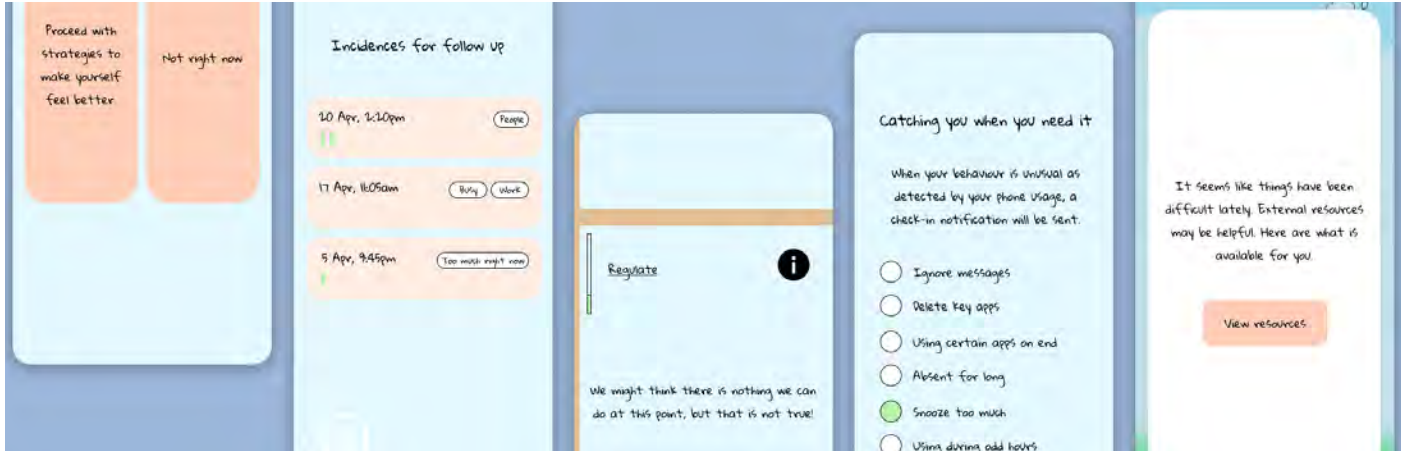
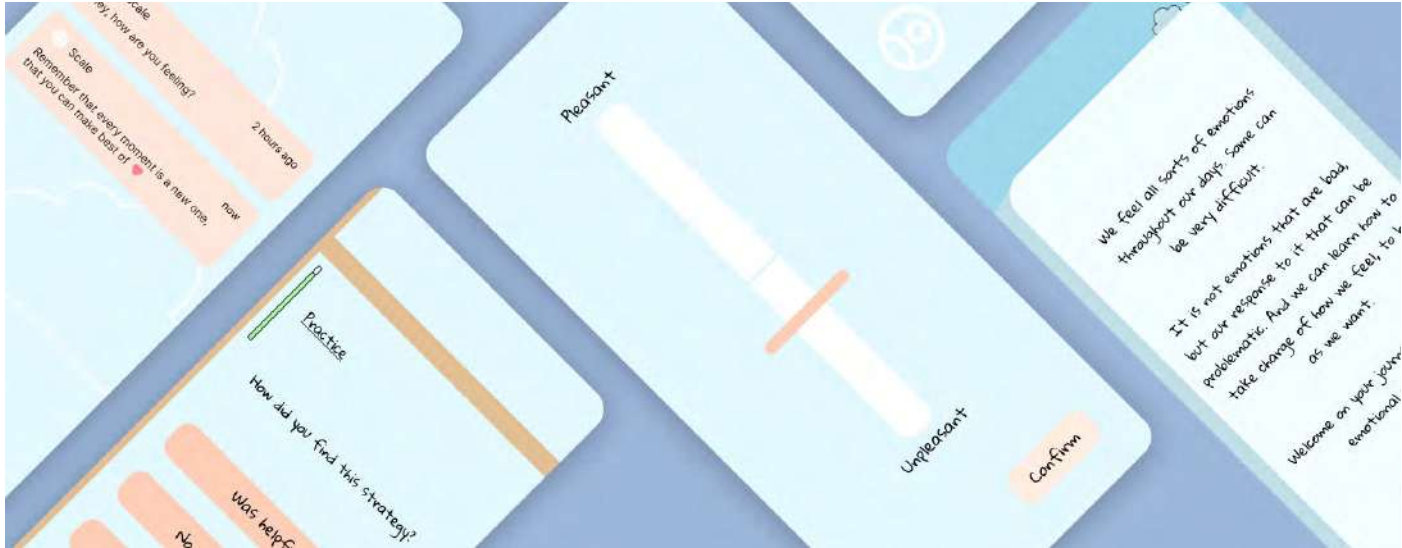


Scale Designed for those who face difficulties with their emotions, Scale is a mobile application to help people develop emotional regulation skills they may not have. It is set apart from existing solutions for distributing these strategies along the day according to users' readiness for them. It is driven by interactions sensitive to people's behavioural nuances when experiencing difficult emotions and is consolidated and delivered through a gamified interface. In all, Scale hopes that people will get to learn and be enabled to respond intentionally to the difficult emotional situations they find themselves in.

Under the supervision of Patrick Chia.



How it works: Advance levels and improve proficiency with emotions by doing activities sent through daily notifications. Activities include a daily emotion scale, regular practices and encouraging recaps. Users are directed to recommended emotional regulation strategies according to how they rated their emotions. Options are provided for them to ultimately select what is most appropriate at the moment. The user is taken through strategies in a manageable step-wise manner; and points are awarded for attempts regardless of success as they find what works for them. Apart from learning with real life scenarios, users can access lessons and practices on their own through the level-up ladder on the home screen, and also track their progress.



Sequenced with you: Recognising that there are times when people are just not available or ready to deal with their emotions. Notable incidences are recorded for follow up, when users are more able to ensure that issues that matter get addressed.



Leveraging the format: Phones follow most of us throughout our day and a mobile application allows for patterns of behaviour to be detected. These feature in the following functions (left to right): Assistance is provided when users are not progressing with a step. Alerts can be set for maladaptive coping that are recognisable by phone usage. And when users reflect emotional states that are potentially of concern, they will be suggested external resources for support.



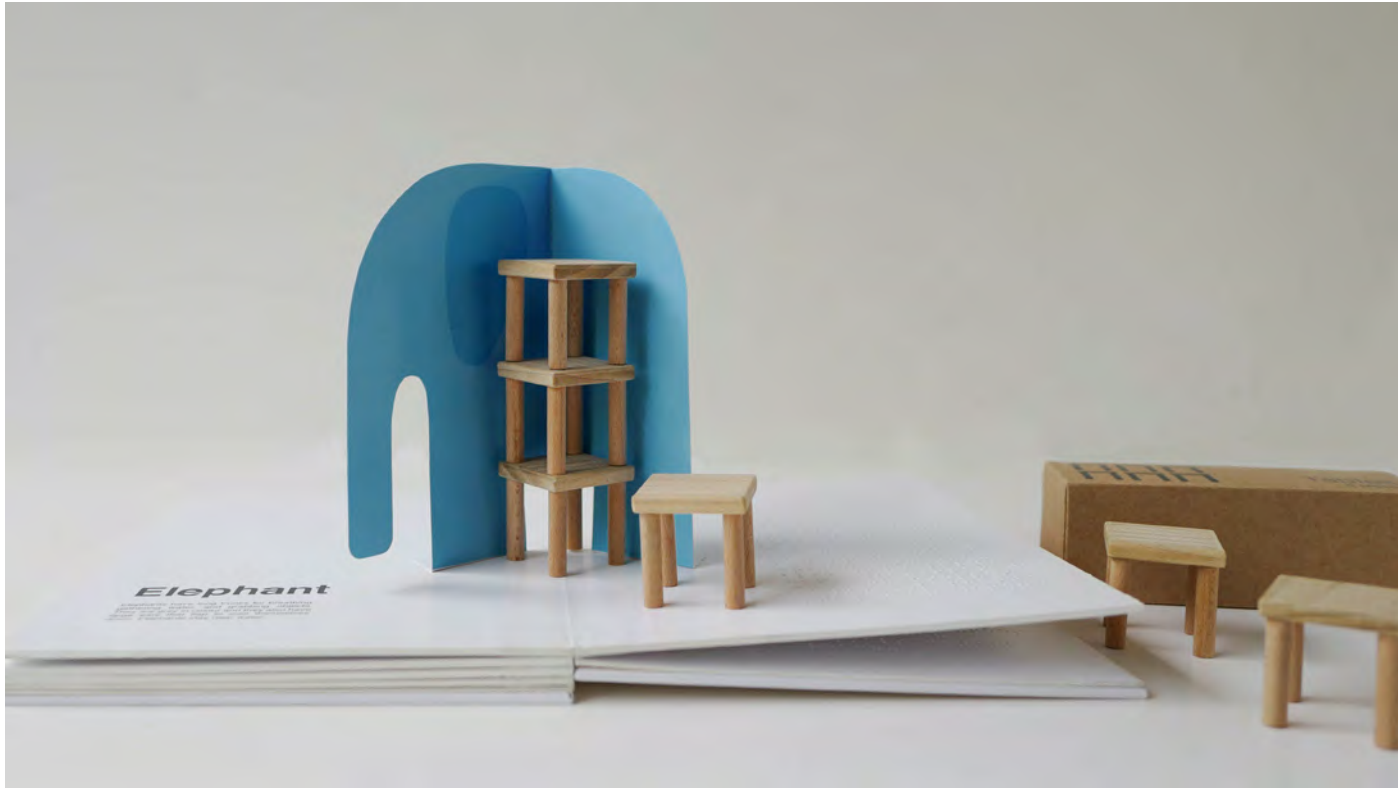


Tan Kah Kiat

As someone who's passionate about designing experiences to delight the human spirit, KK is especially keen on creating meaningful moments in public space design. She finds inspiration from all things around her, many times from her favourite Disney films.



Portfolio



Animals : Tables

This concept was inspired by my interactions with Ruri, an 8 year old girl who has congenital blindness. When a child is visually impaired, it can be difficult to learn about things they cannot touch, like the size of large scale objects. In her world, Cheetahs were bigger than Elephants. This book aims to give visually impaired children a sense of scale for large animals as it is general knowledge and it will help them when they communicate with others. Before children reach 9 years old, learning units using metres and centimetres is too abstract for them. In replacement, tables can be used as a form of introduction to unit measurement, letting children find out how many tables tall each animal is.

Under the supervision of Donn Koh.
In collaboration with iC2 Prephouse.



Video-
User's
reactions



Dining tables are chosen as a universal unit as it has a standardised height of 31". They can also be found easily in households, making it easier for children to touch and relate to.



Each page opens up to a pop-up animal that is bent in an L shape manner for the miniature tables to stack against easily. Braille translations of the animal descriptions are available on the page to the right.



Tables stack easily with magnets embedded within them. They are made in a 1:17 scale.



Each set comes with a pop-up book and a box that contains 6 miniature wooden tables.



Innovation for
Industry



Tan Shieh Chih

Shieh Chih believes in improving people's lives through design. She focuses on putting the users' needs before anything else. Through observation and conversations, she hopes to create designs that solve people's existing problems or present them with new opportunities to enrich their lives.



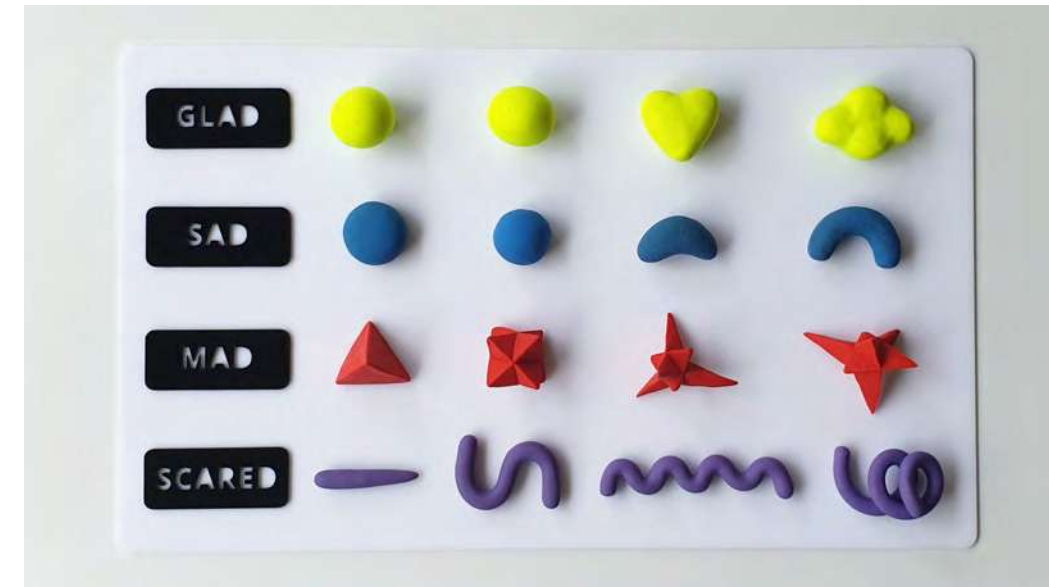
Portfolio



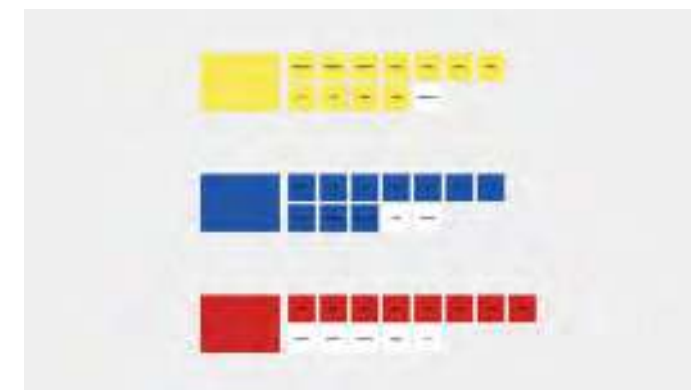
Touchy Feelings

Touchy Feelings is a therapy kit that includes 32 objects. It serves to help teenagers and young adults express their emotions more easily and correctly during therapy sessions. Individuals have the freedom to see, feel and interpret the objects in the kit, and are probed to attach their own stories.

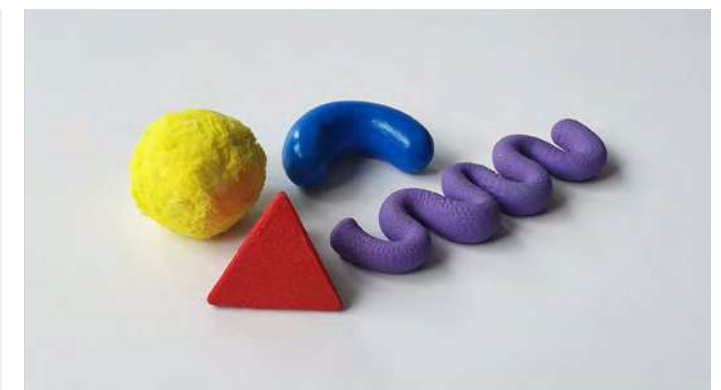
Under the supervision of Dr. Yen Ching-Chiuan.
In collaboration with The Blue Pencil.



Contextual Use: Objects are sometimes placed on the 'Emotion Board' to allow more structured and guided selection of objects. They are categorised into the four basic emotions used in therapy: Glad, Sad, Mad and Scared.



Exploration: Tests were carried out to find out people's association of colours and shapes with different emotions.



Development: Textures are added to evoke strong emotions, it provides people the desire to talk about how they feel.



Development: Many iterations of the objects were carried out to develop a set that is most suitable for use in the context of therapy.



Services & Social
Transformation

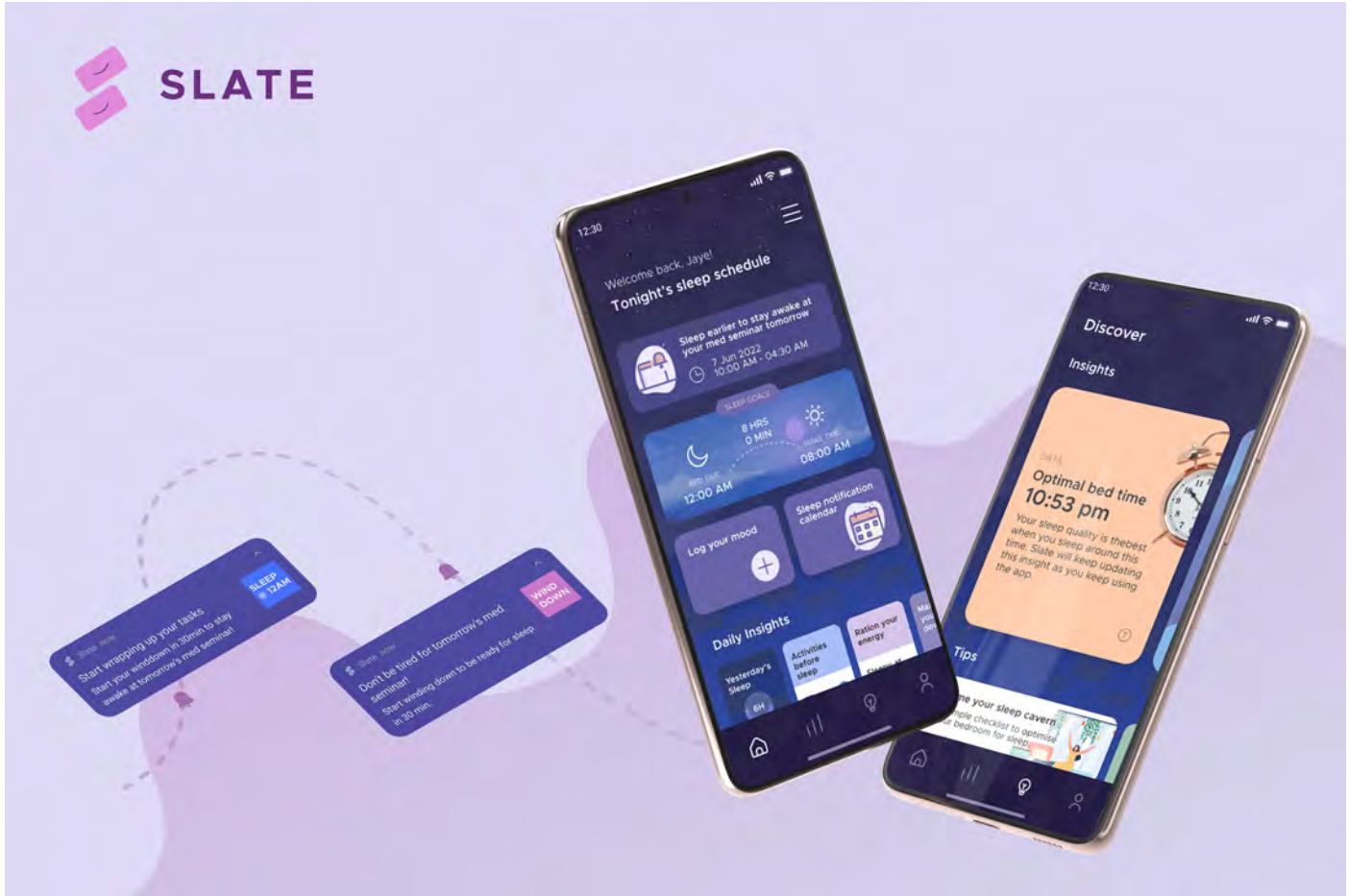


Tay Ying Qi

Ying Qi believes that design starts from the little problems we face in life. She often brings a systematic approach to design intuitive experiences and interactions while exploring the intersection between technology and design.



Portfolio



SLATE

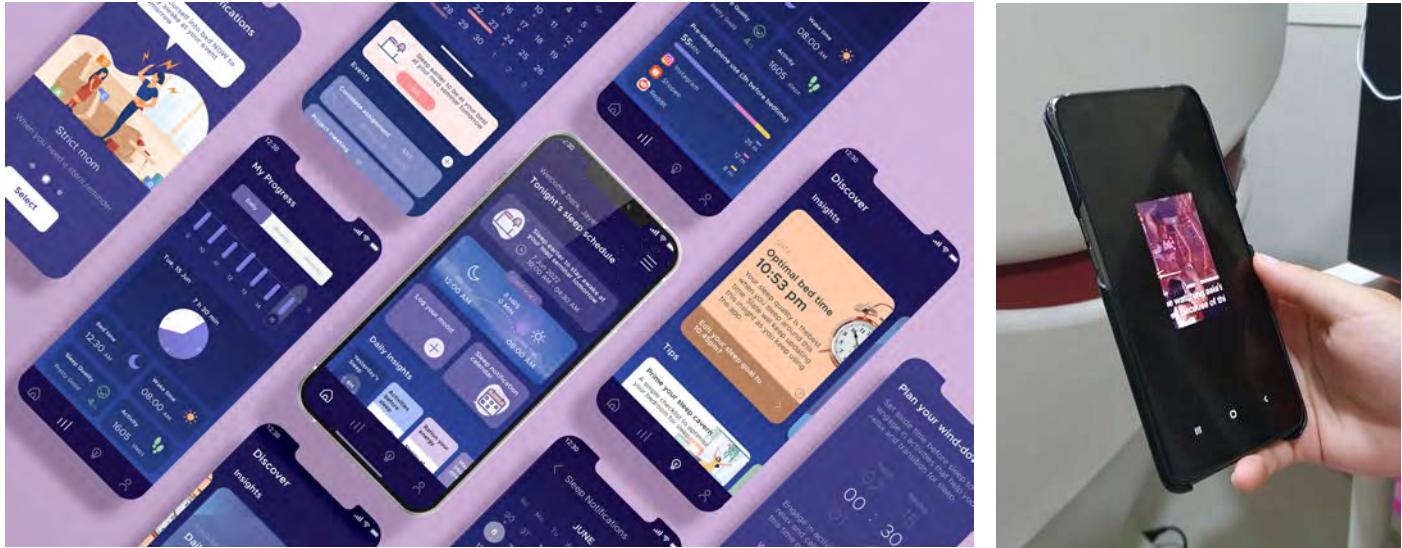
By making sleep notifications more relatable and impactful, Slate aims to increase the motivation to sleep through contextualised notifications, to highlight the benefits of sleep on future productivity, and a disruptive user interface, that helps young adults break away from addictive on-screen content before sleep. Data trends and insights on the users' sleep and phone use data are visualised, guiding them to discover their optimal sleep schedules and routines.

Under the supervision of Dr. Lee Jung-Joo.



System Architecture

Notifications are generated using contextualised benefits of sleep on future schedules through calendar sync, to encourage reflection on the effects of sleep on future productivity. Users can choose a preferred tone that is more impactful.



Key Insight

The time needed for wind-down differs from person-to-person, thus notifications and the disruptive UI had to align with the wind-down duration to ensure that the user has sufficient time to transit to a sleepy state by their target bed time.



Services & Social Transformation



Timothy Thian

Timothy has interest in motion design and is furthering his studies after graduation.



Portfolio



An exploration of AR through MRT Windows

Hidden gems come and go in plain sight as people commute on the MRT trains. This project explores the potential of using AR through MRT windows to reveal this unseen information to commuters as they take their daily MRT train rides. This exploratory project mainly focuses on the types of information shown and different graphics styles that can be used to show this information.

Under the supervision of R. Brian Stone.



Exploration with different graphic styles and quirky characters to bring interest to subject matter. The use of characters can imply context for whatever that is being shared.



Informtaion is shown in context and real-time, as compared to a google search that only shows the 6 digit postal code along with a red pin on a map.



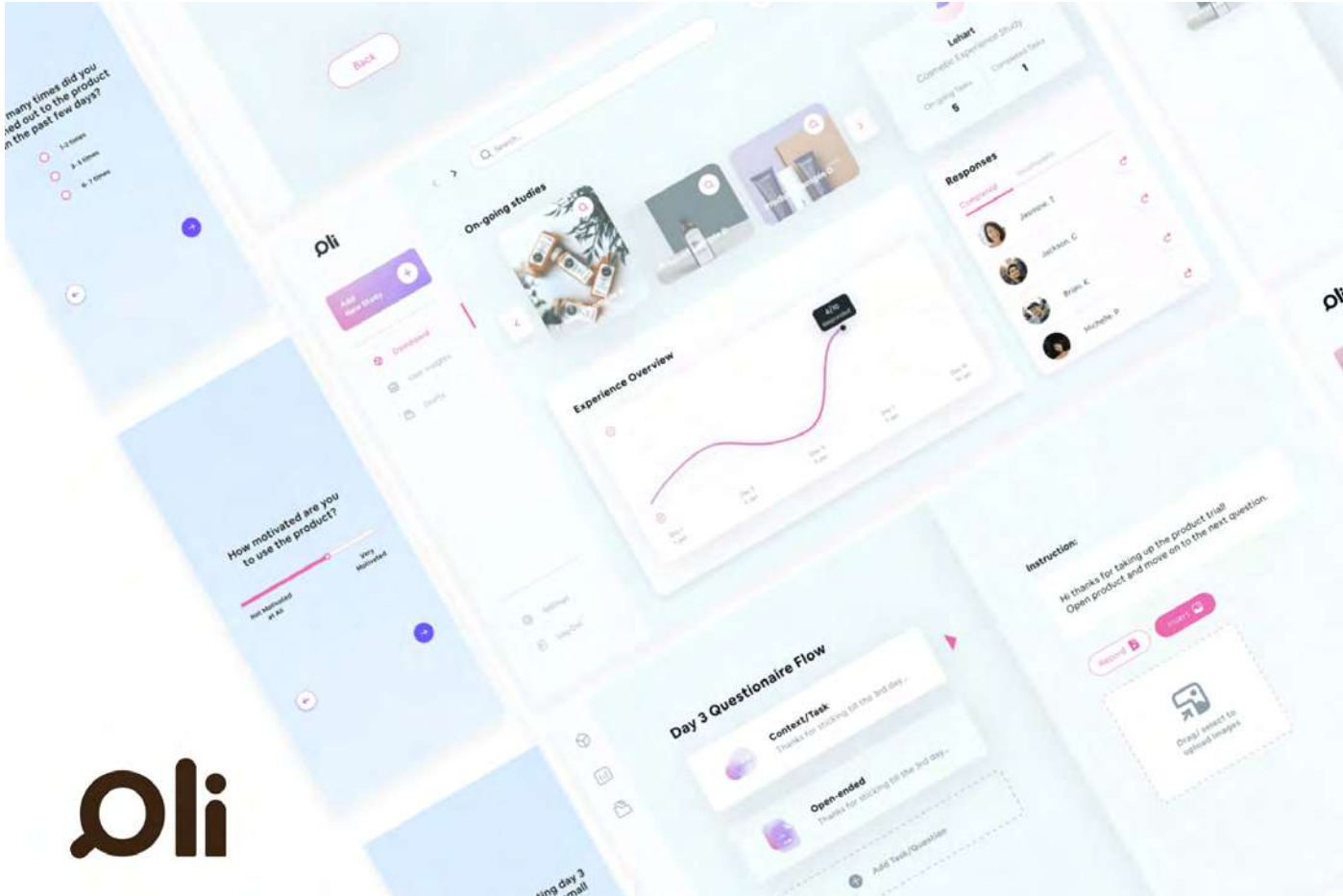


Xiao Jieying

Jieying sees design as a language to communicate complex technological problems, concepts and ideas. Her area of interest lies in creating user-centric products that speak to the user through delightful interactions.



Portfolio



Remote Product Study

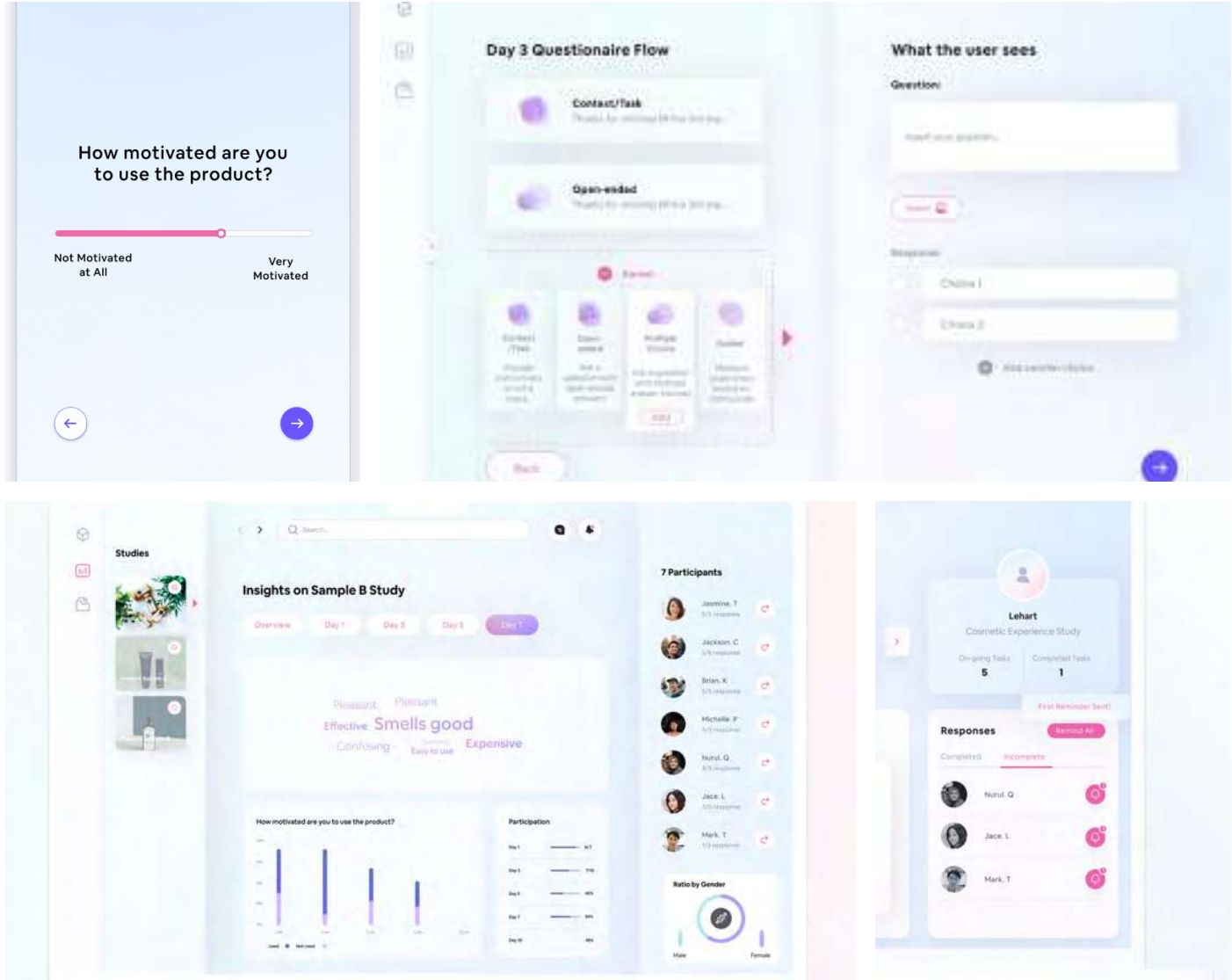
Home-based product studies allow users to experience products in their home, thereby inducing more natural responses. However, it is often difficult to motivate users to complete follow up surveys and observations tend to be limited due to the lack of first-hand observations.

Oli is an one stop platform designed to assit and streamline remote user studies of physical products. It allows users to have the freedom to experience products under a natural home environment while at the same time helps researchers to understand holistic user experiences remotely.

Under the supervision of Dr. Yen Ching-Chiuan.



Reminder and follow up tasks come in the form of text messages, and once the user completes a follow up session they get a small reward as a token of appreciation.



Oli also helps to make the feedback tracking process easier by allowing researchers to visualise real time feedback trends in the form of key words and graphs.





Yap Zi Ning

Often working with digital mediums, Zi Ning’s inquisitive nature drives her to create meaningful interactive experiences that weave fun with function. She especially enjoys drawing inspiration from visits to art and design events and illustrating in her free time.



Portfolio



Mental break

from prior meeting/work

Mental Preparation

for upcoming meeting

Passive



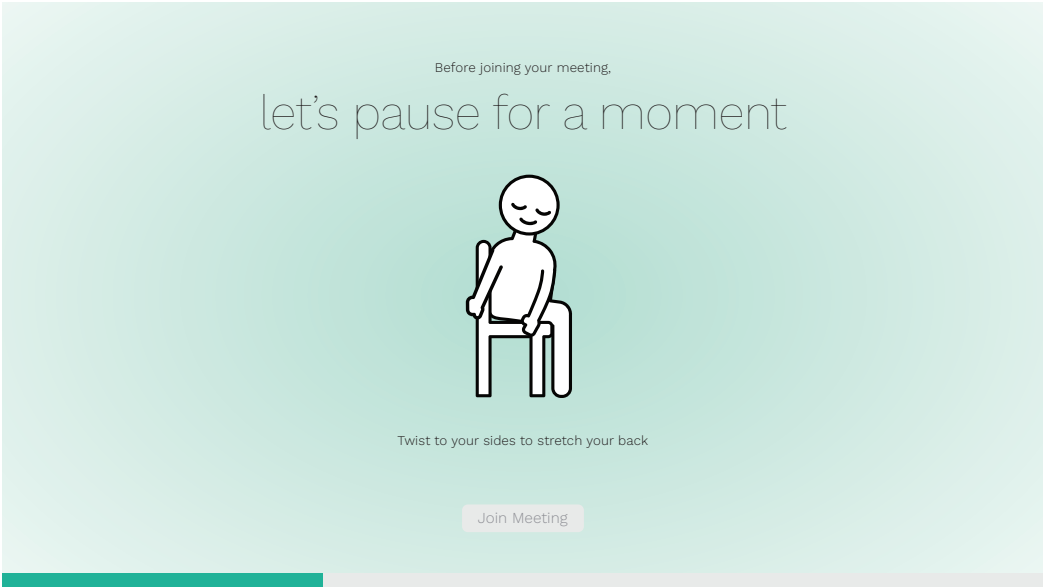
Active



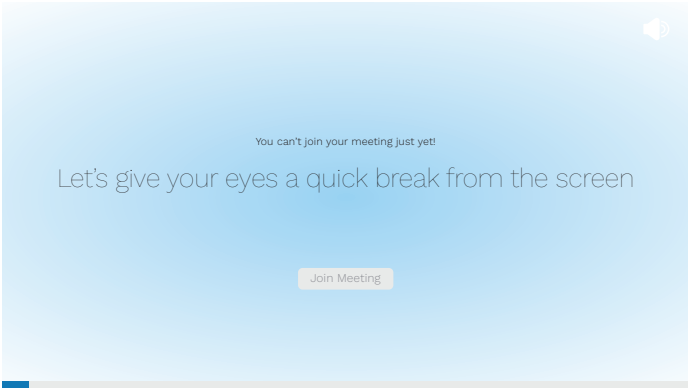
Transitions between remote meetings

The instantaneous nature of shuffling between back-to-back online meetings has given rise to an inability for users to catch their breaths. Consequently, users become stressed out and engage poorly during their meetings. This project features a series of 60-second pauses that users can passively or actively experience prior to joining their video conferences, allowing them to mentally transition between meetings, enhancing their focus and engagement.

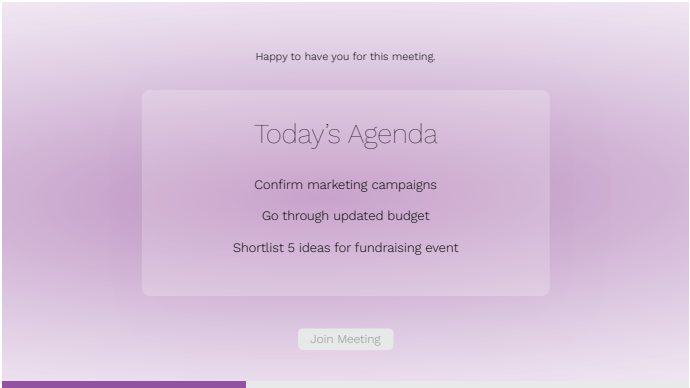
Under the supervision of Dr. Clement Zheng.



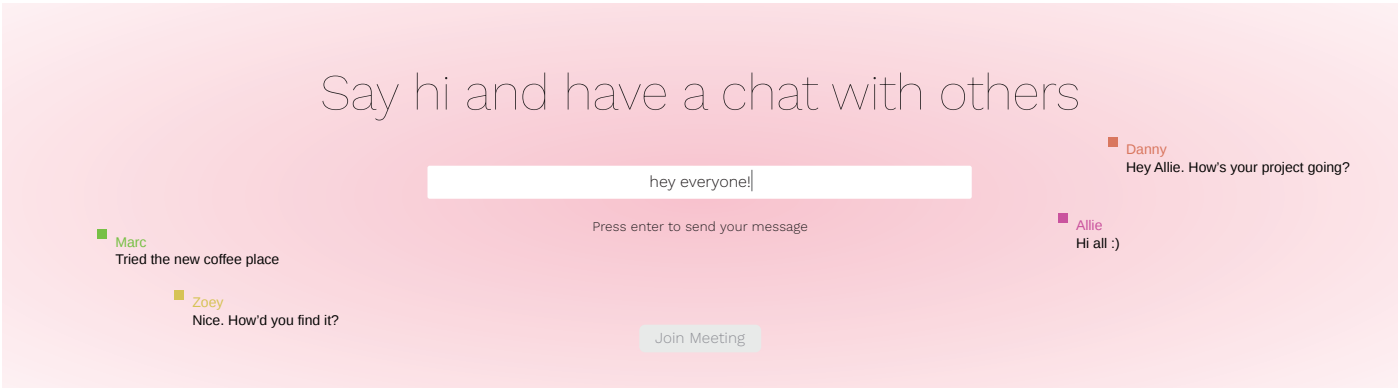
Active Mental Break: Users can follow along a series of stretches to reduce body tensions.



Passive Mental Break: Users can rest their eyes and minds through a quick screen break.



Passive Mental Preparation: Users can read through the meeting agenda to know what to expect.



Active Mental Preparation: Users can engage in casual conversations with other attendees to ease into the meeting.



Ye Jia Jie

With a curious mind and playful heart, Jia Jie likes to extract the unseen properties of interesting phenomena and reapply them into our interactions with everyday objects. Through the process of rethinking "how we do", he hopes to discover new meanings and perspectives in what we do.



Portfolio



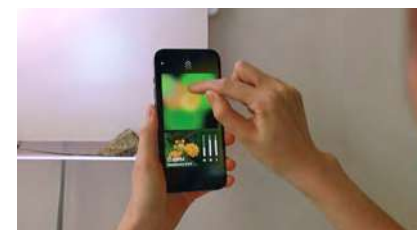
RELIVE

Relive rethinks the way we take pictures in nature. It is a concept that enables users to capture scenery together with its real-time weather information. The open-frame scene catcher puts our focus on the actual scene as opposed to live preview on screens, giving us the opportunity to enjoy the scene while being able to capture it. By using the colors, sunlight, wind and temperature in the scenery to generate a "living" scene, as the weather parameters influence the behaviour of the light on a canvas.

Under the supervision of Christophe Gaubert.



Concept illustration of capturing sceneries and have them relive in an abstract yet familiar form.



The process of capturing sceneries to the translation of captured data. All captured scenes would be synced and stored in the Relive app library for future rewind.



Innovation for
Industry



Ye Xiaoxuan

XX lives in a world that revolves around humour, irony, romance and rebellion. In her quest for the weird and wonderful, she adds a sparkling wit to her ideas that stays alluring but relatable.



Portfolio



Let Me Bury My Face In It

As screens become predominant forces for work and play in our daily lives, this project notes on the current social condition of how we see things. Associating with an object that captures a culture in time, the intended perception of these vases are only possible with the magic of technology today. It interrogates the blurring lines between the digital and physical world and reflects on how the way we think and behave are influenced by the omnipresence of screens today.

By paralleling the past and present, it builds upon the idea of representation and ornamentation as a means of capturing the gaze. It places it in constant relation to how we view the world in increasingly digital ways – presenting a new perspective on the phenomena of our time.

Under the supervision of Hans Tan.



Enchantment.com

Vivid, delicate, spick and span. Are you happy or sad?

Through object analysis and research into historical symbolism, the project not only generates meaning with iconic imagery but also produces meta-meaning through aligning content with form.

This induces a conversation on how intertwined our lives are with technology and if media is accurately represented and observed. Because sometimes, what you see is not what you get.

But objects are not absolute and neither is how we perceive them. So..... how do you see?



Seeing is (not) believing

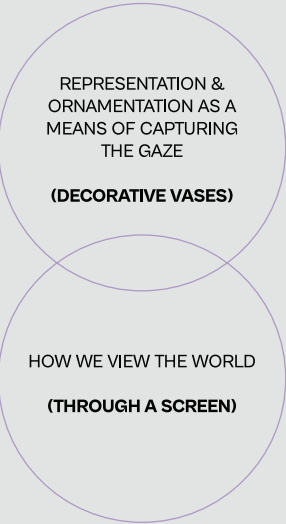
Using the camera app on your smartphones in **negative** mode, you can view the "originals".

The three vases depict nature, blessings, and celebration that portray the ideals with typical views of human desires and values. When looking through the filter, it exposes the gap between the desired reality vs. perceived reality.

These vases become allegories of consciousness, perception and authenticity.



Ways of Observation



Design Futures & Critical Inquiry



Yeo Jun Peng

Jun Peng excels at the intersection of Business, Design and Technology. Driven by his entrepreneurial aspirations, he has developed strong business acumen and amassed a comprehensive set of technical skills that have made him a valuable member of any team he has been a part of.



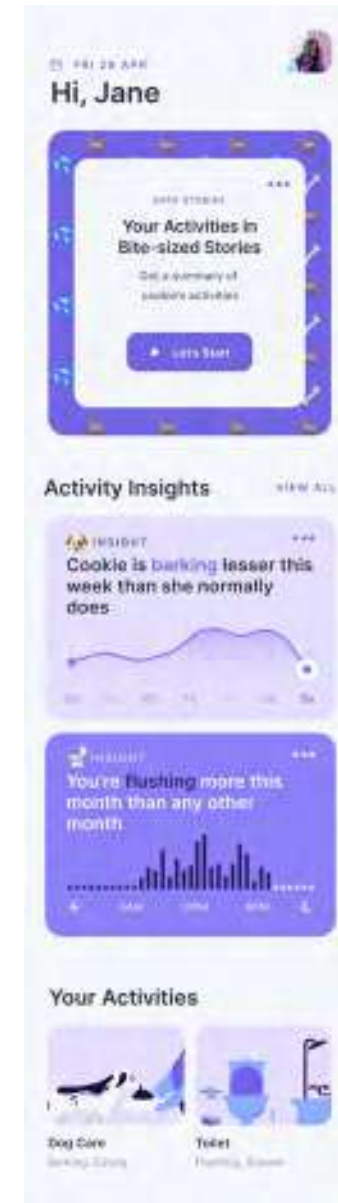
Portfolio



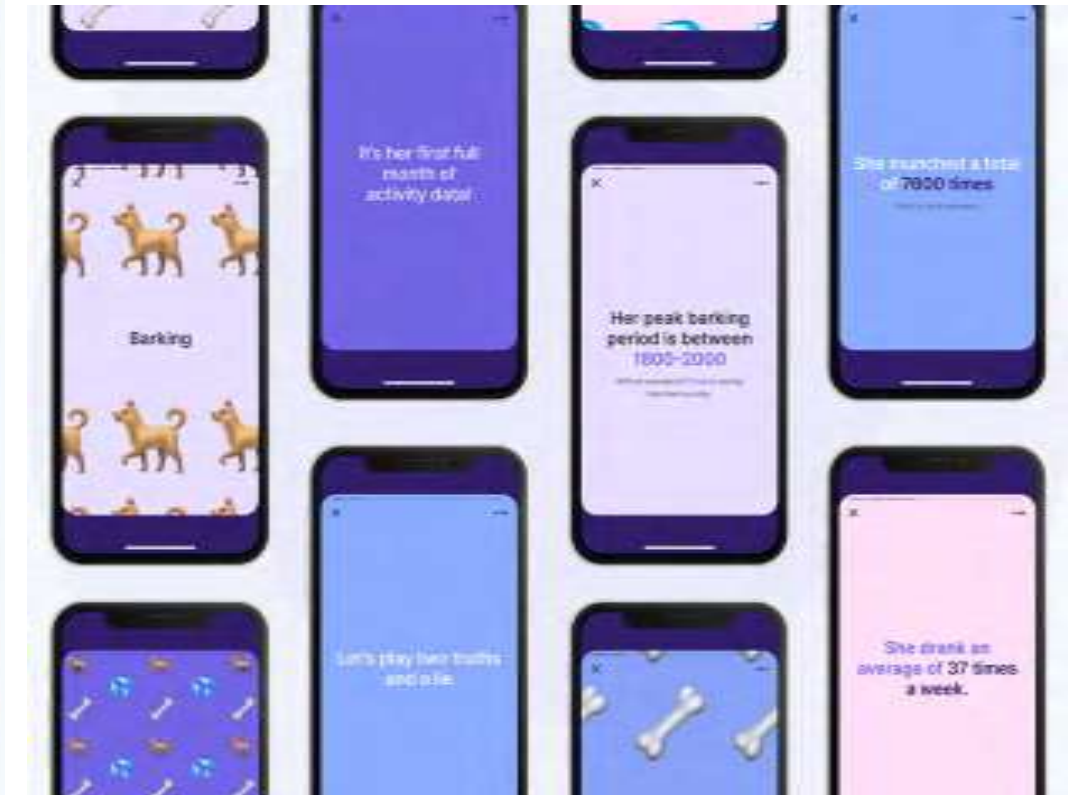
Wave

Wave is an AI-powered activity tracker right on your smartphone. Through the use of sound, Wave enables the everyday user to seamlessly track their desired activity around them. These captured data are then visualised in a simple yet intuitive way to help users make sense of their activity data. Wave has been deployed to track a wide range of activities from coughing, to pet activity, to toilet consumption – allowing users to understand their activities on another level.

Under the supervision of Dr. Lee Jung-Joo.



Data Visualisation: Users are provided with three different ways to visualise their collected activity data, displayed in order of simplicity - Data Stories (Top), Activity Insights (Middle) and Activity Charts (Bottom).



Data Stories: Autogenerated from user activity data, the stories are in bite-sized, story-like interface to allow for simple data visualisation across all kinds of data tracked.



Services & Social
Transformation



Yong Zhen Zhou

Zhen Zhou believes in the importance of fun in life's interactions and is inspired by things weird and quirky, round and cat. Finding opportunities in natural contexts, he designs works that strive to create experiences that grant joy and lightheartedness in our everyday.



Portfolio



An alternative role of controls

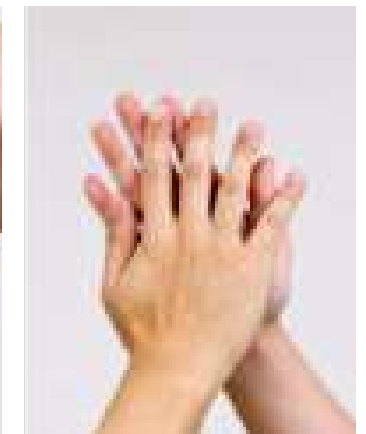
When thinking about video game experiences, the controller does not normally come to mind. If digital experiences are a mountain, conventional controllers are elevators to reach the peak. However you could also drive, hike, or take a cable car up the mountain, which are experiences in themselves. This project investigates how controls affect our relationship with game worlds and hence our experiences with them, through the space of alternative control games. Even for a single interaction, such as jumping, the way we input that jump in physical reality can drastically change the meanings it can have. This space is an opportunity to design new game experiences around controllers.

«Press What? to Jump» is the expression of this exploration, a game about swapping between different alternative controllers for the same action. Through this the player samples the experience of designing alternative controls and understanding the nuances that each controller gives the same interaction.

Under the supervision of Dr. Clement Zheng.



The 2 player game is a simple race where players only jump. They start with using the keyboard, but at every checkpoint the way they must input «jump» changes between the different controllers.

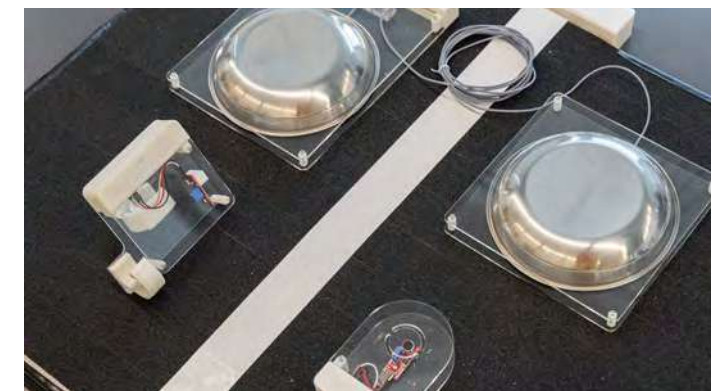


The 4 alternative inputs, jump, shout, pump, and hi-five. Each attempt to stretch the relationship between player and game differently:

If you jump and the character jumps, are you the character?

What happens when social vulnerability, physical effort, or a player's socio-tangible reality are included as part of a game through the controls?

These are questions raised by controls and «Press What? to Jump» provides a space for designers to explore answers through their experiences themselves.



Design Futures & Critical Inquiry

Post Graduates Research

The Ph.D (ID) and Master of Arts (ID) are full-time graduate programmes by research that serve to advance the study of design. Postgraduate research at NUS DID embraces various areas of design research, across Creative Interaction Design, Design for Healthcare and Medicine, Service Design, and Experience Design. The students are immersed in their thesis projects under the guidance of advisors who are domain experts, and through peer-to-peer support. Students' thesis projects employ various modes of design research, such as research-through-design that uses the design process and artefacts for intellectual inquiry and research-into- design that studies design as a phenomenon.

For more information:
<https://cde.nus.edu.sg/did/programme/postgraduate/>

Chen Yang



SSpoon | A shape-changing spoon that optimizes bite size for eating rate regulation



What is the motivation of your topic? What was the inspiration?

Rapid eating is linked to numerous health problems, such as obesity and gastritis. Specially, by controlling the eating rate, you can potentially prevent obesity. In this project, we envision that an eating spoon can not only be used as a static food serving tool but can play a more active role in human-food interaction.

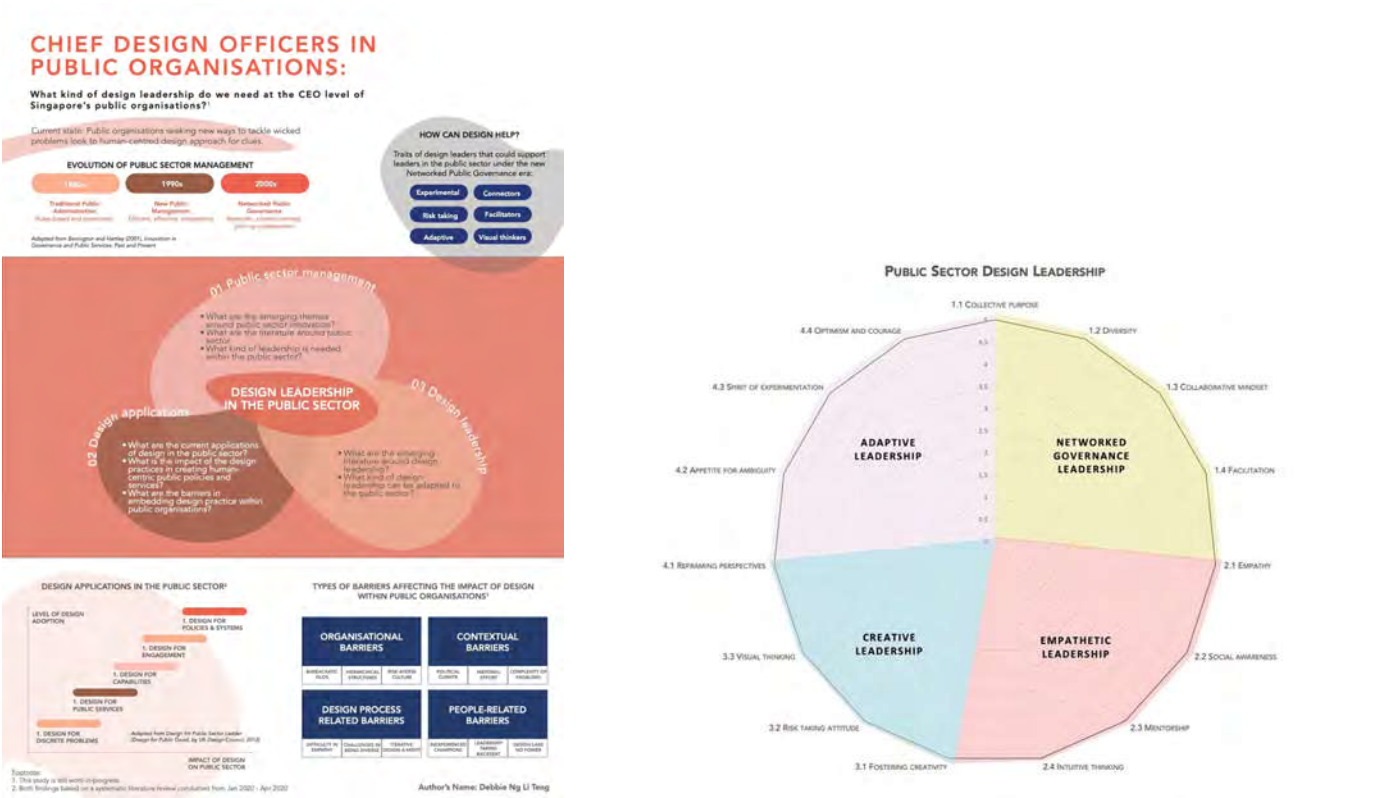
What impact do you hope to bring through your research?

By introducing the shape-changing features to the spoon, it can directly use its physical deformation to intervene in the eating behavior and create new opportunities for interaction and tangible interface in the eating context.

What is one memorable moment during your PhD research journey you might want to share?

Empirical investigation indicated that using SSpoon, participants' eating rate and overall food intake decreased by 13.7% and 4.4% respectively, without compromising user appetite and eating pleasure. Hence, it would be worthwhile to examine whether certain reductions in energy intake can be continuously and accumulatively used to reduce body weight and, thereby, combat overweight and obesity.

Ng Li Teng Debbie



Identifying design leadership dimensions in Singapore Public Organisations



What is the motivation of your topic? What was the inspiration?

As one of the earliest design practitioners in the public sector in Singapore, I have experienced how design has a made a profound impact and longevity when led by leaders who understand design. In contrast, a paucity of leaders' sponsorship almost always leads to a natural lapse of design.

The purpose of this study is to explore an emerging phenomenon of design leadership in the public sector that could better fit to the public sector ethos. If public sector leaders could extract the learnings from their private sector 'counterparts', it could potentially maximise design potential in the public sector. Essentially, the prominence of design utilisation across public organisations suggested a futile ground for researching the leadership of design practices in these public entities. Yet, the role and actions of the leaders remain vague.

What impact do you hope to bring through your research?

Leaders play a critical role in shaping the application and adoption of design in public sector organisations. The extent to which leaders need to understand design or be trained in design is unclear. As more and more governments use human-centred design approaches to tackle complex and gridlocked problems within the public sector, what kinds of design-inspired leadership behaviours are required? This research aims to answer that by exploring a 'Public sector Design Leadership' (PSDL) framework as a working model to identify design leadership behaviours and traits in four dimensions 1) Networked governance leadership; 2) Empathetic leadership; 3) Creative leadership; and 4) Adaptive leadership.

What is one memorable moment during your PhD research journey you might want to share?

One memorable moment is presenting the findings of design leadership pertaining to my first case study to the senior management. The questions they raised, and interests on developing the leadership behaviours and mindsets in design was heartening. The meeting overran because they have so many questions on it. They had hope to continue to develop training programmes to grow the design leadership behaviours amongst their leaders.

Alvin Chia

Debunking Human-Centered Design (HCD) Practices in the Banking Industry: Case studies from Singapore

↓

What is the motivation of your topic? What was the inspiration?
My research is motivated by the daily occurrences I observed in the banking industry. Over the past decade, I have seen seismic shifts taking place. For example, there were notable successes by adopting HCD that have propelled banks to record earnings, but there were often no mentions on how and who made this happen. I hope that with my research, greater attention could be given to the non-designers who stepped out of their comfort zone to make this all happen.

What impact do you hope to bring through your research?
I hope that my work could benefit three different groups of potential readers. Firstly, the design research community could benefit from the three empirically grounded case studies to better understand how HCD has been used in the banking industry in Asia, as most of the current cases are based in Europe or the United States. Secondly, recommendations such as the ideal model of engagement between designers and non-designers could be helpful for banks that are starting to adopt HCD. These banks can also role-model themselves after the best practices seen in the case studies. Lastly, the non-designers starting their HCD adoption journey can also apply some of the tangible recommendations to their daily work, even outside of the banking industry.

What is one memorable moment during your PhD research journey you might want to share?
A recent memorable moment would be the IASDR (International Association of Societies of Design Research) conference held in December 2021. Unfortunately, we could not attend the event in person due to the pandemic, but that did not stop us from having lively exchanges on my research topics. I had the chance to share my opinions with fellow researchers and have gained different perspectives to help me better focus on the subsequent phases of work.



Han Bo

Inlay Circuits | An Accessible Circuits Fabrication Method Based on Laser Cutter

↓

What is the motivation of your topic? What was the inspiration?
Digital fabrication tools like the laser cutter and 3D printer have benefited designers and makers to fabricate their own designs and objects in past decades. My motivation is to extend the benefits of digital fabrication and explore novel fabrication methods of interactive objects with embedded circuits.

What impact do you hope to bring through your research?
Propose a novel digital fabrication principle of embedded circuits and interactive objects with accessible tools and material.

What is one memorable moment during your PhD research journey you might want to share?
At the monthly research roundtable, every postgraduate student has to present their recent research progress and get critiques from peers and Professors. By reflecting on the reviewer's questions, I can find out which part of my research needs to be improved and how to present my research in a good flow



Liu Xin

Tribomaker | Triboelectric Interaction Sensing with 3D Physical Interfaces

↓

What is the motivation of your topic? What was the inspiration?
Building TUIs remains a challenging electro-mechanical task for many designers.

What impact do you hope to bring through your research?
I hope to develop a straightforward technique for designers to fabricate tangible interactive sensing based on the working principle of TENG. Designers do not need to contend with the complicated puzzles of electronics.

What is one memorable moment during your PhD research journey you might want to share?
When I first learned about TENG, it was a new field. I need to explore it from the fundamental knowledge, and after a few months, I joined a TENG platform for undergraduate design students as a TA under the support of Prof. Yen. Changing from a knowledge importer to an exporter is meaningful for me.



Design Incubation Centre

The Design Incubation Centre (DIC) takes part in the emergence of a new generation of Singapore Designers by helping the NUS design talents to develop and achieve their ideas through the incubation of their projects, until production and commercialisation. By also developing research and probe projects, DIC contributes to identifying the new industrial, social and cultural territories where Design will tend and take action in the coming decades. Thus, DIC has the mission to feed, inspire, support, reveal and promote the students and young designers from the Division of Industrial Design by actively participating in its pedagogy.

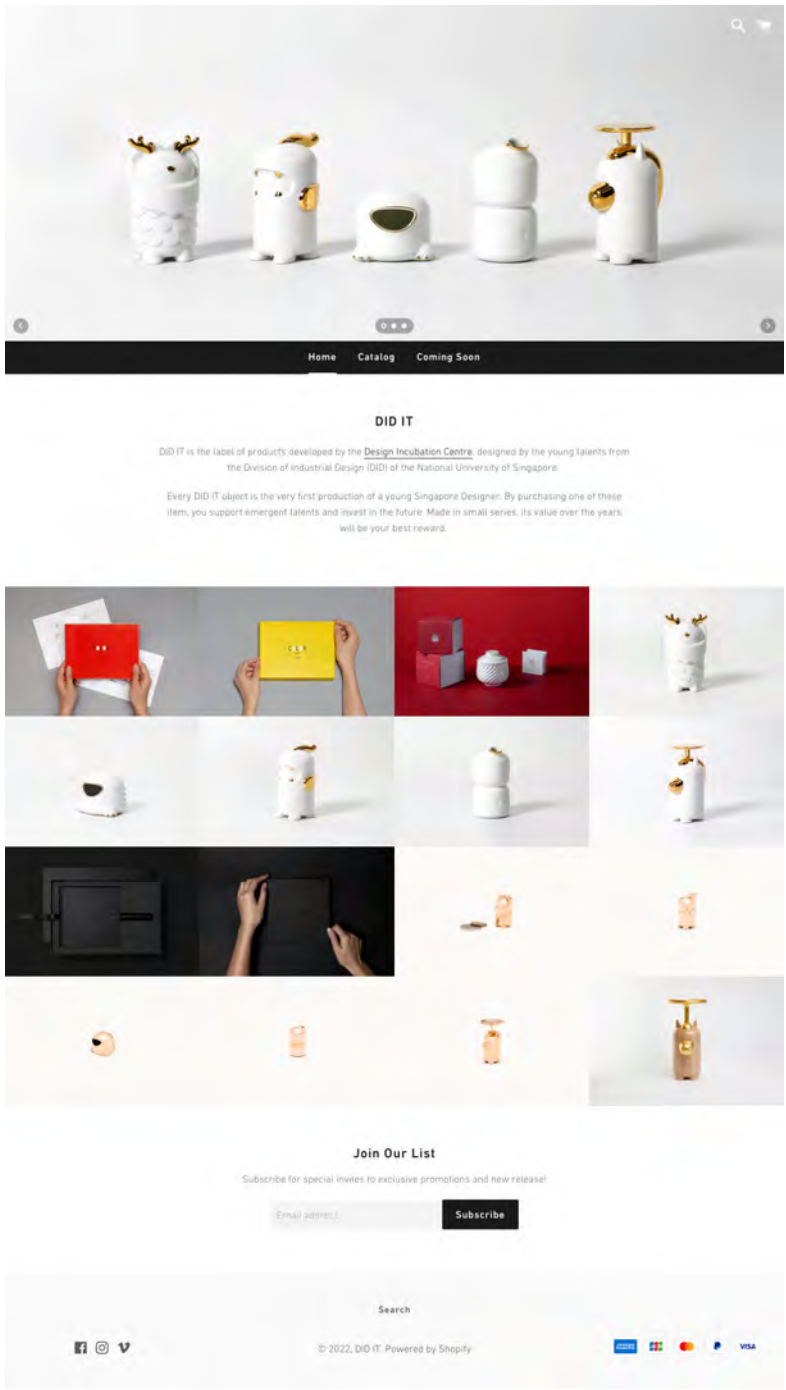


Permanent Team

Christophe Gaubert (Director),
Yuta Nakayama (Lead Design Engineer),
Willie Tay (Lead Designer),
Poh Yun Ru (Designer),
Yeo Wan Jun (Business Development Manager),
Rachel Chee (Senior Executive),
Colin Thiam (Lab Specialist),
Chen Chee Keong (Lab Specialist),
Tan Yi Xiang (Lab Specialist),
Ricky Ho (Graphic Designer)

Designers under incubation (2022 batch)

Cynthia Chan
Tan Wei Jing



DID.IT Online Store

DID.IT is the label for the products resulting from the incubation program. Three more incubated products were added to the online store since its debut last year.



↑ **Furmidable**

Furmidable questions the fine line between nature and nurture by exploring the potential of dog fur as a renewable and sustainable resource through a collection of pelts.

Cynthia Chan



← **MBI Microscope**

Collaboration with the NUS MechanoBiology Institute for the design of a new generation of Sospim microscope, giving a shape to breakthrough patents in the domain of imagery of living micro-organs.



↑ **In Praise Of Flowers**

In Praise of Flowers is a series of vessels dedicated to nine cut flowers by paying tribute to the last moments of life, by exploring their shapes, stories, and symbols.

Tan Wei Jing



Rewind

Designed to evoke memories, Rewind uses a motion-tracking tool that guides seniors with dementia in re-enacting familiar gestures. These actions are then reflected as audio-visual feedback on a paired device that triggers recollection.

This research project has won the 2022 International Lexus Design Award and received a development grant.

Poh Yun Ru



Avian

The Avian collection is inspired by elegance of birds and the whimsical fantasy. The table lamp with a white exterior and gradient colour interior, creating an eye-catching yet subtle look.

Lu Chu Wen



COLOR

The COLOR program was launched on DID.IT Online Store. It aims to educate children about colours with special learning probes from different perspectives. The product also targets local Elementary institutions for adoption.

Stacey Yip



Wei!

The first tableware of Wei! is modelled after the Teochew-style Bak Kut Teh, now sold on DID.IT Online Store. A collaboration with a local restaurant is ongoing for customising a tableware for their signature dish.

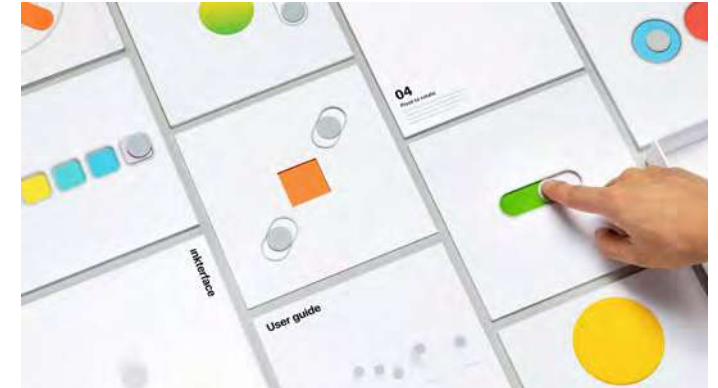
Sheryl Ang



Inkterface

Inkterface is a series of low-tech interactive tiles inspired by multi-touch gestures on digital UI. Reimagining a 3D representation of visuals that only exist in the digital realm, it sought to explore ways to recreate the familiar and intuitive «feelings» with a little surprise.

Ye Jia Jie



Interactive Materials Lab

The Team

Dr. Clement Zheng (Principal Investigator),

Han Bo (PhD Student Researcher),

Liu Xin (PhD Student Researcher),

Yong Zhen Zhou (Undergraduate Student Researcher),

Vivien Tan (Undergraduate Student Researcher),

Prasanth Kumaar Kunasilan (Undergraduate Student Researcher),

Luke Goh (Undergraduate Student Researcher)

We research material systems to support interaction and experience design.

Our practice blends designerly exploration and technical experiments with rigorous making. We specialize in building interactive systems by leveraging everyday materials and fabrication processes. This often yields new approaches and tools for constructing tangible interfaces.

The Interactive Materials Lab is led by Clement Zheng. We are housed within the Division of Industrial Design at the National University of Singapore.

Find us at interactive-materials.github.io

Investigating Everyday Haptics

Haptics was the research focus of the lab this past season. Specifically, we were interested to explore materials and objects around us through the lens of haptics; and direct our findings towards constructing devices and interfaces for new interactive experiences.



↑ Shape Haptics

We developed Shape Haptics, a new approach for designers to rapidly design and fabricate passive force feedback mechanisms for physical interfaces. Passive haptic mechanisms are found in objects and devices all around us—and they are challenging to design. Shape Haptics abstracts and broadens the expression of this class of haptic mechanisms. Shape Haptics mechanisms consist of 2D laser cut parts fabricated from POM plastic. They comprise a compliant spring structure that engages with a sliding profile during interaction. By shaping the sliding profile, designers can easily customize the haptic force feedback delivered by the mechanism. We demonstrate how Shape Haptics can be applied to a variety of applications, including changing the haptics of existing objects and interfaces, as well as building new interactive systems.

"Shape-Haptics: Planar & Passive Force Feedback Mechanisms for Physical Interfaces" will be published in the proceedings of CHI 2022, the premier venue for Human-Computer Interaction research.



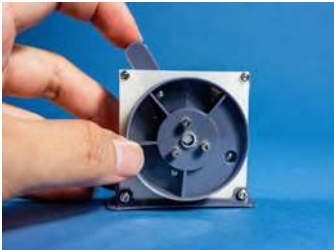
↑ Pastry Panic

Leveraging Shape Haptics' ability to create satisfying haptic feedback, we developed a game called Pastry Panic (with cat). The novel game controller features 5 different physical inputs for baking. The haptics of each input is carefully designed to correspond to its action (such as kneading dough or shaking sprinkles). Through the course of the game incomplete pastries descend along two conveyor belts, upon which players must execute the correct sequence of processes to create the finished product. The recipe for each pastry is documented in a physical recipe book that players must browse.

Pastry Panic (with cat) was presented at Game Developers' Conference 2022 under alt.ctrl.GDC, and won the Audience Award for that category.

↓ Design Platform: Haptic Everyday

Touch is essential to our interactions with the world around us. By extension, haptics (def: concerning the sense of touch) should be an important consideration for the design of physical interactive products, devices, and systems. To address this, we ran a design platform with undergraduate industrial design students. In this platform, haptics as a design consideration takes center stage. Design students explored materials through the lens of haptics. From this exploration, they defined new material systems for haptics and systematically characterized the haptic behavior of these systems. They then designed and built real world applications on top of the new haptic systems they developed.



Achievements

Achievements - student



FYSIO: The Future of Lifestyle Rehabilitation

Honourable Mention (Top 3 in Category), Epidemic Urbanism Initiative

Loo Ziling, Nathaniel Ng, Huo Yujia & Jaslynn Ho



ILOOMINATION

1st Runner Up of ILOOMINATION : A design challenge to reimagine Singapore's public toilets by National Environment Agency

Ye Xiaoxuan



S+ Watercooler

2021 Taiwan International Student Design Competition Product Design (Honorable Mention Prize)

Red Dot Award: Design Concept 2021

Ho Yi Jing

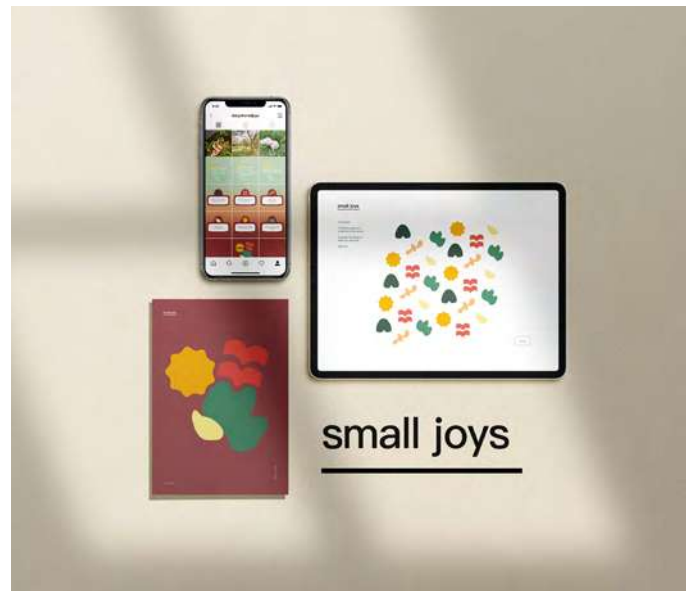


Eclipur

Red Dot Award: Design Concept 2021

Ng Xian En David

Achievements - student



small joys

Singapore Creator Awards 2021
(Aspiring Designer) - Merit

Nysha Tan



Opal

Singapore Creator Awards 2021 - Gold

Ho Yi Jing, Edwind Tan, Gui Xixian & John Marie Tan

Achievements - staff



Rewind

iF Design Award 2022

Lexus Design Award 2022, Grand Prix Winner

Poh Yun Ru



Shine

DFA Design for Asia Award 2021 - Bronze Award

Good Design Award 2021

Golden Pin Design Award 2021

iF Design Award 2022

Ng Zi Ning



Looft

Design Anthology
Award 2021 - Textiles

Sheryl Teng



Sheryl Teng

DesignSingapore
Scholar 2021. She
is currently doing
the Master of Arts
in Textiles, Royal
College of Art in
London, United
Kingdom.



Aline

DFA Design for Asia Award 2021 -
Silver Award

Red Dot Design Award: Product
Design 2021

iF Design Award 2022

Willie Tay & Christophe Gaubert

Staff Index

Staff index - permanent faculty



←- **Dr. Christian Boucharenc**

Head & Associate Professor

In his academic and professional career as an architect and designer, Prof Boucharenc has immersed successively in French, Finnish, Danish, Japanese and Singaporean culture. His main teaching expertise is in Design Fundamentals, based on three teaching principles, namely, parameter controls (design variables and constraints, economy of means and time), descriptive dimensions (syntactic, pragmatic and semantic), and finally intuitive approach (no copying, no fixed rules and no imposed forms).



←- **Dr. Lee Jung-Joo**

Deputy Head (Research) & Assistant Professor

To JJ, design is a game changer. With her experiences in service design, she explores how design can bring human-centred transformation to society, business and public policy. She engages in students and industries in this process to co-create methods and impacts for design-driven transformation. JJ believes an increasingly important role of designer is a "creative facilitator" who translates people's needs and experiences and facilitates creative collaboration among various disciplines.



←- **Hans Tan**

Associate Professor

Hans believes that everyone is creative, and he cannot draw. As a practicing designer, his work tiptoes on the boundaries between design, craft and art, making use of utility as a pretext for visual discourse by disrupting archetypes, materials and fabrication processes. As an educator, his penchant for pedagogy centres on the significance of "deforming" as a starting point for imaginative thinking, exercised at the intersection of thought exploration and hands-on experimentation.



←- **Song Kee Hong**

Deputy Head (Admin & Finance) & Associate Professor

Kee Hong is a practicing educator focusing on simplifying interaction complexity between people & technology; relevant in our increasingly service and AI driven environment. His industry experience in consulting and corporate design organizations spans across diverse sectors; from consumer electronics to mission-critical domains in healthcare, industrial and security systems. Kee Hong's multi-disciplinary work has received over twenty international design awards including iF, G-Mark and Red Dot.



←- **Dr. Yen Ching-Chiuan**

Associate Professor

Ching Chiuan is Dean's Chair, Co-Director of Keio-NUS CUTE Center, and Deputy Director of AM.NUS. He possesses an excellent ability to combine theoretical thinking and design practise in design education and research. His interests lie in methodologies for design, and he champions a "pluralistic dimension" of design study and research, in particular, design for healthcare. He has collaborated with many companies, including BMW Designwork USA, Coca-Cola, DELL, Tupperware, VISA, etc.



←- **Christophe Gaubert**

Associate Professor

Christophe Gaubert is a French Product Designer, seeking for elegance in everything or everyone.

Developing a global approach to Design, his teaching leads the students to fully explore the problematics to identify impactful Design opportunities, more than just solving short-term problems. He believes in Design as a new kind of philosophy for training visionary people, designers able to analyse and anticipate societal, cultural and technological mutations.

Staff index - permanent faculty



Patrick Chia

Associate Professor

Patrick believes that designed objects and experiences are shaped through a designer's sensitivity to human nature and people's instincts, creating a conversation between user, design and designer. Being the founding director of Singapore's first dedicated industrial design research laboratory, Patrick has ushered in multiple generations of designers, and has co-authored concepts fundamental to design teaching today. As an educator, he believes in sculpting talent through retrospective learning.



R. Brian Stone

Associate Professor

Brian's goal as an educator is the growth and long-term success of students. He believes that teaching is about sharing, building, and exploring. His passion in the classroom is a result of his genuine love for communication and design. He promotes dialogue, play, interaction, empowerment and discovery. He believes that budding designers should be curious, resilient, empathetic, collaborative, and diverse– enabling them to develop novel ideas and innovative solutions for an intended audience.



Donn Koh

Senior Lecturer

Donn Koh is the inventor of the bend-and-snap mechanism of the Microsoft Arc Touch Mouse, and the lead industrial designer of the Air+ Smart Mask and the HTC Evo 4G. He co-founded the acclaimed STUCK Design. As a distinguished practitioner with the ability to teach, Donn wins numerous teaching awards alongside his design awards. His twin passions are to create imaginative solutions and to help designers become extraordinarily creative and effective.



Dr. Clement Zheng

Assistant Professor

Clement is a design technologist whose teaching and research focuses on computational design, digital fabrication, and tangible interactions. He firmly believes in learning through making and research through design. His explorations often lead to new tools and techniques that facilitate designing and building functional interactive systems.

When he is not at work (and sometimes when he is) he enjoys playing and over-analyzing video games.

Staff index - part-time faculty



←- **Ash Y.S. Yeo**

Seeing well the end, as essentials invisible to the eye, hacking heuristics as design's always in milieu movement, less as objects, not under-esteeming anything, anyone, not even self, always dignifying 'betters." Future's adage: Going tacit gives choices we never knew we had. Celebrate the unseen for allegorical values, as it blends with the pure & meaningful: hunting for the axiomatic lapis philosophorum. Know him as lightly treading, in alumni's forgettable "ashperiences."



←- **Grace Tan**

Grace Tan began her practice in 2003 under kwodrent. Led by a hands-on and research-based approach, her interest in materials and construction culminated in works that span across different mediums and disciplines. She was conferred the President's Design Award in 2012 and the Young Artist Award in 2013. Grace firmly believes in the symbiotic relationship between her role as a practitioner and educator while she strives to engage her students as unique individuals.



←- **Lee Tze Ming**

Bringing business perspective coupled with broad domain knowledge via active innovation consulting practice, Tze fluidly bridges conceptual innovation with market pragmatism. His teaching emphasises doing in order to think. To experience in order to discern and make better design decisions yourself. Wynton Marsalis said it better: "Don't adopt my prejudices; develop your own."



←- **Olivia Lee**

Olivia Lee leads an award-winning multi-disciplinary design practice. Her nuanced and narrative-driven approach is agile and distinct; attracting diverse commissions from global clients such as Hermès, Samsung and Wallpaper* Handmade across sectors as diverse as luxury, technology and craftsmanship. Olivia encourages a spirit of adaptivity and empathy. She believes that design education must foster a spirit of auto-didacticism as agile-thinking is key to empowering our future creative leaders.



←- **Tiffany Loy**

Tiffany Loy is a woven textiles specialist who graduated from the Royal College of Art, on a DesignSingapore Scholarship. Since the founding of her eponymous studio in 2014, her experimental works have been exhibited internationally, at venues such as Singapore Art Museum and La Triennale di Milano. Loy's background in product and textile design has led to her unique approach in creating materials with minute details, while keeping in mind their overall impact in the larger, spatial context.



←- **Wendy Chua**

A seasonal nomad travelling between Singapore and Buenos Aires, Wendy Chua is a multidisciplinary designer, curator and educator. Through her practice Forest & Whale, she designs products and systems with longevity in mind and envisages future narratives for museums. Her work covers a spectrum that encompasses social design for community engagement and participatory theatre, creative pedagogies for early childhood education, and curatorial research.



←- **Winston Chai**

Design is not just about finding solutions to problems. The power (and thrill) of good design lies in finding new opportunities, reimagining the status quo while making appropriate connections and relevant relationships. Winston believes in reigniting the imaginative spirit in students as well as honing storytelling skills, as part of the design process, so that novel designs created can connect and relate well with their intended audience.



←- **Yuh-Hunn Wai**

With teaching, Hunn Wai brings his insights and experience from his practice Lanzavecchia + Wai, an award-winning Italian-Singaporean industrial design studio who has worked with important brands like Zanotta, Hermès & Capitaland. Having spent a decade as an educator, Hunn skilfully coaches students to flesh out their personal philosophies of design, to be refined by rigorous research & prototyping, and manifesting them into impactful formats. "It can be fantastic, as long as it makes sense".

Staff index

Permanent Faculty

Dr. Christian Gilles Boucharenc
Head & Associate Professor

Song Kee Hong
Deputy Head (Admin & Finance)
& Associate Professor

Hans Tan
Associate Professor

Dr. Lee Jung-Joo
Deputy Head (Research) &
Assistant Professor

Dr. Yen Ching-Chiuan
Associate Professor

Patrick Chia
Associate Professor

R. Brian Stone
Associate Professor

Christophe Gaubert
Associate Professor

Donn Koh
Senior Lecturer

Dr. Clement Zheng
Assistant Professor

Winnie Chin
Assistant Senior Manager

Danny Lim
Assistant Senior Manager

Nur Nadirah Binte Haron
Assistant Manager

Design Incubation
Centre [DIC]

Christophe Gaubert
Director

Yuta Nakayama
Lead Design Engineer

Willie Tay
Lead Designer

Poh Yun Ru
Designer

Yeo Wan Jun
Business Development Manager

Rachel Chee
Senior Executive

Colin Thiam
Lab Specialist

Chen Chee Keong
Lab Specialist

Tan Yi Xiang
Lab Specialist

Ricky Ho
Graphic Designer

Part-time Faculty

Ash Y.S. Yeo
Kwok Wai-Chiau
Celia Wong
Jason Ong
Vincent Leow
Yong Jieyu

Timothy Hoo
Akbar Yunus
Sheryl Teng
Kevin Chiam
Jin Suhuan
Benjamin Xue

Design Thinking &
Creating Narrative
Tutors

Nathaniel Aaron Tan Le Yi
Ng Zi Ning
Abdul Rashid Bin Adnan
Tay En Qi Angela
Chen Cheng
Xavier Teo Xuan Kai
Thong Yanling Adeline

Zhang Chen
Lian Hai Guang
Zheng Han, John
Ryan Euclid Chin Qingfeng
Siti Norhana Binte Mohamed So'od
Muhammad Fauzi Bin Azman

Adjunct Faculty

Olivia Lee
Lee Tze Ming
Tiffany Loy
Sixiu Tan
Alistair James Norris
Grace Tan

External Examiner

Tze Lee (STUCK)
Leonard Tan (Samsung)
Grace Tan (Kwodrent)
Jawn Lim (SIT)
Hong Khai Seng (Studio Dojo)
Marcus Kho (Meta)



'22

