

DIVISION OF
INDUSTRIAL
DESIGN
2019

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Division of Industrial Design
School of Design & Environment

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SDE50

CREATING A WELL & GREEN COMMUNITY TOGETHER

Over the past five decades, the NUS School of Design and Environment (SDE) has contributed to making Singapore into “An Endearing Home and a Distinctive Global City”.

Comprising of three departments – Architecture, Building, Real Estate, and one division – Industrial Design, SDE remains the only faculty in a Singapore university that provides a comprehensive multi-disciplinary offering of teaching and research in architecture, building, real estate and industrial design.

Working with policy makers and industry partners to advance the frontiers of creativity, innovation and research, we have nurtured many generations of professionals. Together, we helped build our nation in the initial years of independence, shaped our cityscape into a modern-day metropolis of smart infrastructure and sustainable developments, and transformed Singapore into one of the world’s most liveable cities.

This year, SDE celebrates its 50th anniversary and is on a cusp of a new phase in history. Adopting the Well and Green thinking in our pedagogy and research that emphasises human-centric design within a sustainable natural and built environment, SDE is driven by a quest to champion urban resilience for the community and world.

Join us as we celebrate our golden jubilee in various activities across the year, including our SDE50 Gala Dinner on 2 October 2019 at Resorts World Sentosa, where we are expecting a huge turn-out of 2,000 people. Follow our SDE50 microsite sde.nus.edu.sg/SDE50 for more updates!

Let’s create a Well & Green community for future generations. Together.



FOREWORD

Since the establishment of the Division of Industrial Design (DID) programme 20 years ago, the DID team has continuously refined its programme and gained multiple collaborations with industries from various sectors through workshops and studio platforms. Partnering with the industries to open up opportunities for internships in parallel with our exchange programme has proven to be successful in preparing our students for the workforce in their area of expertise and has led to employment opportunities with industry partners.

Our platforms, the spine of DID's programme established a few years ago, reflects the evolution of these six main domains of expertise: Product Design, Healthcare Design, Experience Design, Service Design, Speculative Design and Interaction Design. Every year, we offer our students new projects related to these respective domains. To achieve this goal, our Division constantly reinforces our engagement with the industry as witnessed through the 14 platforms during the first semester, where six were conducted with industry collaborators, such as PSA Jurong Port in collaboration with Rolls-Royce Marine, Shiseido, IFF (International Flavors & Fragrances Inc.) and National University Hospital (NUH). From an early stage of the programme (2nd year onwards), close collaboration with industry partners is established to provide our students with hands-on experience and gain exposure to relevant and valuable professional feedback. Some of the best-selected teams receive a semesters' of internship during the term of their respective platforms. These internships naturally open up many promising career opportunities for our students in the industry.

The Division is elated to see numerous awards won by our students namely: James Dyson Award 2018 National Winner, Ikea Singapore's Young designer Award 2018, IDA (International Design Award) 2017 and Wallpaper Handmade Next Generation Singapore Designer Competition Winner.

For the fourth time, DID was invited to showcase students' design work at the Dubai Design Week. Our Design Incubation Centre in association with the Kyoto Design Lab from the Kyoto Institute of Technology (KIT) exhibited at the Milan Design Week at the KIT D-Lab Tokyo Gallery, where students from Kyoto and Singapore collaborated and produced objects under the theme "Exchanged Forms". DIC has also played an active role as co-organiser in the latest edition of the NUS Makerthon to push their creativity, teamwork and innovation to the best. Themed "Give superpowers to children in need", this competition was initiated by the NUS Senior Deputy President and Provost's Office.

Teams from DID, Keio-NUS CUTE, and SOM NUS have filed a patent for the veins finder which collaborates with NUHS. One of our PhD graduates, Cai Bohong, who is currently working in Keio-NUS CUTE Centre under the direction of AP Yen Ching Chiuan, used the knowledge from his PhD study and helped Jurong Bird Park save a hornbill diagnosed with cancer.

This academic year, parallel to our academic faculty's dedication to teaching, their design practices were recognised as well. We can highlight Hans Tan, who won the President's Design Award 2018, Designer of the Year. His works were featured by prestigious international exhibitions and museums, including the Spotted Nyonya series which was acquired by National Collection, Singapore. Furthermore, Hans was awarded the prestigious NUS Outstanding Educator Award (OEA). Our lecturers have remained connected with the design, which continuously enriches their respective pedagogical approaches and relevance to the evolving design landscape.

I want to take the opportunity to thank our colleague Patrick Chia, who recently stepped down after 12 years of directorship at the Design Incubation Centre (DIC). During his leadership, DIC contributed greatly to our division through innovative design projects, incubation of students' projects, participation to international exhibitions, and outreach to local schools.

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 finally the fruits of their labour. All our accomplishments would not come into fruition without the immense support of our dedicated faculty staff. Special thanks to the DIC team, who has over the years rendered 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 our projects.

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

Associate Professor (Dr.) Christian Boucharenc
Head, Division of Industrial Design

CURRICULUM

DIVISION OF INDUSTRIAL DESIGN



- TECHNICAL
- ARTISTIC
- ECONOMIC

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. We teach a potent combination of Design Thinking, Innovation methods and Humanistic approach, with 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, to solve complex problems involved in 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 2016.

The practice of Industrial Design is articulated on three fundamental dimensions, three areas in which it takes root and spreads out in balance:

The Technical dimension of Design brings together all the tangible aspects of a project, from manufacturing process to material, from ergonomics to the functionality of a product, with a user-centric problem solving mindset.

The Artistic dimension of Design is the territory where emotion becomes form and intention becomes meaning, giving identity to a product in a particular socio-cultural context.

The Economic dimension of Design is dedicated to the realism and the viability of a project, involving sustainability, profitability and scalability as factors of success for innovation.

B.A. COURSE STRUCTURE

YEAR 1

Semester 1 Semester 2

Design Fundamentals

YEAR 2

Semester 3 Semester 4

Design Platforms

YEAR 3

Semester 5 Semester 6

Design Platforms

Exchange Programme

YEAR 4

Semester 7 Semester 8

Final Year Thesis

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 focusing 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 7 to 10 different 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 reflect the ever-expanding role of an industrial designer; not only are students able to receive exposure to different areas of industrial design, they also get 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 2019, 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

SEMESTER 7-8

In the fourth year, students are required to research and investigate opportunities and 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. At this final year level, students would learn to form and evaluate value judgments on design decisions that ensures design proposals meet with rationalized and functional criterion as well as less tangible qualities of the aesthetic. Successful graduates will demonstrate innovation and competency in industrial design.



DESIGN COURSES

HISTORY AND THEORY OF INDUSTRIAL DESIGN

INSTRUCTOR

Olivia Lee

History and Theory of Industrial Design is an introduction to the root of Industrial Design and its ever-evolving role – from the Industrial Revolution to present day. The module explores how the practice of design both shapes and is shaped by its social, technological, cultural and political contexts. Lectures are underscored by hands-on assignments that encourage independent research, analytical thinking and synthesis of information. Students thus hone their ability to think critically about the context of design and better respond to contemporary needs.

“Anatomy of a Designer” is a 5-week design exercise. Students are assigned an influential historical/contemporary figure of art, design and architecture to research and study. Their investigation culminates in a biographical report as well as a homage – an object that is designed and fabricated in the spirit, philosophy and process of their assigned figure. The object archetype for this semester was the candleholder.

IRIS VAN HERPEN

Iris van Herpen is a Dutch fashion designer most known for pioneering the use of 3D printing as a garment construction technique. Her collections often test the limits of biomimicry and technology-aided production. The form of the candleholder is based on the flickering movement of a flame, with reference to van Herpen’s “Syntopia” (2018) collection.

Nguyen Thi Hoang Anh



JAIME

Joyful, child-like and fantastical would be fitting descriptors for the work of Spanish designer Jaime Hayon. Hayon’s bold aesthetic and penchant for storytelling, is captured here choosing to create the “Mine!” bird as an extension of Hayon’s “Hope Bird” sculpture.

John Tay Jo Han

MARTIN MARGIELA

Martin Margiela was considered “Fashion’s Invisible Man”, a Dutch avant-garde fashion designer who questioned the very system of fashion even as he thrived in it. The candle holder cleverly zeroes in on Martin Margiela’s surrealist streak and preference for illusions with a holder that mimics melting wax.

Yong Zhen Zhou



MODELLING FOR DESIGN

INSTRUCTOR
Jason Ong

This module introduces basic model-making techniques using various material and hands-on processes. The workshops also incorporate fundamental form studies with a focus on visual relationships, through a series of iterations and refinements in the model-making process. Students develop value judgement while resolving multiple design elements. In addition to the understanding of material properties, the course aims to cultivate an appreciation for precision and finishing, as well as a mindset for high personal standards.

John Tay Jo Han >
Tan Guan Quan Ivan v

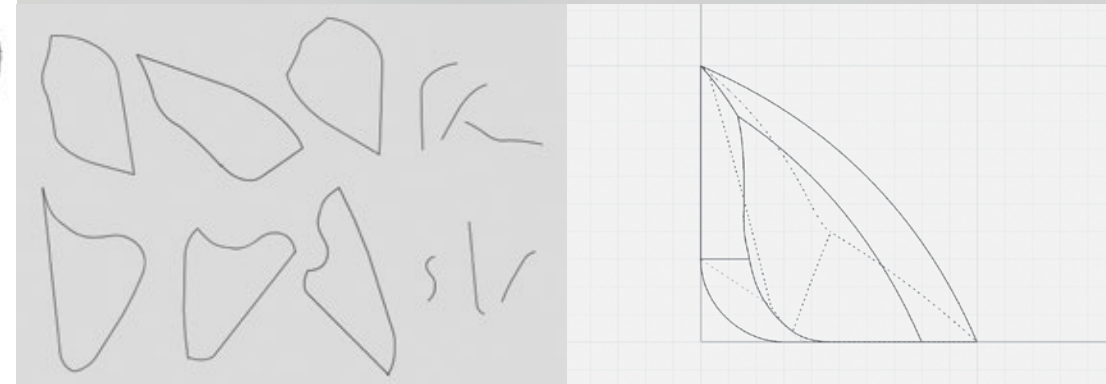
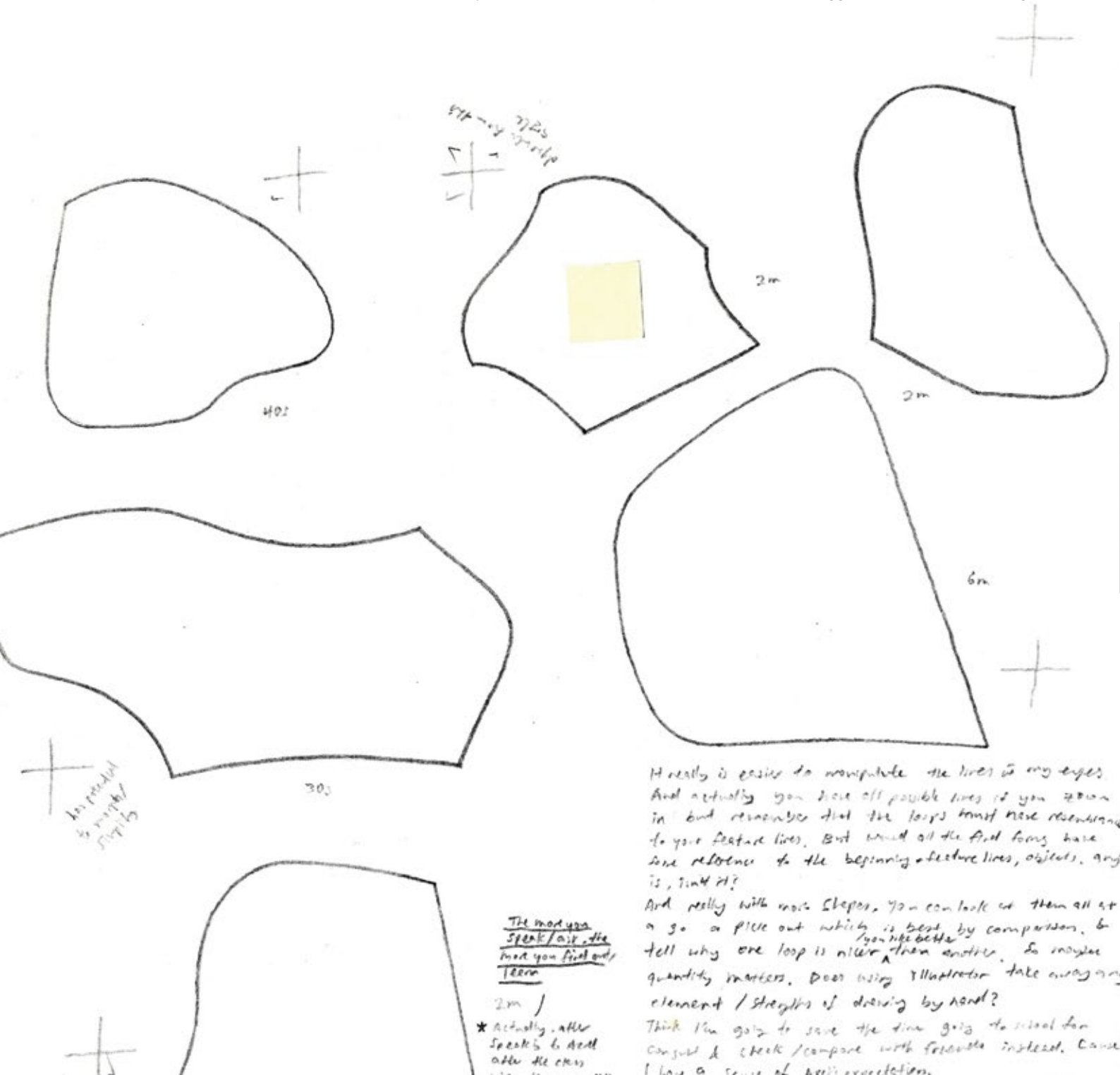


VISUAL PERMUTATIONS' SKETCHING

INSTRUCTOR

Prof. Axel Thallemer

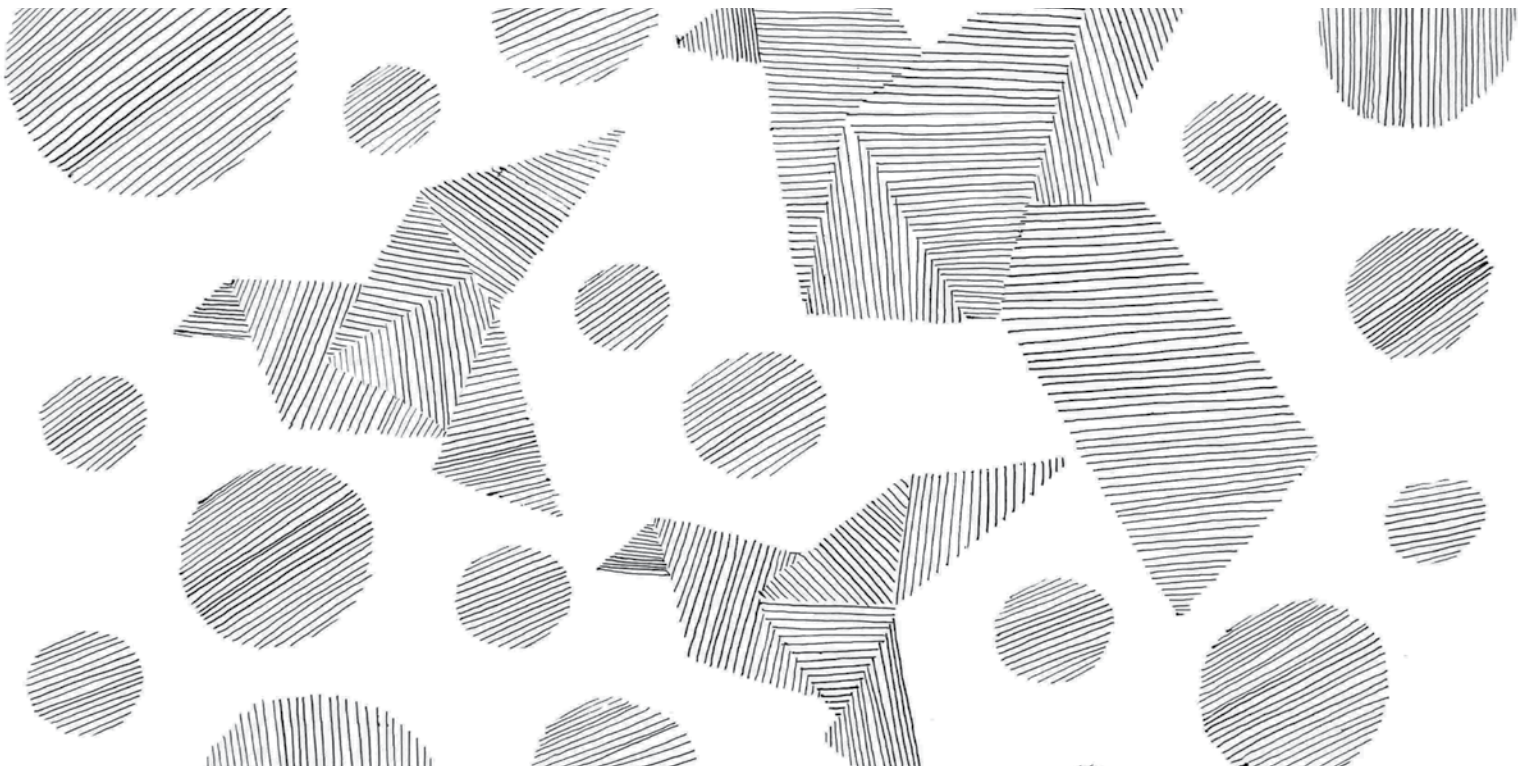
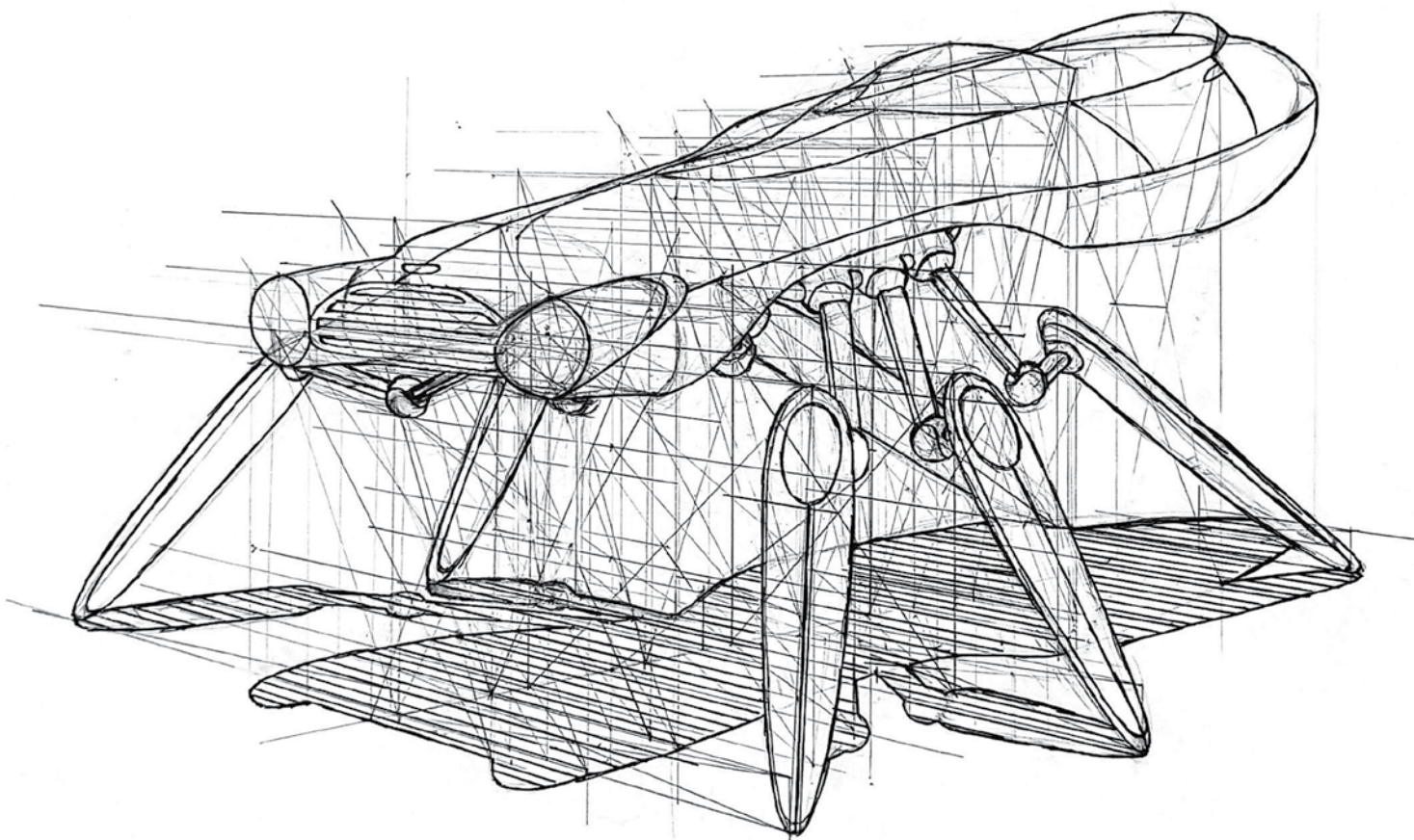
The aim of these fundamentals is to gain first-hand experience of freedom while attempting to solve a problem and of freedom in having differing opinions on how to achieve this. One is only supposed to use facilitators (aids) and heuristics (processes) and otherwise give themselves up to the free play of chance. Visual permutations have the potential to liberate concepts from invisible processes and to show that processes and events produce completely autonomous forms - authentic solutions with individual and surprising aesthetics. Design objects are presented as "articulating function" in the process of self-organisation, the quintessence of creativity, work methods and trigger events in form finding.



MODELLING & SKETCHING FOR DESIGN

INSTRUCTOR
Vincent Leow

From drawing straight lines without rulers, to 3D forms in perspective, students learn how to sketch anything from their imagination with ease and confidence.



DRAWTHROUGH

Students learn to “think and draw in 3D” by building a perspective grid and “seeing through” forms so they can draw any object or scene from any view or angle.

Tan Guan Quan Ivan

STRAIGHT LINES

Students are taught how to consistently draw perfectly straight lines freehand, using just a pen: no ruler, no pencil, no erasing allowed. They also learn two important traits of being a good designer – focus and discipline.

Wong Yu Ting Ashlyn

COLOUR, MATERIAL & FINISHING

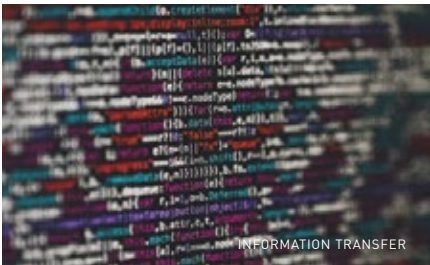
INSTRUCTOR
Celia Wong

This module aims to increase sensitivity in relating the context of design application, with meaningful choice of colours and materials. Perceived values well articulated through strong associations can then increase design effectiveness. New application can drive design innovation, challenging limits in technology. The topics includes observing market trends and category codes, translating the leading design influences into the relevant palette, exploring and specifying colours, materials and finishing.

FUTURISTIC CMF

Bouncing from the trends changing lifestyles and behaviours globally, imagine the next generation of concepts; how do the materials carry the transformation in the possible advancement? Eg. how is it smart or responsive?

SCENARIO



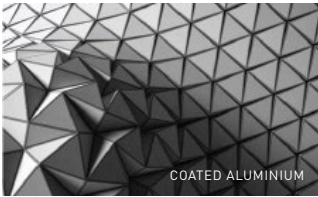
MAIN COLOURS

ACCENT

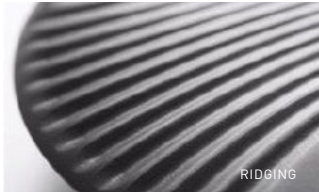
COLOUR



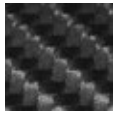
MATERIAL



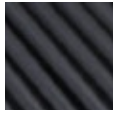
FINISHING



BODY | Coated Steel Facades



BLADES | Carbon Fiber



BASE | Rubber Protective



EXPANDABLE DRONES



Due to an increasing population and urbanisation, there is a need to facilitate immediate information transfer between various people and companies. Because of this, there seems to be a need to develop an expandable drone that can swiftly and unobtrusively deliver items and messages in the heavily congested landscape. Due to the variability of situations in an urban environment, this expandable drone is built to be highly robust and impact resistant.

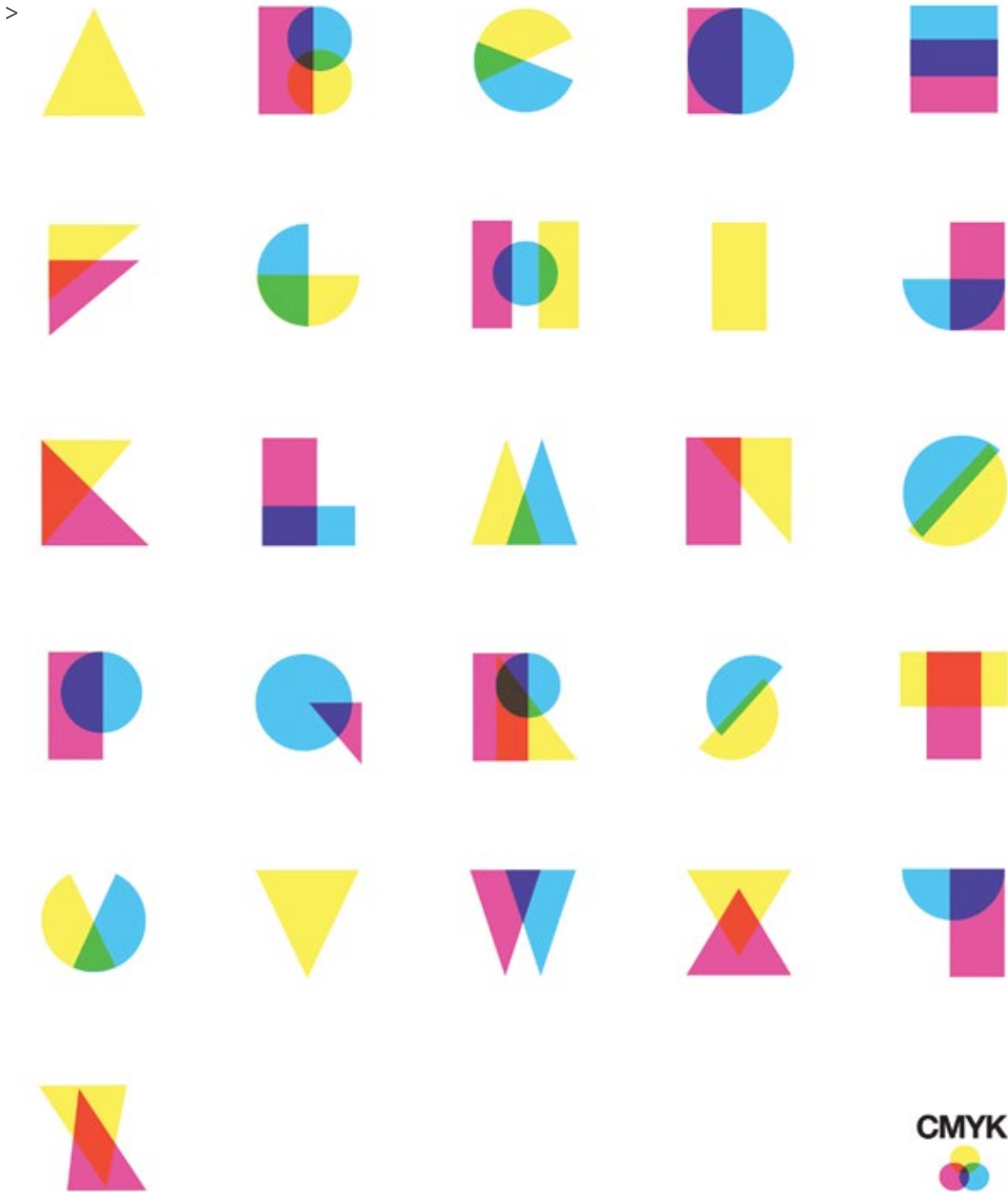
Jervenne Teo, Sherwin Ng

VISUAL LITERACY

INSTRUCTOR
Ricky Ho

TYPOGRAPHY
CMYK

Tan Kah Kiat



With the basic knowledge on visual literacy, students will able to think creatively, critically as well as practically when solving complex communication problems. Not only developing their aesthetics, craft and form-giving skills for a variety of media, they will also integrate contextual research, theories, processes and methods in their studio practice.



PACKAGING
VITAMAN!

Yong Zhen Zhou

FIGURE & GROUND
ANIMAL TESTING

Koh Bei Ning



VISUAL COMMUNICATION

INSTRUCTOR
Ricky Ho

Besides thinking creatively, critically and practically, knowledge of visual communication will allow students to expand their possibilities when solving complex communication problems. At the same time, this allows the audience to develop a better understanding and experience of their projects.

HALE

Our three brand values are fun, simplicity & trust. We design for daily living. Hale was designed to fit seamlessly into your lifestyle, so that you can live hassle-free.

Valerie Tan



LITTLE MYNAH

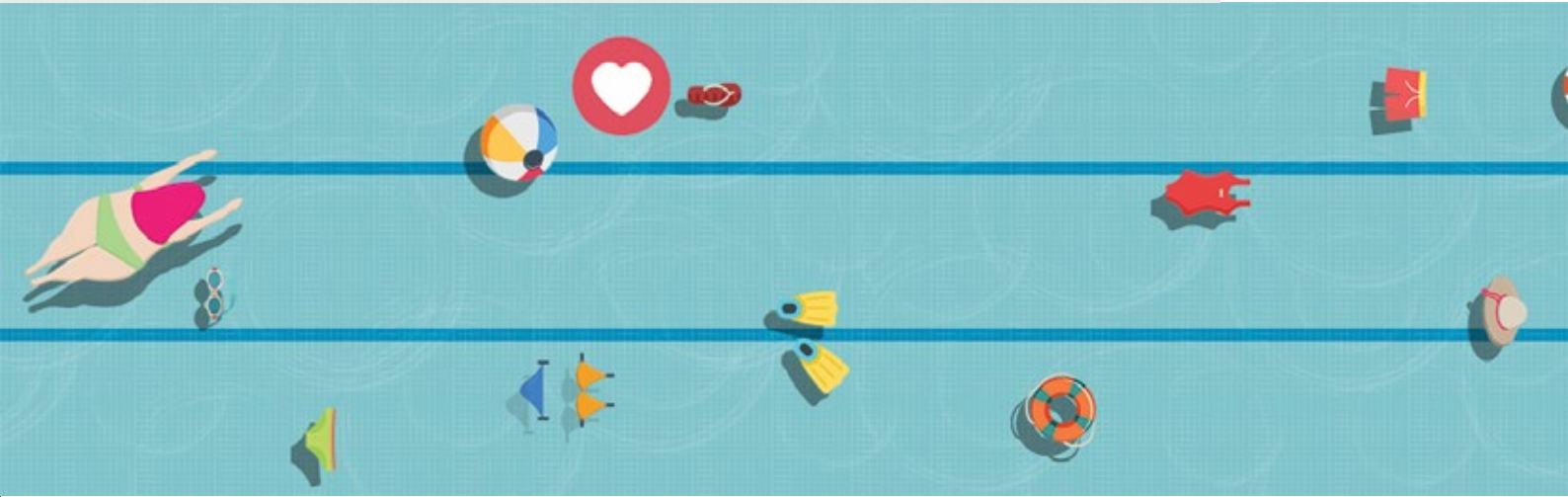
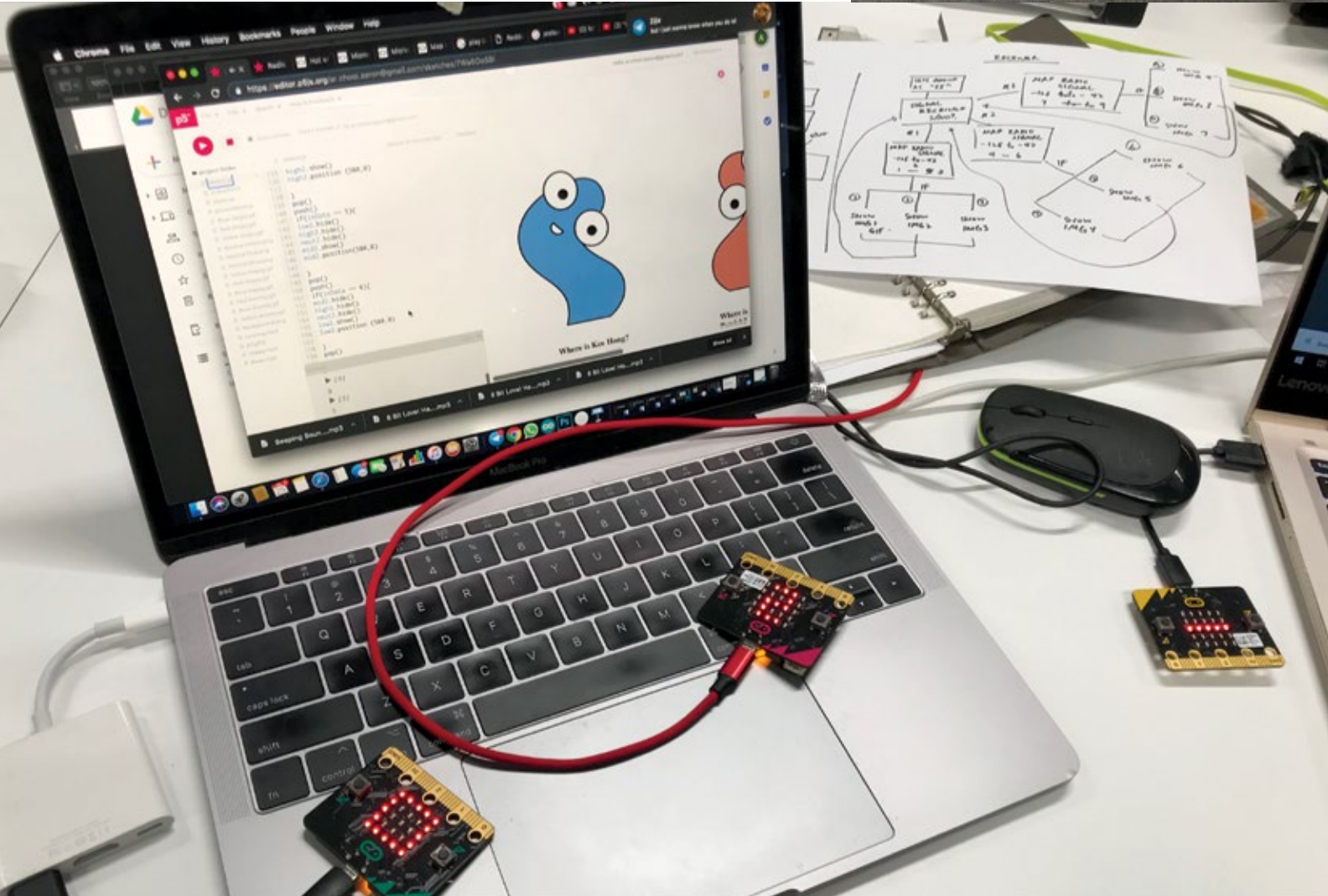
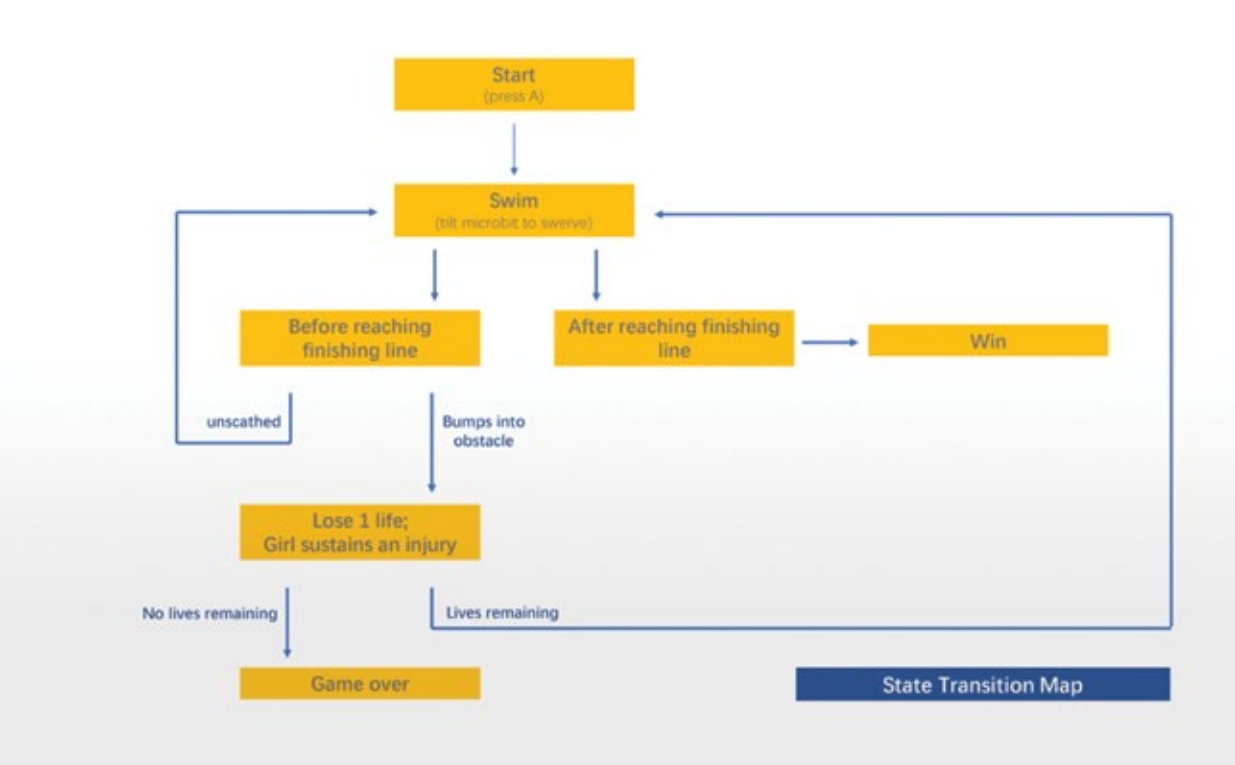
Little Mynah is a stationery brand inspired by our very own Singaporean pet - mynah birds that you can find in every corner of the city. Those little grumpy-looking friends are ready to inject a little fun to your time at work.

Zhang Han Wen

COMPUTING FOR DESIGN

INSTRUCTOR
Yuta Nakayama

This module introduces the elements of computational thinking and its application in Design. Students will acquire skills and knowledge in the use of computational logic and methods such as basic programming, data acquisition, and network architecture. Students learn to apply computational thinking to solve design problems and to use computational tools as part of their design process. Hands-on exercises and projects provide the opportunity for students to explore and apply various concepts of computing into real-world design problems.



WORMIES

Wormies is a simple and universal child tracker for parents, utilising radio signal strength as a medium. Parents are often distracted by their electronic devices. Wormies allow parents to be aware of their children's presence while using their electronic devices in a universal yet cost effective method. This concept could be further extrapolated to other contexts such as tracking livestock or in military application.

Aaron Chooi, Keith Lee

SKINNYDEEP

SkinnyDeep is about a plump woman swimming in a pool filled with obstacles such as floats, slippers, swimsuits and more. The aim is to complete the race without using up all her lives. She starts off with 10 lives represented by the heart shape which decreases in size with the bumping into every obstacle. Knocking into objects will cause her to sustain injuries, and the number of lives she has decreases. If there are more than 9 injuries, you lose and a game over sign will pop up. If she crosses the finishing line without sustaining too many injuries, you win.

Tan Zhi Ru, Germaine Tan

FUNDAMENTALS COMPUTER AIDED INDUSTRIAL DESIGN

INSTRUCTOR
Martin Danzer

This lecture will give students a practical understanding on the use of Computer Aided Industrial Design (CAID) software as a central part of an integrated digital product development process. Basic topics in the area of 3D digital modelling will be discussed, which include Lines, 2-D and 3-D Surfaces, Solids, Colours & Texture, Surface Finishing, Lighting and Shadows as well as basic rendering and animation. The exercise is based on sketches and analytical drawings to extract distinct feature lines which build up surfaces, generating shapes to form a Gestalt Object or digital prototypes.

The class 'Design Fundamentals CAID' can be seen as a fundamental basis for all platform projects (year two - four) which rely on a digital design development process; either to visualise conceptual models or to fabricate prototypes and even functional (mechanical) models.



WATER BOTTLE < >

Tan Guan Quan Ivan



GESTALT OBJECT <

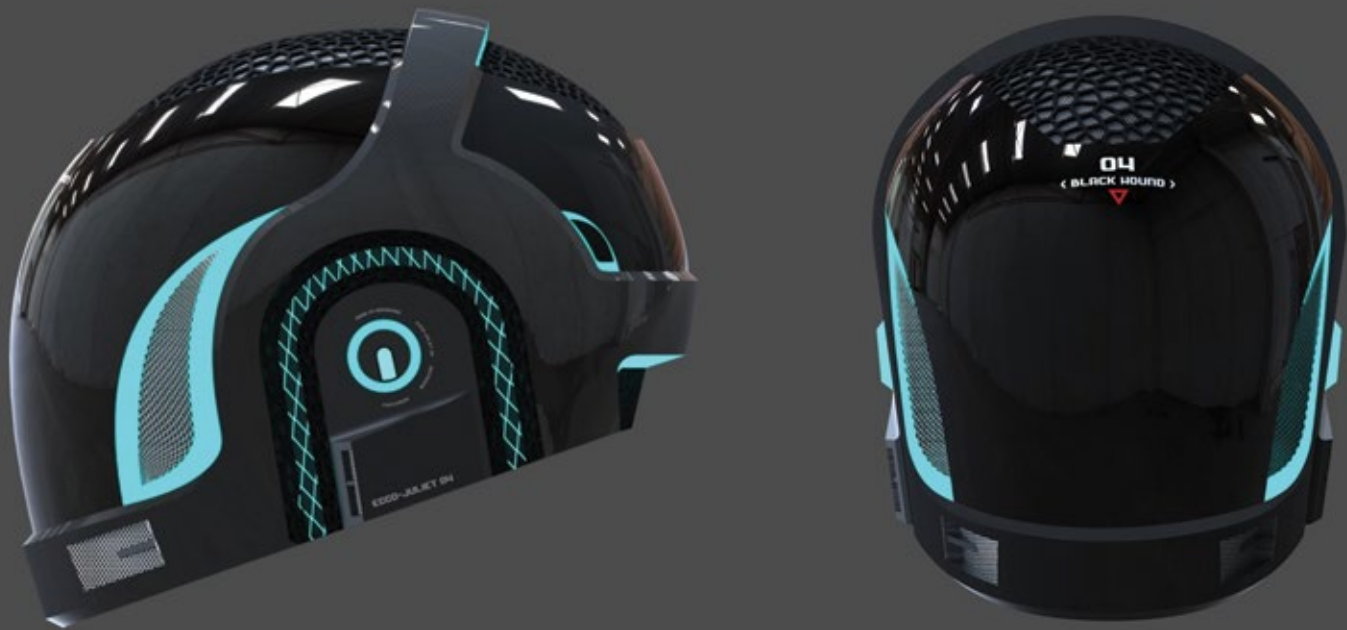
Huang Anqi

COMPUTER AIDED INDUSTRIAL DESIGN

INSTRUCTOR
Martin Danzer

This module Computer Aided Industrial Design (CAID) integrates state-of-the art CAID technologies like Generative Design, Finite-Element Analysis Simulation (FAE) and Additive Manufacturing (3D printing). Here, three main challenges were addressed by the participating student groups, while developing their innovative design solutions:

- Ambiguous, multi-functional form development
- Periodic lightweight, yet strong structures with minimal material
- Balance complexity of forms versus minimalism



HELMET

The Black Hound helmet concept uses nature inspired structures to create a stronger, lighter and more ventilated bikers helmet.

Lew Jin Jie, Chew En Wei



MONUMENT

Monument is a desktop object which reminds patrons of nature, while maintaining a balance between form complexity and minimalism, as well as maximising and exploiting the benefits of 3D printing and generative design to promote mental wellness at the workplace. Monument has been selected as winner in the 2019 7th Singapore International 3D Printing Competitions in the Singapore Tertiary Student Category / Stationery.

Aaron Chooi, Jonjoe Fong

DIGITAL DESIGN & FABRICATION

INSTRUCTOR
Martin Danzer

In the lecture ‘Digital Design & Fabrication’, students are brought beyond foundational usage of CAID tools for design visualisation and fabrication. Three areas covered are:

- Advanced Surfacing
- Parametric & Generative CAID Modelling
- Digital Fabrication & Manufacturing

The three concepts were completely designed in Rhino and Grasshopper, and 3D printed using a powder-bed based polymer printer to generate proof of concept prototypes.

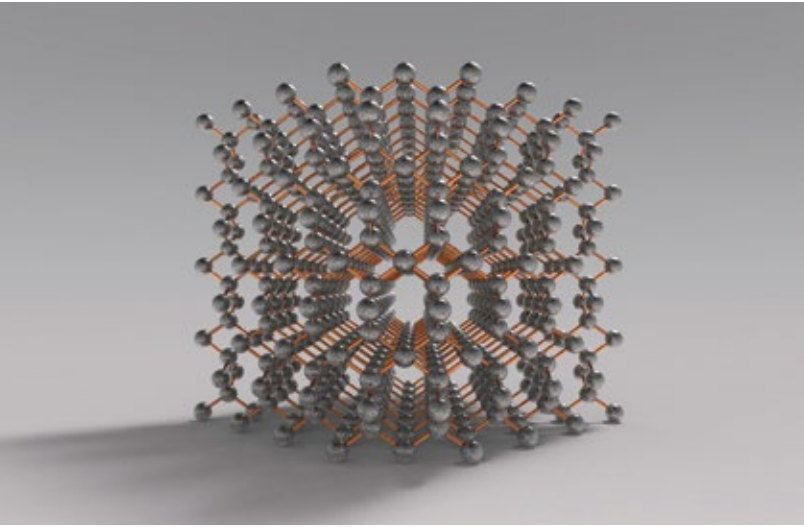
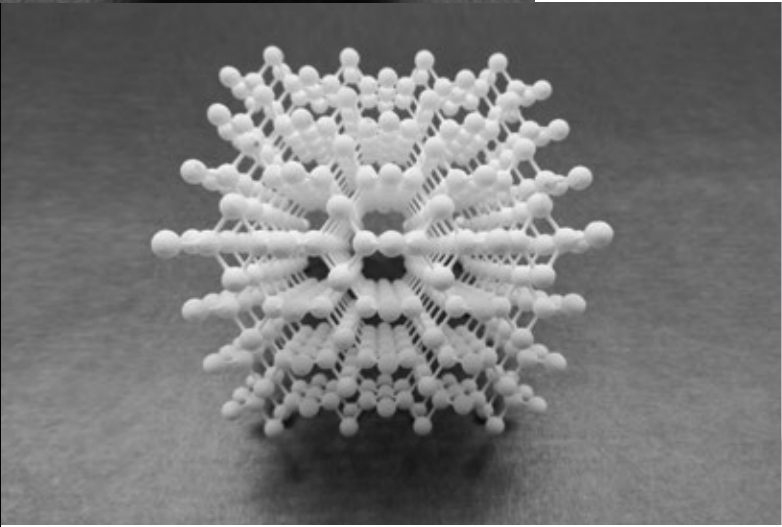
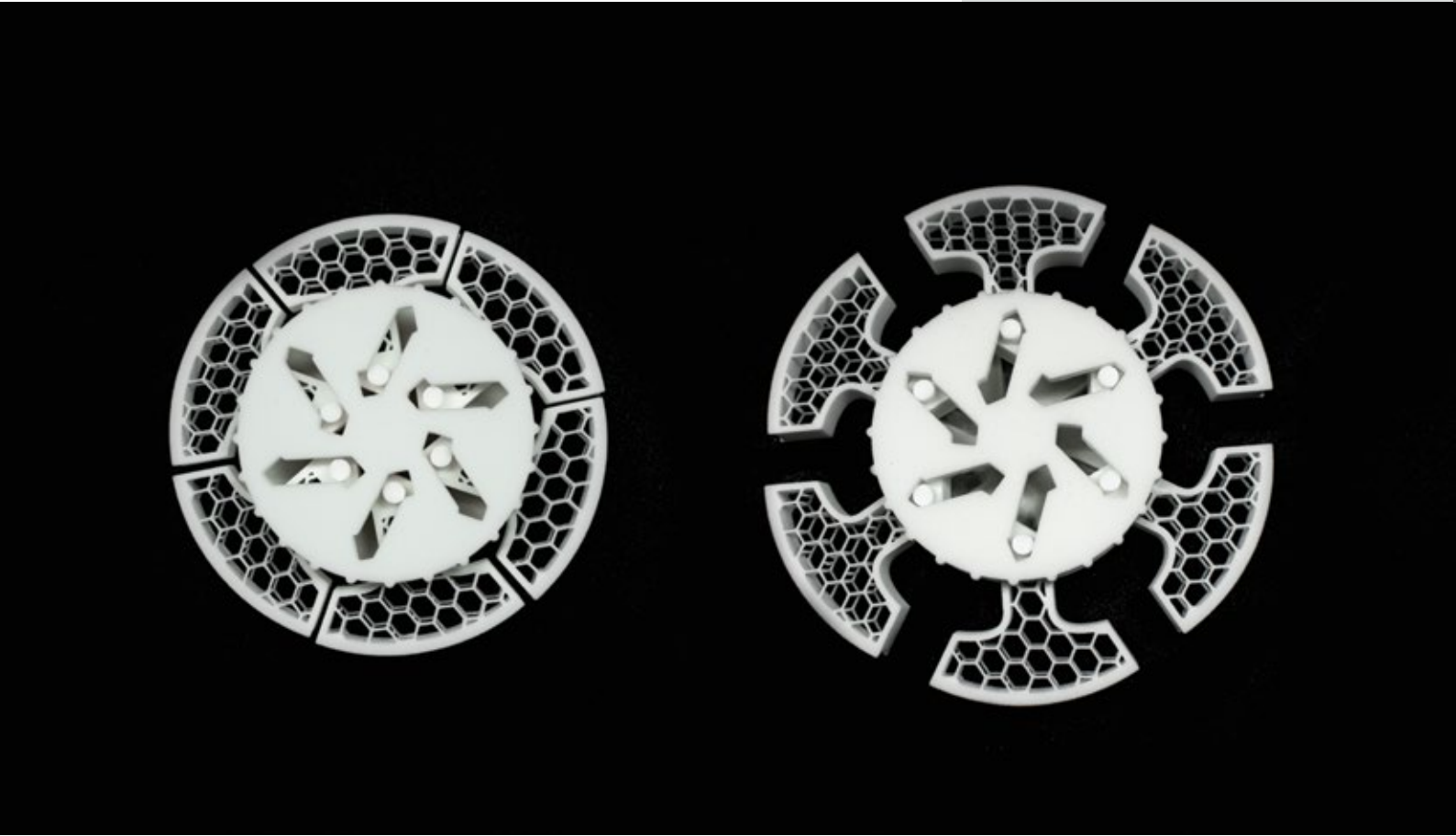


3D FABRIC KNIT STRUCTURE



This design concept features a flexible 3D Fabric Knit Structure based on the Stockinette Stich Pattern design utilising Generative Design algorithms. The idea was initiated by Origami (Circular Folding) and Graphene (Nano-tube) Structures.

Yang Yu Jou, Ong Yan Lun



PULLEY SYSTEM



The design concept is a mechanically actuated variable gear ratio wheel for a pulley system with an ‘on the fly gear’ ratio change mechanism. Inspired by the principle of a Hoberman sphere, 6 different ‘gear teeth’ can be expanded, allowing for possible applications in belt driven machineries to change in rotational speed.

Chua Kah Yeow, Lim Joel

DIAMOND LIGHTWEIGHT STRUCTURE



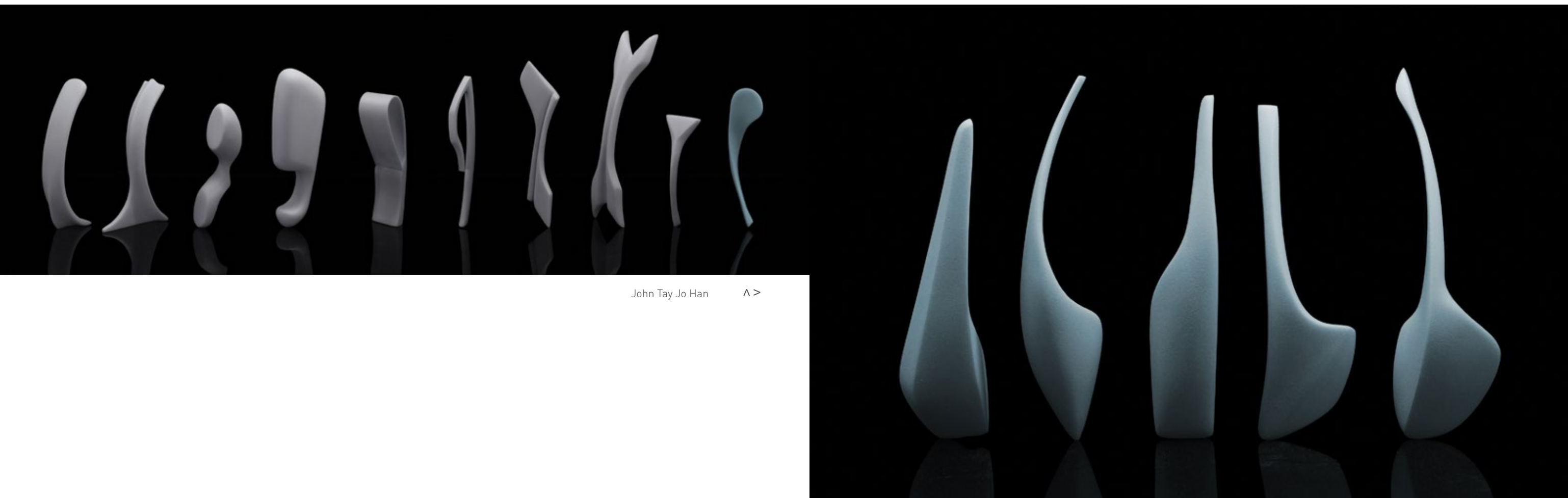
This design concept is using diamond as hardest naturally occurring material as basis for a lightweight structure. The structure allows for a repeated lattice structure with various orientations. The algorithmic thinking is adopted from MATLAB, while the structure itself can be used as an educational object in the Chemical Engineering curriculum.

Chua Zhi Jie, Liao Yun Mu, Phoon Xian Han Dickson

FORM FINDING part. 1

INSTRUCTOR
Patrick Chia

The overall aim of this exercise is to develop perceptual form modelling skills and to visualise and make value judgments on quality of the 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, and to discover and develop a wide variety of possible forms. In part B, students try to develop different expressions while keeping the same DNA of a selected piece.



John Tay Jo Han

^ >

FORM FINDING part. 2

INSTRUCTOR
Christophe Gaubert

Based on the knowledge and skills acquired in part.1 of the course, the following step focuses on the question of expressivity. The exercise consists of exploring how the shape can express an emotion, based on a word picked by chance and according to the principles that structure the form of an industrial product: the impression given by the silhouette, the personality given by the carving, the dynamics given by cutting lines and the level of refinement given by details.



«Frivolity»
Tan Guan Quan Ivan



«Happiness»
Kianne Lim

«Extroversion»
Sarah Tan

«Laziness»
Brandon Ong

«Funny»
Yong Zhen Zhou

«Indecency»
Chua Jia Hui



CONCEPTUAL DESIGN OF BUTTON CONTROLS

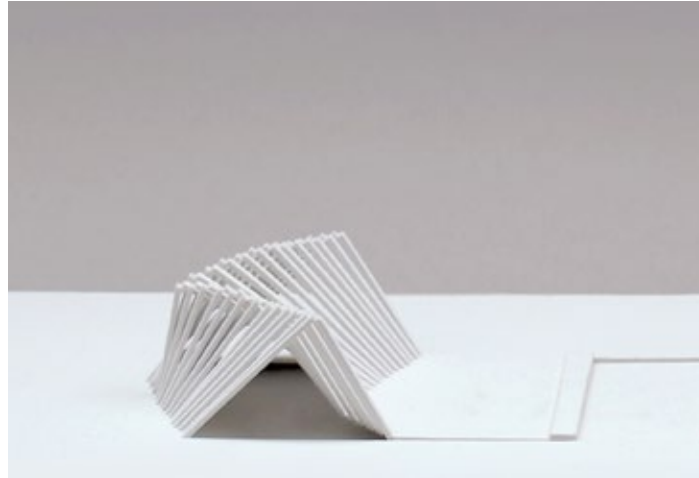
INSTRUCTORS

Dr. Christian Boucharenc
Olivia Lee

The aim of this discovery exercise is to develop a conceptual understanding of the physical attributes and control functions and visual signals of buttons used in general product design. Each of these buttons should have one of these 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.

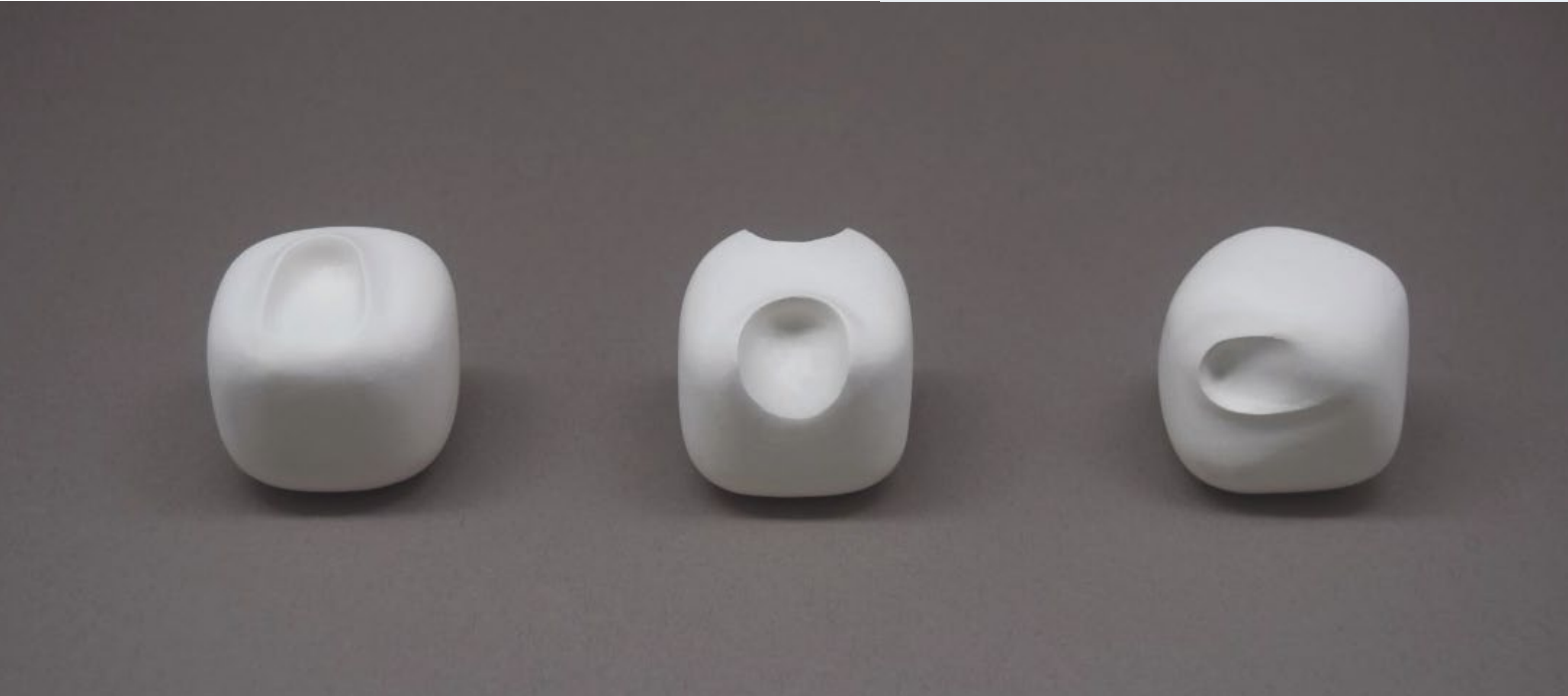
CAO MINH HUY

Inspired by traditional Japanese origami and Santiago Calatrava's Spanish architecture, the buttons exude fluid dynamism and sophistication associated with parametric pavilions. The interactive experience is sublime - the user creates art as the sculptural forms emerge from converging slats.



KAREN GAN

Inspired by the simple yet sculptural aesthetic of stacked geometries, each button is composed of three truncated cones sliced at varying angles, then vertically assembled. Following different axes of tilt, they resemble miniature dancing figures — inviting users to interact.



LIN TSAI WEI

I set out to create a series of buttons that derive their form from their interaction with the user. These almost sculpture-like buttons have their usages indicated by the deformations on the cubes, caused by the respective actions.



JOHN TAY JO HAN

Brass membranes spiral upward and converge at the point of touch, gesturing to the exuberance of Art Deco architecture and the spirit of celebration and extravagance during the post-war era.

FASCINATING FLOUR

INSTRUCTOR

Hans Tan

Making is not only an important prototyping skill for a designer, it is a crucial thinking mechanism that supports creativity. Students learnt to “think” with their hands, where “making” takes the lead. This indeterminate, designer way of working is not usually an instinctive response in practice – most of us are trained to “think before you act”, and this rational mode of thinking sometimes come in the way of being imaginative. Students are tasked to create a fascinating piece of flour with flour (material) and steam (process) as the medium, through a successive process of “make first, then analyse” that drives a risk taking, failure oriented working process.



1



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1. John Tay Jo Han
2. Xiao Jieying
3. Tan Guan Quan Ivan
4. Celeste Loh Wan Xuan
5. Tan Yew Mei Nysha



6



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10



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11

6. Wong Yu Ting Ashlyn
7. Lim Qi Xuan
8. Mervyn Chen Dexuan
9. Chloe Chan
10. Yeo Jun Peng
11. Feng Guozi Beatrice

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 2 concurrent design studios from a variety of 9 to 14 different design projects offered every semester. Topics of each design studio are in line with the department's strategic focus areas, consisting of Healthcare Design, Interaction Design, Experience Design, Service Design, Product Design and Speculative Design. The range of different topics under the 6 focus areas reflect 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 will have the opportunity to assume the role of a senior designer. This arrangement reflects the prevalent importance of group dynamics in industry practice.

SURPRISE

PLATFORM LEADERS
Timo Wong
Priscilla Lui
(Studio Jujū)

This platform explores the subject “Surprise”. What triggers a moment of surprise? To discover narratives and to manipulate forms and materials that lead to unexpected responses and delight in a functioning object.

SURPRISE MEE



Surprise Mee takes on a bare form by presenting instant noodle flavours through silhouettes of the main ingredient. This magnifies the irony of the absence of real ingredients in its flavours. Packaged on top of a chopstick like a skewer, it reinterprets the whole experience of seeing, cooking and eating whilst bringing out the notion of instant.

Denise Yeo, Roger Goh



VITAMIN B



Surprise is when there is a contradiction between what we perceive and what actually happens. As breaking is a messy process, how could it be framed as a form of celebration - through controlled breaking. Upon breaking, the piggy bank splits into equal pieces, revealing a second colour that discloses its identity. With that, the process of saving is likened to the process of planting a fruit.

Ng Zi Ning, Sheryl Ang, Ng Zi Xin



ABOUT ENTRANCE

PLATFORM LEADER
Patrick Chia

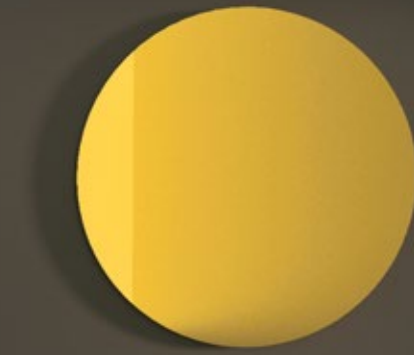
The brief is to design a single piece or a few pieces of furniture around the entrance/exit of a home. These furniture pieces are explored as props or tools which consider the transition between inside and outside, between work and home, between private and public, between self and the world, between digital and analogue, between pragmatic and emotive.



GONG MIRROR

The gong mirror is a designed “pause” in the hectic lifestyles of modern men. It personifies both luxury and comfort through the material of polished brass. A trinity of mirror, wall relief and musical instrument tuned to vibroacoustic frequencies, it places the user’s mind in a premeditative state when struck with its mallet. It is a piece which exploits the acoustics of the narrow entry way, visually and auditorially expanding an apartment beyond its four walls.

Aaron Chooi



EDGE IN BETWEEN

This set is especially composed to provide users with space to collect themselves upon entering or leaving home, before anything else. The screen breaks eye contact when leaned back, signalling to family members that the user needs alone time. The coloured portion of the bench designates space for the single user, and the raised edging acts as a subtle nudge towards physical boundaries. The need for space thus becomes a deliberate act for others to notice and acknowledge.

Nurul Syazwani

FRAME

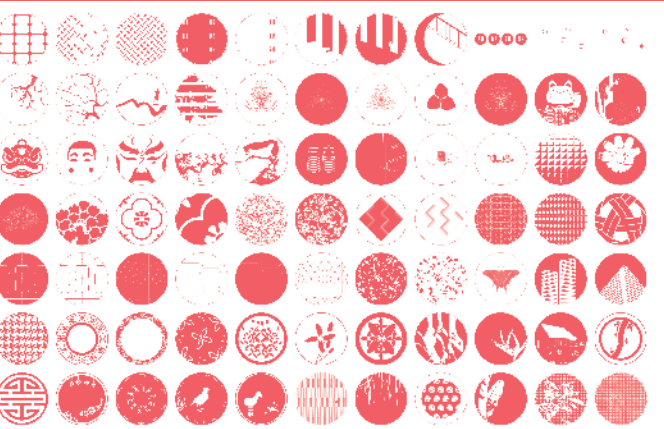
FRAME is a minimalist display shelf which turns your entrance hallway into a private art gallery. The geometric shapes respond to different object forms. When the colours and forms are kept simple, the objects on the shelf draw to the space in which it sits. With your favourite items on display, FRAME provides you immediate connection with your home.

Jiang Wann

SUPER & MAMA (DESIGN PROCESS)

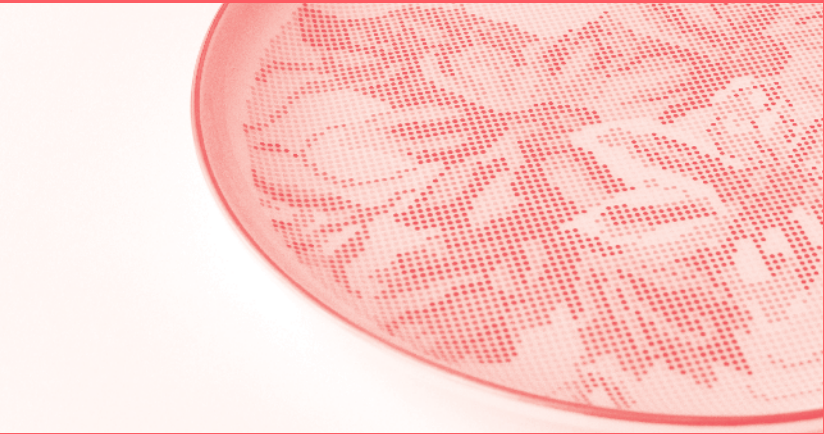
PLATFORM LEADER
Hans Tan

IN COLLABORATION WITH
Supermama



Super Iterative Speed Across Multiple Mediums

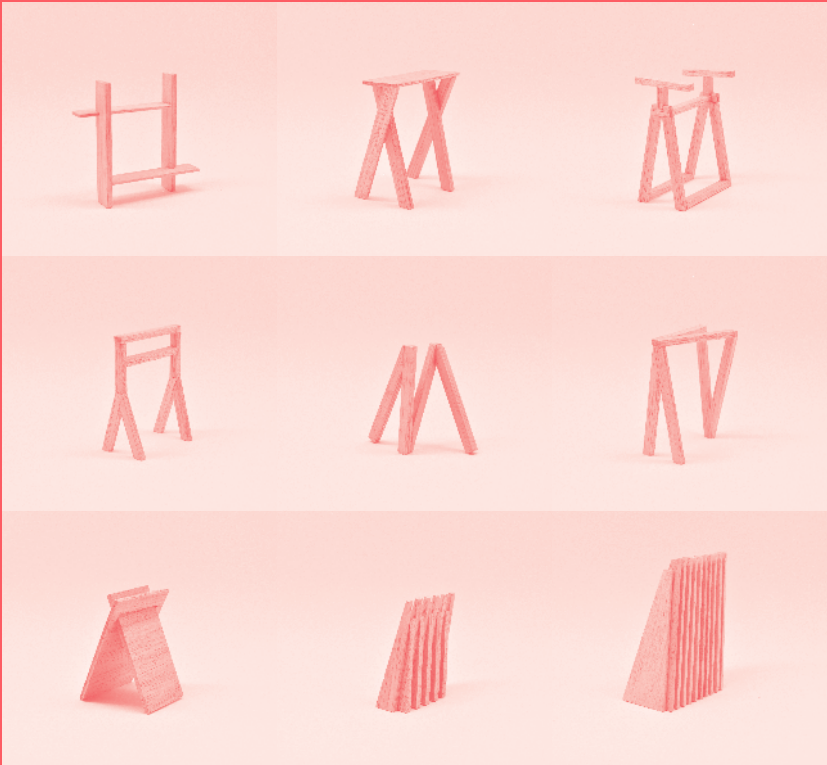
The first segment is driven by developing ideas with speed and accuracy, and students' works are assessed by a matrix of quantity and quality. Students work across four categories of predetermined products - coaster and placemat, paper calendar, blue and white porcelain plate, scented wax, with no limit to the number of final outcomes each team can submit.



Super Imagery Manipulation and Meaning Making

Through keen observation and reflection, students develop a perceptive eye for imagery, looking out for the "common yet unapparent". They translate these imageries to the products which serve as the canvas, creating visceral representations that are meaningful to the local context and at the same time alluring to a foreign visitor.

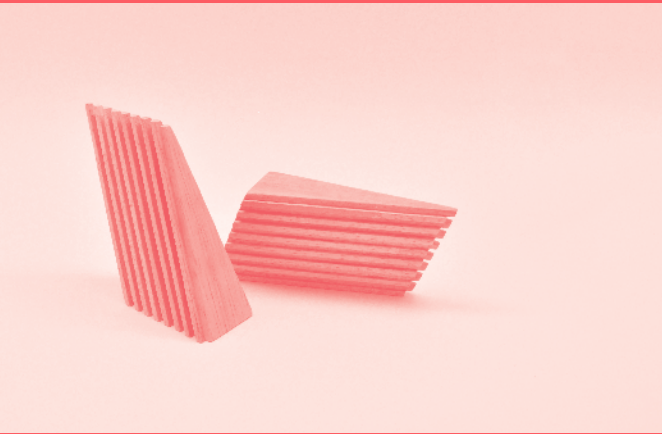
"We tell the products
what to say."



"We ask the trestle what
product it wants to be."

Mama Deep-dive Reinterpretation

In the second segment, the approach slows down to a meditative tempo as we develop a sensible acumen for a single material - wood and for a single product - trestle. Students take a highly measured and iterative approach towards the use of wood in the design of a pair of wooden trestles, delving deep into the nuances of wood while reinterpreting the topology and secondary utility of a trestle.



Mama Product, Material and Construction Sensibility

Searching for the confluence of construction, aesthetic, and utility in each concept, students control the form and composition of the object to fit its purpose, with each team culminating their work into one final wooden trestle design.

SUPER&MAMA

PLATFORM LEADER

Hans Tan

IN COLLABORATION WITH

Supermama

In this schizophrenic studio, there are two distinct 6-week segments, each with a “contrary” approach to design. Sponsored by Supermama, the product types were determined upfront, each with an appointed producer based in Japan. The first segment focused on Supermama’s Singapore collection, where students articulate with speed and multiplicity, imageries of Singapore through products that aim to capture a visceral narrative for locals and tourists. The second segment focused on a highly measured, singular approach to develop new typologies for the wooden trestle meant for a new furniture range.



BEADED NONYA

The Beaded Nonya porcelain collection is birthed from an unlikely marriage of Peranakan beadwork and Japanese overglaze techniques. Nonya beadwork is distinguished by small beads, stitched one-by-one. Here, a familiar flower bouquet motif is translated colour-by-colour onto a fine white porcelain body. This collection celebrates the beauty of cross-cultural dialogues.

Andriana Justine, Janna Tan



CRÊPE

Crêpe is a pair of triangulated trestles, each composed of 16 layers of triangles with alternating sizes. As a pair, the interlocking ridges of Crêpe combines to form a larger parallelogram coffee table. Crêpe can be directionally alternated when used as trestles. Skewed along the top and sides, Crêpe exhibits both attractive top and side profiles.

Kwek Ai Ling Anna, Jennifer Lim Chai Zhen



MIRROR³

PLATFORM LEADER
Christophe Gaubert

TEACHING ASSISTANT
Poh Yun Ru

A mirror is not usually an object but a mere surface, sometimes with a frame that makes it a product. The purpose of this platform was to make the mirror a real object, a three-dimensional item that can offer a specific usage, an interesting experience or a particular interaction with the user or the space around. All the projects took the reflection as a starting point, experimenting with it through prototypes, and using photography to communicate concepts from the very first steps.

YAMA



This series of mirrors works as a free composition, forming a peaceful landscape, as an invitation to contemplation. The reflection can only be seen from an appropriate point of view, offering a meditative dialogue with the user and the space.

Jereme Tan

MIRAGE



A single sheet of stainless steel forms this outdoor stool, designed for public spaces. Its fading mirror polished surface gives the illusion of a suspended seat, as if people were sitting on the air, on a mirage.

Tommy Cheong



LASCIVA



As an invitation to sensuality, Lasciva is a mirror that beckons to be touched, to play with the surface and to shape its reflection.

Tan Zhi Ru

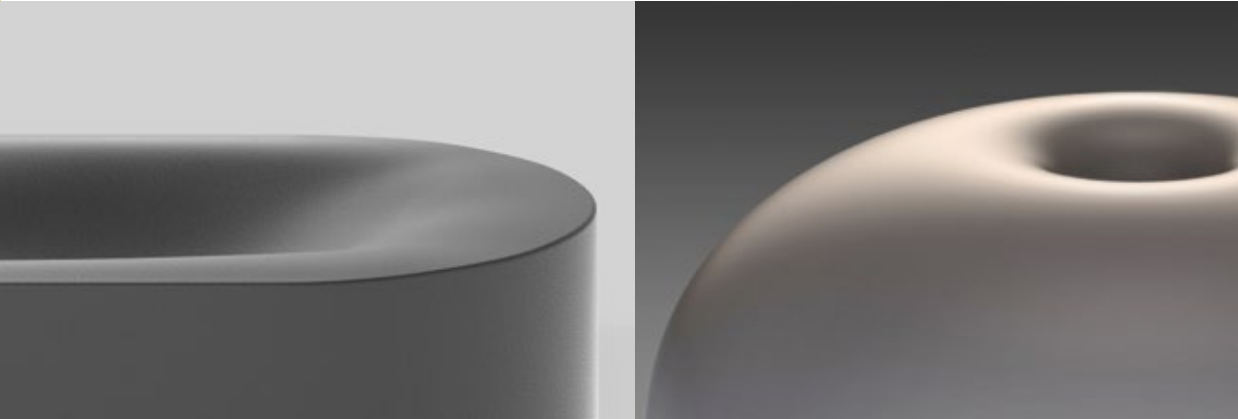
OBJECT MEANING MAKING

PLATFORM LEADER
Patrick Chia

As designers, we are motivated by the desire to create, to will an idea into physical existence. In this platform, we did just that, to create, to make something, by hands or by machines. What will we make? We tried to answer that through the process of acting, making, contextualising, benchmarking, measuring, adjusting, reflecting, reframing, remaking.

Set against the current contemporary design landscape, to have something to say, to be relevant. To bring something to the table.

Or simply to make something to be beheld. To make a connection.



Jervenne Teo
Carina Lim

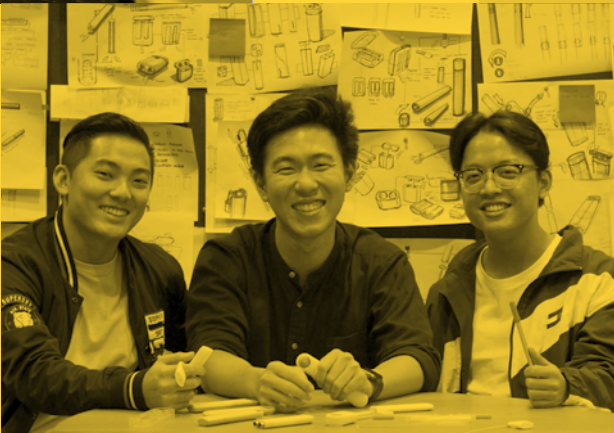
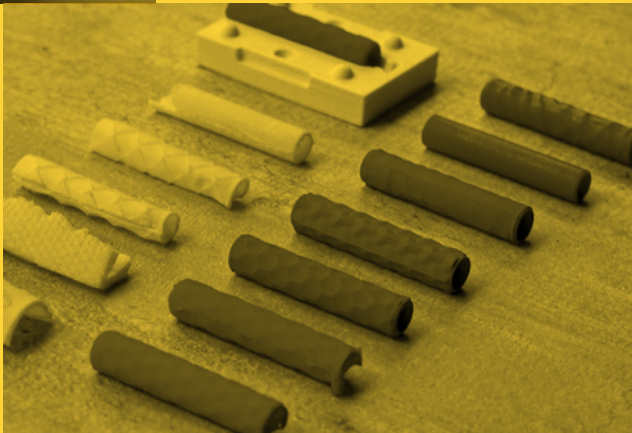
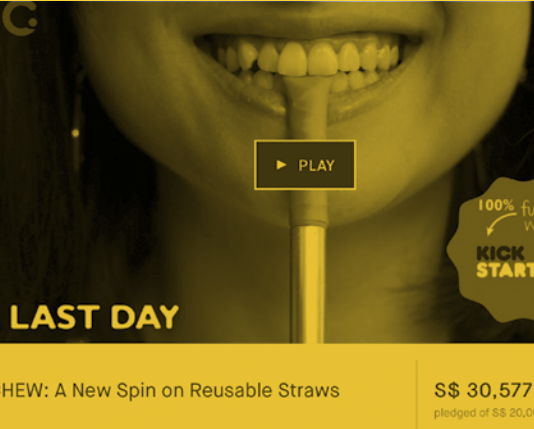


Clifford Chew
Shawn Ng



LAUNCHPAD SUPERCHARGED (DESIGN PROCESS)

PLATFORM LEADER
Donn Koh



Market Research and Positioning

In the first week, we were challenged to produce three unique concepts to pitch to the public. Landing pages were created for each product with the aim of getting quick feedback from potential buyers. From here, we validated if a venture was worth investing in. After which, came the deep dive.

Quick Sketching and Ideation

We then explored creative methods to bring our chosen concept to life while meeting market demands. Sketching acts as a bridge to think through the mechanics of the product. Through sketching, we were able to understand the form, interaction and details of the product more intricately before jumping into three dimensional models.

Prototyping to Resolution for Manufacturing

We then jumped into a rigorous 3D prototyping process. CNC, 3D Printing, Foam Modelling all come into play to get a true feel of the product. During this process, we were constantly evaluating possible mass manufacturing concerns in order to bring customers a product in the most cost effective way.

Crafting Stories

For CHEW specifically, we chose a more humorous approach and to focus on the chewable tip as a key selling point as it was a more relatable experience. As much as every feature is important, it is critical to focus on the one that allows users to feel at a visceral level. We used this to garner excitement and desire for our product.

Building a Community

Selling a product begins long before your first monetary sale, it begins with the people. Months before our launch, we were active on multiple social media and communication channels to plant the seeds for a hype. The community is what pushes the sale numbers beyond our limits. It is all about building a relationship of trust and credibility through the word of mouth.

Making an Impact

With a product, story and community ready, it finally came down to our big launch on Kickstarter. The instant we launched, it was critical to get fully funded as soon as possible. This gave confidence to potential buyers and collaborators exponentially. As such, the first week is critical for maximal success for the whole campaign. After which is where the real work begins.

LAUNCHPAD SUPERCHARGED

PLATFORM LEADER
Donn Koh

Launchpad 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.

CHEW: A NEW SPIN ON REUSABLE STRAWS

Being ecofriendly is easy, if you are given the right tools. Garnering over \$20 000 in under one week, CHEW is a novel take on current reusable straws with the user as a starting point. CHEW caters for users who miss biting on their straws, elevating the experience of textures. Each set includes a case is a case which allows users to spin their straw dry before slipping it into their pocket.

Kevin Yeo, Tommy Cheong, Lim Jing Jie



FLLO

Driven by the common goal of improving user experiences in the workplace, we reinvented a classic for the modern 21st-century office. Introducing fllo - a laptop bag that transforms into a beautiful divider. fllo allows you to get personal space and privacy to block out distractions and work fuss-free. With compartments for your essentials, fllo also creates a home for your belongings.

Carina Lim Yu Shan, Ng Luo Wei, Ye Siling Jaycelyn

EMBER STOVE

Ember is an ultra-efficient pocket stove designed for easy usage and excellent heating performance to cook your meals fast and well. It comprises of unique air vents that ignite a long-lasting vortex flame from twigs and sticks, a 3-pronged cooking platform to accommodate various pots and pans, as well as a 3-point elevation base that ensures that the stove remains stable during use.

Png Qi Hui, Chew En Wei, Martin Dellinger



PRODUCT DESIGN+ DIFFERENTIATION

PLATFORM LEADER
Song Kee Hong

The learning outcome of this class is to help students understand the process of designing a well-differentiated product for the market, and the importance of integrating with downstream engineering and manufacturing processes. This aims to create a learning experience that simulates typical industry situations and familiarise students with common industry practices. This helps students gain a more realistic perspective – one that shows Industrial Design does not exist in isolation but instead co-exists amidst a whole ecosystem of other disciplines and services.

VERGE



Verge is designed to enable a simple grab-and-go charging experience. This wireless system consists of a charging base and a power bank that attaches to the phone through a magnetic card. The angled charging base falls flat when a phone rests on it, thus automatically activating the power switch to start charging both the phone and power bank. It powers down completely when the phone is removed.

Jervenne Teo, Shawn Ng

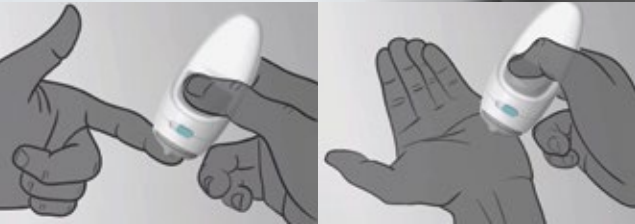


MUL & ARO



Mul & Aro reframes air purifiers by distilling down to their bare essentials. Mul is conceptualised around the water-based air purifier by replacing the water chamber for filtration with any vessel that holds water. Aro turns the HEPA air purifier inside out to expose the filter; reducing case parts & providing cues for filter change. The filter is compressible for compact transport & disposal.

Natalie Mae Tan, Xavier Teo



GLUCOFAST



Glucofast is an all-in-one glucometer for diabetics to keep track of their blood glucose levels throughout the day. It integrates a test strip cassette and lancet needle drum with an auto loading mechanism. Its ergonomic form allows for single or double-handed usage, creating a convenient and unobtrusive solution for diabetics.

Philip Chen, Sherwin Ng

DDD LIGHT-DIGITAL DESIGN OF DESK LAMP

PLATFORM LEADER
Prof. Axel Thallemer

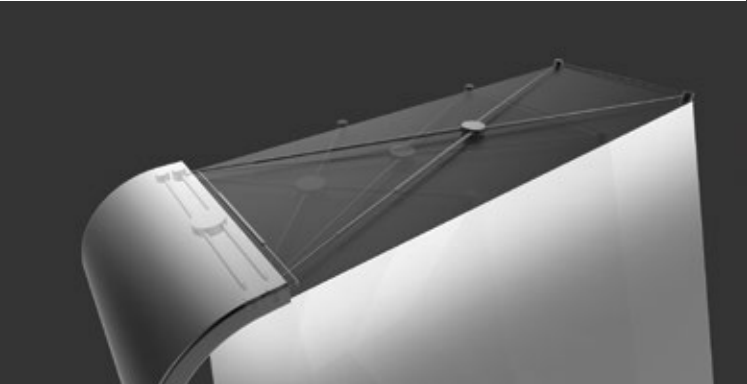
In April 1919, ‘Bauhaus’ was founded in Weimar, Germany. Walter Gropius named it and became its first director. He liked the ‘Midgard’ lamp designs – protected by quite many patents then – of Curt Fisher, a balloonist, airshipman and engineer as well as entrepreneur, so much that he used these during all his life. Spanning over to anglepoise, spring-balanced Luxo, Jieldé and the famous IKEA one, both Tizio and Tolomeo are rounding up the 20th century history of desk lamps. The design exploration was to find the current continuation based on innovative, emerging illuminants 100 years later.

KOILED

V

Koiled embodies simple aesthetics and functionality. Unlike a conventional desk lamp, economy of movement is achieved as light is switched on via a simple knob lift. The base doubles up as an accessory tray that houses the wire. When unused, the light can be stored away in a compact manner; this removes its distinctiveness as a desk lamp and makes for greater congruity with its surroundings.

Tan Kah Wee



REVEAL

^

Reveal introduces a new dimension of physicality to light. This design is made possible using flexible and ultra-thin properties of OLED which is supported by an x-brace mechanism. By simply pulling out the panel, the light comes on. The more you pull, the brighter it gets. This physical act of pulling creates a tactile interaction with light. With Reveal, experience light in a new way.

Andy Tang Weng Chen



MOMENT[UM]

<

Momentum is a modular desk lamp that seeks to accommodate its user by providing an unrestricted freedom in the positioning of light. The lamp consists of a base plate, body units and a head. Each body unit can be added to or subtracted from the lamp from granting modularity in its form. The magnetic ball joints between each unit remove the limitations of traditional mechanical joints, and the internal wiring and connections make external wires along the lamp redundant.

Chua Kah Yeow

DESIGNALYSIS

PLATFORM LEADER
Christophe Gaubert

This platform was an opportunity for students to elaborate and define their personal style as a designer and to apply it to a collection of products. Based on their experiences, taste and imagination, they first made a visual description of their stylistic universe and a personal logotype. Following this singular statement, they had to develop a full range of “deskcape” objects, from stationary to electronics, building coherence thanks to their singular aesthetic writing.

SIMPLE SERENITY

V

Being mostly inspired by the Japanese traditional architecture, Zen gardens, plump cats and Korean characters, Simple Serenity was designed around geometric shapes, curves and negative spaces. A series of tabletop products working closely to keep you and your tabletop organised.

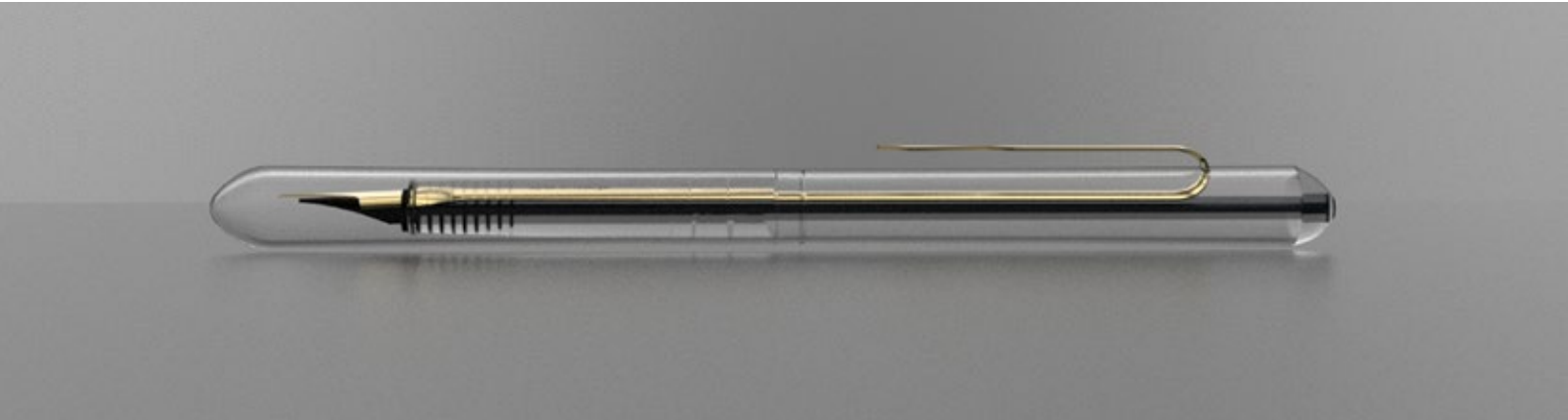
Tan Wei Jing

R

V

By extending each product’s perceivable power and suspending them within its containment, the series would definitely have presence beyond desktop essentials.

Ryan Chin



CONNECTING THE DOTS

<

The calculator “Connecting the dots” was inspired by how ones’ eye can complete what is missing visually despite being incomplete and also how intuitive people react to products.

Tan Kah Wee



SHISEIDO COSMETICS SYSTEM

PLATFORM LEADERS
Dr. Christian Boucharenc
Olivia Lee

IN COLLABORATION WITH
Shiseido Group

The aim of this platform is to design a modular system for application in the retail industry. To invent new ways to display merchandise and to raise brand awareness while preserving overall brand identity, re-using its fixtures several times a year at different locations. The student also have to consider, think and create space for storage too. RE-USING, MODULARITY and MOBILITY are the key words. The expected result from this exercise is the proposal of an innovative concept of modular system for cosmetics display and road show.



MULTI-DIMENSIONAL

Multi-Dimensional is a modular retail system that can be easily tailored to fit any cosmetic brand. The system is set-up by arranging several base blocks into the desired configuration, and subsequently stacking a series of frames on top. The juxtaposition of the voluminous blocks with the delicate frames creates a dynamic, unique display that stands out in the bustling travel retail environment.

Rachel Chan, Tan Wei Jing



A SPACE FOR HEALING

PLATFORM LEADER

Michael Leong
(SAA Architect Group)

IN COLLABORATION WITH

Woodlands Health Campus

Anchored in existing evidence of healthcare design, students are to gathered research on the impact of the quality and character of the environment on health. Their exploration would lead to a set of furniture which may be actualized and used on the health campus. The designs aim to augment the focus on health and wellness as early preventive measures instead of limiting 'healthcare' to medical treatment.



HOOP SERIES

Designed for the modern work environment, the Hoop line of a bench and standing table promotes an unstructured and informal approach to meetings. Its circular form echoes a campfire and its ergonomics supports quick and purposeful interactions.

Lum Jun Jie



FURNITECTURE

PLATFORM LEADER
Ash Y.S. Yeo

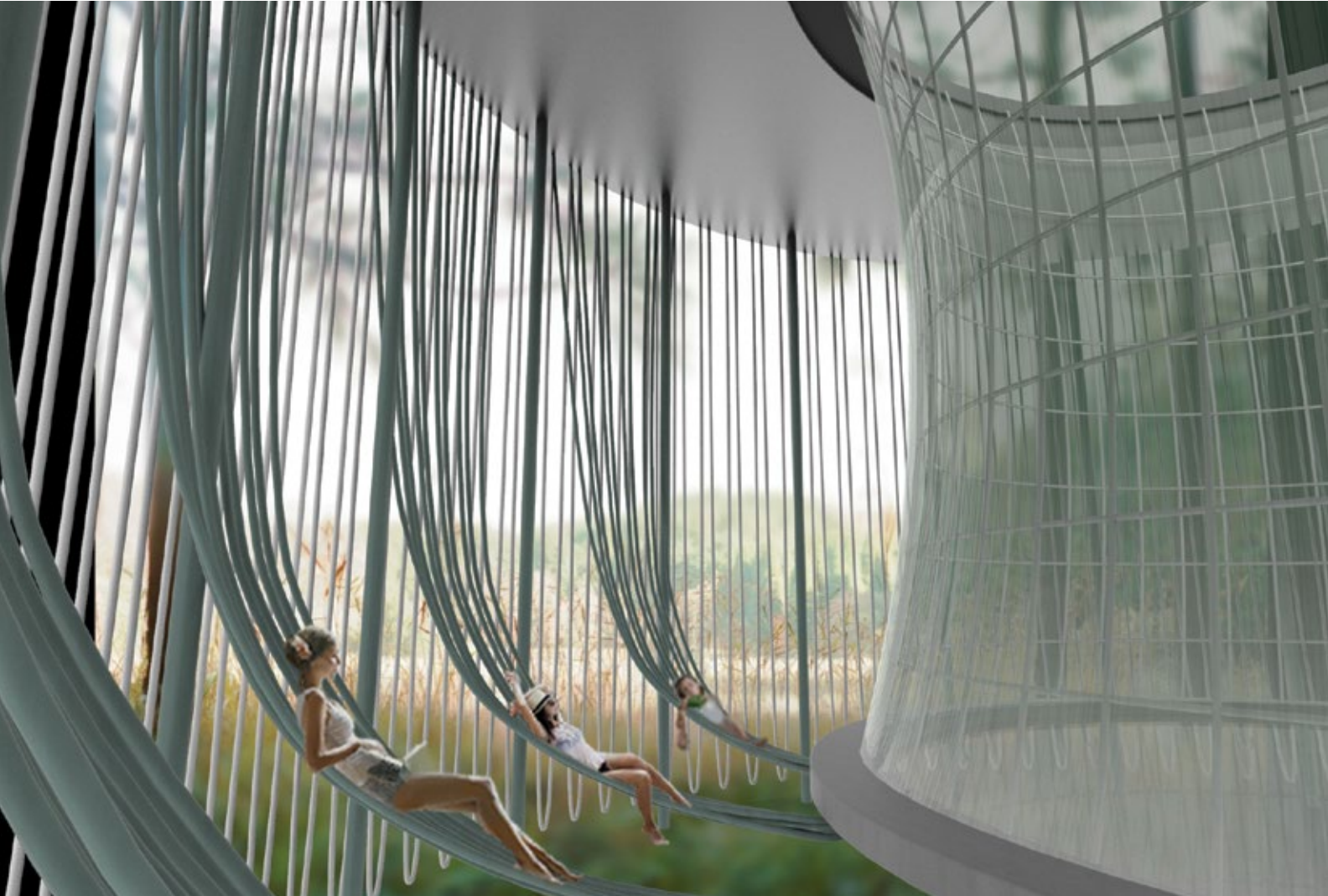
Industrial Design meets architecture, synergizing object functions with meaningful experiences. A systems approach is applied to capture typologies, morphologies and archetypal propensities, with unique spatial phenomenal gifts to user habits, rituals, rhythms and flow of events, which makes design sustainably essential. Design Focus is given to mindful spatial phenomenal experiences, creating crucial concepts with collateral sense of places, functions and flows, which are well-fused, confluent, provisional, and adaptable to multi-contexts, multi-modal design typologies, all processed with a design philosophy of “Less, to give more”.

BANYAN

V

Circular and spiral as archetype, Banyan lulls with a maternal canopy for unbridled social play, and pure dialogue with nature. The rope curtain inspires lively discoveries with screens, lanterns, hammocks, carousel swings, as its core netting connects one to twilight shifting shadows, rising receding tides, imbuing atmospheres of mindful reflections and joie de vivre.

Maggie Seah, Ashley Huang Mu En



ELE

^

Contoured to roll and spread across large landscape contexts, ELE excites kinetic phenomenas of climbing, rolling, stumbling and racing; exhilarating social play! Within its humps of caves afford cosy respites of hiding, resting and safety, adventures and social exchanges when camping. Both contrast archetypes spark propensities of phenomenal gifts, encouraging kids' discovery of freedom play.

Ho Pui Yng, Felicia Lee Jia Xin



AARIAN

^

Aarian is a sensible response to Urbanised Singapore, leveraging on the latent structural propensities of lamp-posts, Aarian redefines user needs of seating and shelter along with place and time, creating micro-habitats of human traditions with light play. Unfriendly public spaces are turned once again into a tabula rasa of social activities, ready to be abused by the nation of the kampung spirit.

Ian Tan, Aaron Chooi

ENCOUNTER WITH A SCENT

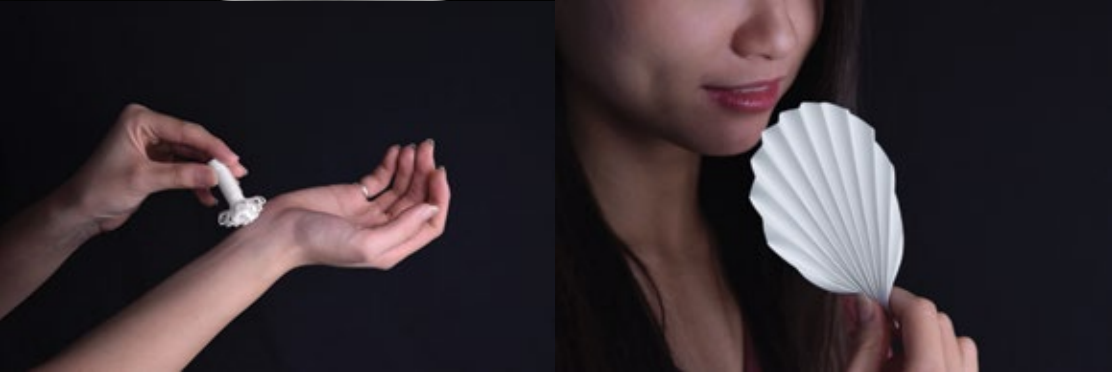
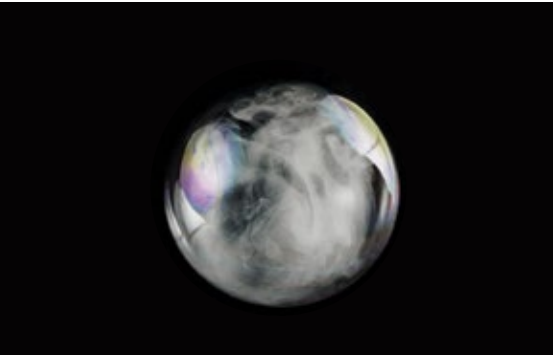
PLATFORM LEADER

Christophe Gaubert

IN COLLABORATION WITH

International Flavors & Fragrances

For this second and consecutive platform in collaboration with IFF, it was asked to the students to make a wide research on the first encounter with a fragrance, to reinvent the objects and gestures which make this first journey with a scent a unique experience: the discovery of the smell, the first contact with the skin, the sample to take away as an extension of this memorable moment.



FIRST DEW



Fragrance, like air, has always been an invisible and intangible entity. What if we could materialize the air in order to encounter fragrance in a direct and pure way? A mist of scent, ephemerally captured in a bubble - to be caught in a crystal glass, or taken away such as picking a flower holding the morning dew.

Julia Lee, Ryan Chin, Gracia Fei

ELEGANTLY INTUITIVE ELEMELONS



Simple yet surprising, a collection of intuitive elements naturally guides users to indulge in the fragrance at every stage of the experience. Made of simple materials, cuts and gestures, a paper fan enables the first smell and a non-fabric brush offers to try and take away the scent.

Ho Pui Yng, Tan Zijie, Petrina Leow

DESIGN FOR MEDICINE

PLATFORM LEADER

Dr. Yen Ching Chiuan

IN COLLABORATION WITH

National University Hospital

This platform is a collaborative effort between National University of Singapore and National University Hospital. In this platform, students will be working with clinicians from National University Hospital to work on real-life problems faced in the clinical setting. Through this platform, students will discover a multitude of opportunities for innovation in medicine through the process of design and will be exposed to the Human-Centric-Design Approach to practice good problem framing and identify opportunities for design intervention.



MARROWMAX - CLOSED SYSTEM FOR BONE MARROW HARVESTING



MarrowMax is an add-on for the Arrow® OnControl® Powered Bone Access System, which assists in the manual process of doing the insertion and a bone marrow needle. Using an enclosed system and a rotary joint, MarrowMax allows for the drill to function while maintaining a seal. With MarrowMax, bone marrow harvesting is now more ergonomic for the doctor and poses less risk for the patient.

Fiona Tan, Kevin Yeo, Elizabeth Henderson



JUNO - INTRODUCER FOR LARYNGEAL MASK AIRWAY PROSEAL



Unsuccessful insertion of Laryngeal Mask Airway Proseal (pLMA) can cause ineffective ventilation, tissue trauma and airway obstruction. Juno is a polycarbonate introducer which provides a rigid yet flexible, anatomically compliant curve for safe and effective insertion of the pLMA, with fixation tabs to aid better securing to the patient.

Ching Soon Tiac, Chou I Nung



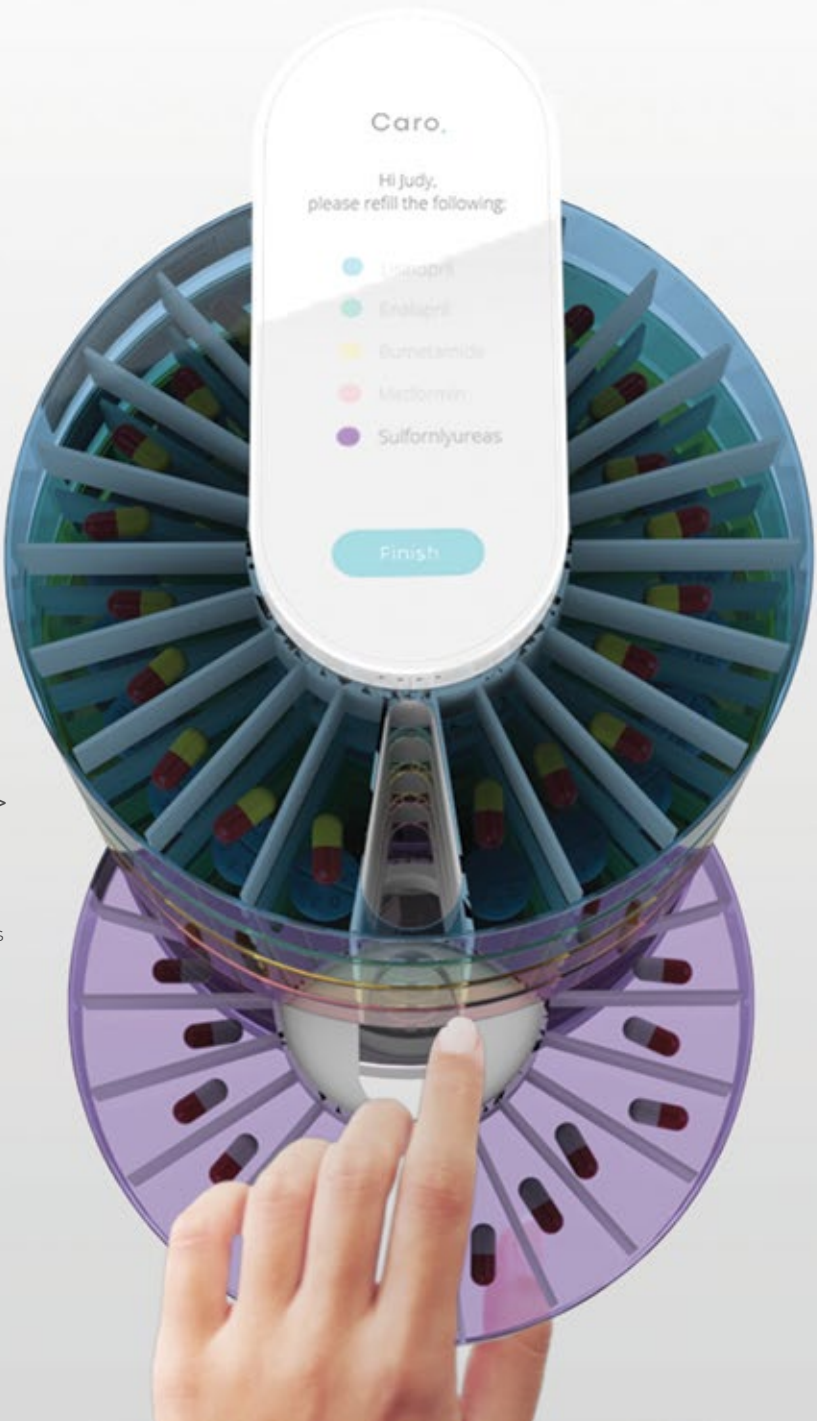
PRODUCT DESIGN+ USER EXPERIENCE

PLATFORM LEADER
Song Kee Hong

The objective is to provide students with a learning experience that simulates typical industry requirements; to gain a more realistic perspective on product design for today’s market.

The module also helps students understand the importance of creating products which exist within an eco system of user touchpoints to define a seamless user experience.

To ensure contextual relevance, solutions need to address fundamental technical constraints to integrate with downstream processes.



CARO, A MEDICATION MANAGEMENT SYSTEM >

Caro is a medicine management system that integrates with hospitals’ healthcare infrastructure. It simplifies the way medication is packed, distributed and consumed. Medical providers can verify and pack the prescriptions in cartridges for the elderly on long term medication. A hub dispenses necessary doses automatically and is linked to healthcare providers and health sensors to manage replenishment via courier. Caro streamlines the healthcare experience from the pharmacy to your doorstep.

Tan Zhi Wei Ashley, Tan Ying, Andy Tang Weng Chen



SALUS ^

Salus is a modular personal protection system designed for professionals and craftsmen. It improves the comfort of wearing protection devices due to an adjustable harness system that redistributes weight over the head. The system consists mainly of a safety eyewear with the option of adding noise protection ear muffs and air filter respirator. Salus’ well integrated modularity allows it to be worn or removed without any complicated straps or overlapping pieces, even for users with prescription eyewear.

Chua Kah Yeow, Lee Jie Xuan Keith

PUFFI, A LOW COST INHALER FOR DEVELOPING COUNTRIES ^

Puffi utilises dry powder pill asthma medication instead of the relatively expensive metered dose inhaler, which employs costly disposable pressurised canisters to deliver inhalable medication. Unlike existing dry powder inhalers, puffi is specifically designed for children in terms of ergonomics and function, requiring less strength and coordination to operate. This is achieved through the use of a simple pressure pump and regulator system as well as a proprietary drug aerosolisation chamber. Puffi’s coloured interface further serve as action cues where the user would instinctively interact. Above this, Puffi’s supporting pill bottles are designed to reflect a similar design language and facilitate ease of operation, making puffi a truly child friendly product.

Tan Zijie, Aaron Chooi

PNEUMATIC ORTHOSES

PLATFORM LEADER
Prof. Axel Thallemer

IN COLLABORATION WITH
Festo AG & Co. KG

Mankind has always been preoccupied with air as a medium, also in the design sense. During the 20th century the approach to this theme was deepened in so far as air was not merely represented in visual or artistic terms, but was deliberately used by architects and designers as a material.

What kind of inspiration can be derived from that material context to the application of orthoses for humans?

What are the changes to that knowledge area in and for the 21st century?

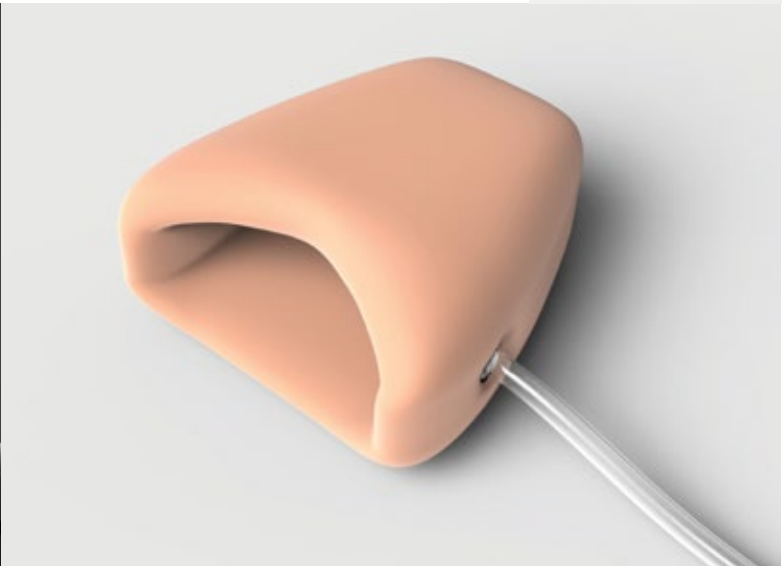
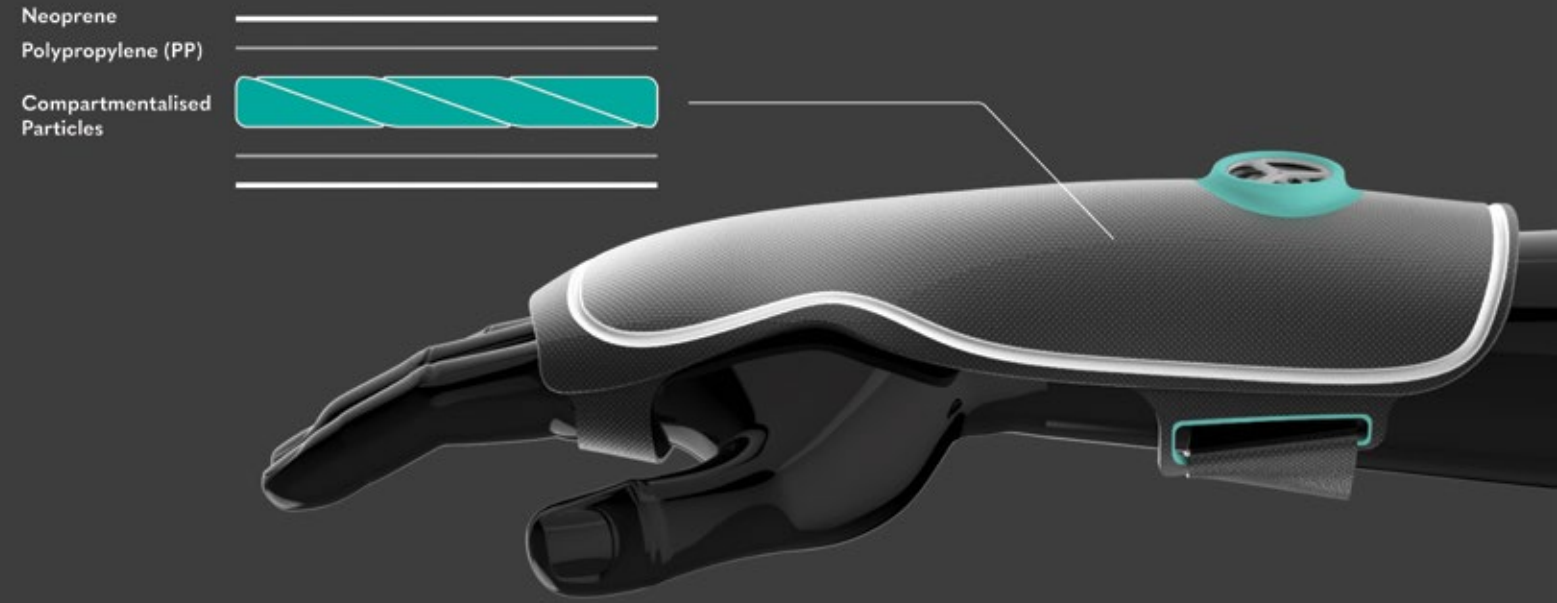
What are the material progress of membranes and technical textiles?



DEFLATABLE/INFLATABLE WRIST GUARD ▼

Personal wrist support for bowling with individualised fit via inflation and deflation.

Tay Ze Jun Wilmer



INFLATABLE NECK GUARD ▲

The existing foam-filled neckguard is re-innovated as a collapsible, inflatable one for easier removal from patient.

Yeo Ren Jie

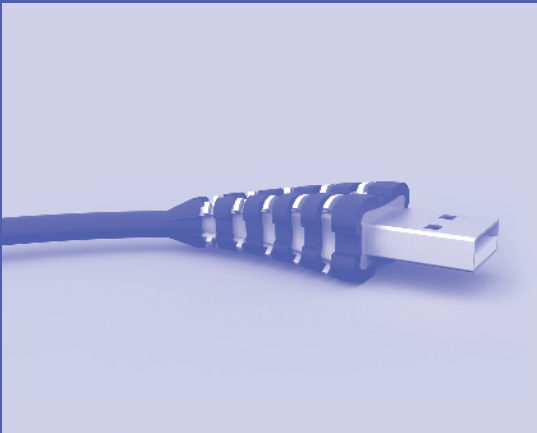
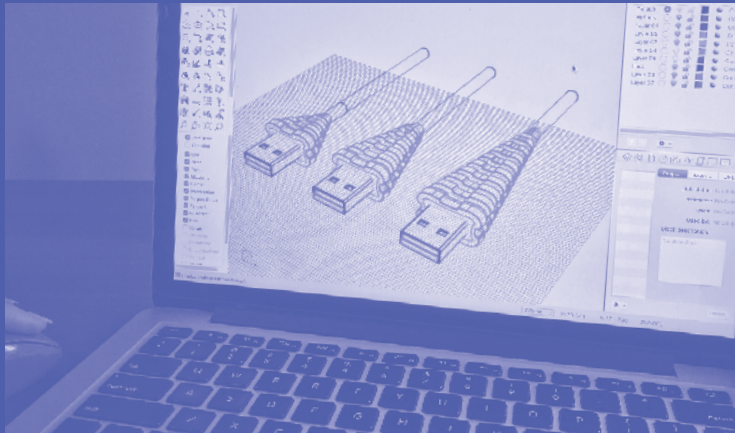
DEFLATABLE POINTE SHOE TIP ▲

Innovative pointe shoe tip which adjusts to the dancer's individual toes by deflation.

Stacey Yip Yi Zhen

BIONIC DESIGN (DESIGN PROCESS)

PLATFORM LEADER
Martin Danzer



Research on Biological Phenomena

We began by researching widely on naturally occurring structures, their functions and how these functions are fulfilled (e.g. woodpecker's shock absorption capabilities, scallop shell's crack resistance). The seahorse held our interest, with a unique spinal structure of bony plates that enabled flexibility while being resistant to crushing.

Identifying Research Opportunities

Looking at existing structural and technical applications where there might be opportunities for bionic redesign, we saw value in redesigning phone charging cables. Fraying cables is an everyday problem many people face, with little innovation or solutions provided.

Inspiration to Application

With a target in mind, we could now truly start the ideation process. We did quick sketches to get a sense of how the seahorse's structure could be integrated into a standard cable. We created paper prototypes of the spinal plates to better understand how they interacted depending on shape and size.

Iterating through CAD

Through CAD, we created many iterations and simulations to determine parameters such as optimal strength to flexibility ratio, best length for stress distribution and storage, distance between ridges to allow maximal deformation without stressing the cable, and optimising the amount of material used.

Investigating Manufacturing Feasibility

Manufacturing is an integral consideration in the viability of a design for mass commerce. We examined the existing process of cable production, to determine how our design should be produced to retain its structural integrity without affecting existing production lines.

Creating the Final Product

After adjusting our design for manufacturability, a finalised model was created. Remaining touches including material and finish were added. With that, RAX translates the principle behind the seahorse's resistance to crushing, into compressibility which prevents cable damage.

BIONIC DESIGN

PLATFORM LEADER
Martin Danzer

Bionic Design is a Design and Engineering methodology, which is transforming functional principles found in nature into technical applications. Bionic Design derives new, innovative design solutions, utilizing state-of-the-art technology like Generative Design, FEA Simulation and Additive Manufacturing. This methodology is rather different from Biomimicry or Biomimetics, which mimics natural phenomena with technical means.

BIO-BRACE



Post-surgery knee brace with internal macro- and micro-trabecular structure for maximum strength and minimum weight, while the inner silicon layer distributes weight and relieves stress from the kneecap and ligaments.

Christine Yap Ee Ling, Chew En Wei, Teng I Ling, Martin Dellinger



RAX



RAX, a bionic inspired design solution that reduces cable fraying by bridging the disparity in structural strength of the cable head and cable due to its strain relief design with multi-axial bending and elastic deformation.

Priscillia Lim, Lai Hoi Bing, Foong Haw



FLIPSOL



Our bionic inspiration is the ladybird which holds a massive wingspan for its tiny body size by folding its wings (University of Tokyo). We replicated the pattern on paper to understand the mechanism and derive an symmetrical abstract version. The mechanism is applied to portable solar panels which allows a compact product but maintaining solar integrity and surface area. The material of the solar panels and protection layer is thin yet sturdy. Special thanks to SERIS.

Soo Woei Perng, Teh Xing Lei, Laura Bijl

SYNESTHESIA FOR EVERYONE

PLATFORM LEADER
Dr. Yen Ching Chiuan

TEACHING ASSISTANTS
Ivan Tan Yuwen
Mandi Lee
Sim Yong Jie
(Keio-NUS CUTE Center)

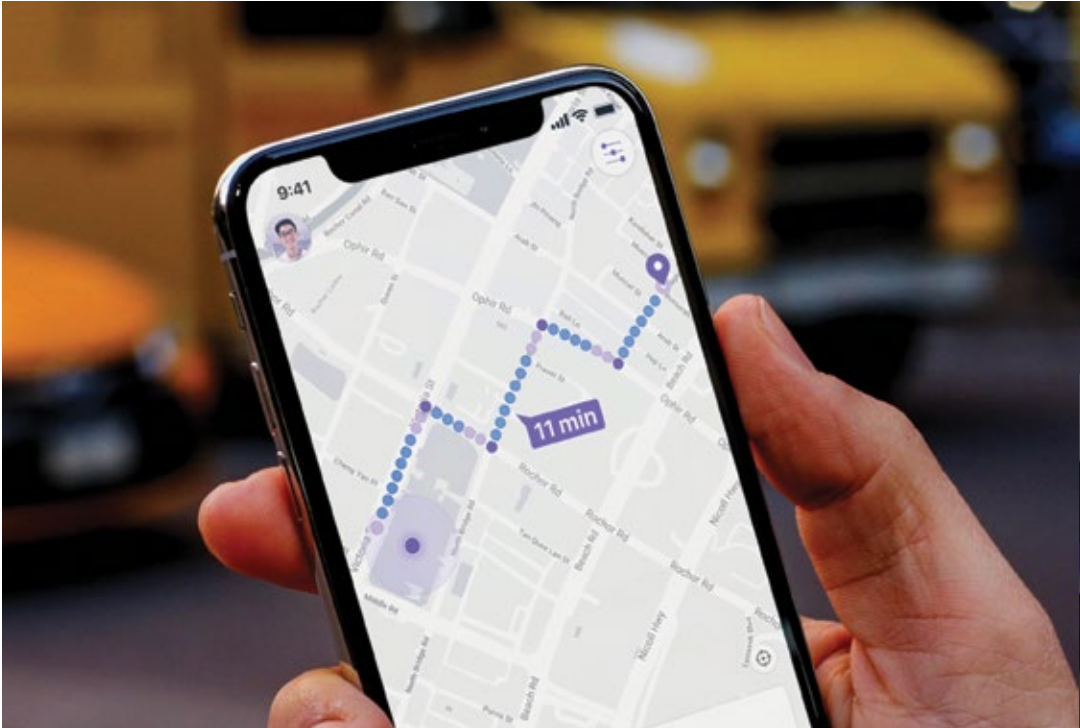
Synesthesia is an anomalous blending of the senses in which the stimulation of one modality simultaneously produces sensation in a different modality. In this platform, students collaborated with Keio-NUS CUTE center to design an exhibit that intrigues senses through the use of interactive modalities. Students were free to design with imagination, asked to push the boundaries of the current state of Human-Computer Interaction, and created a working prototype to provoke the use of different senses.

开 KAI

V

Growing up, children get busy chasing their own lives. Asking “Have you eaten?” is a parent’s passive way of showing their child concern. Food has a very special place in a parent and child’s relationship. As we celebrate by feasting, could we share this moment of joy with someone else? kai - a food cover that allows those away from home, to leave a little love for those at home.

Sen Fong Ling



SOLO

^

In today’s world, we are able to explore an unfamiliar city with a few clicks of our smartphones. As a result, we have developed a technological dependency that inhibits our natural wayfinding ability. With SOLO Haptic Navigation Insoles, we can recapture this ability by feeling our way through the world instead. Remember traveling is not just about the destination but enjoying the journey.

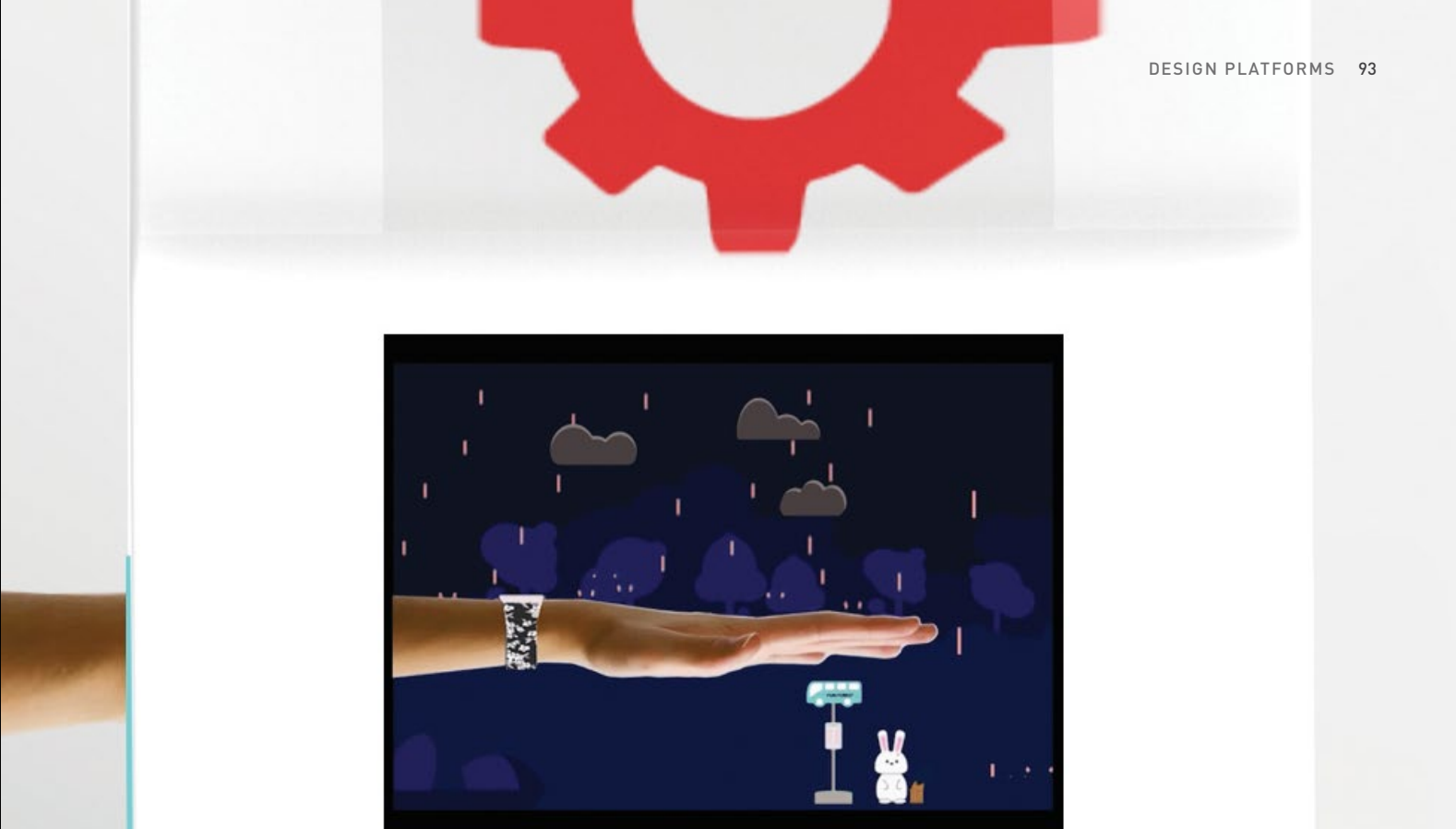
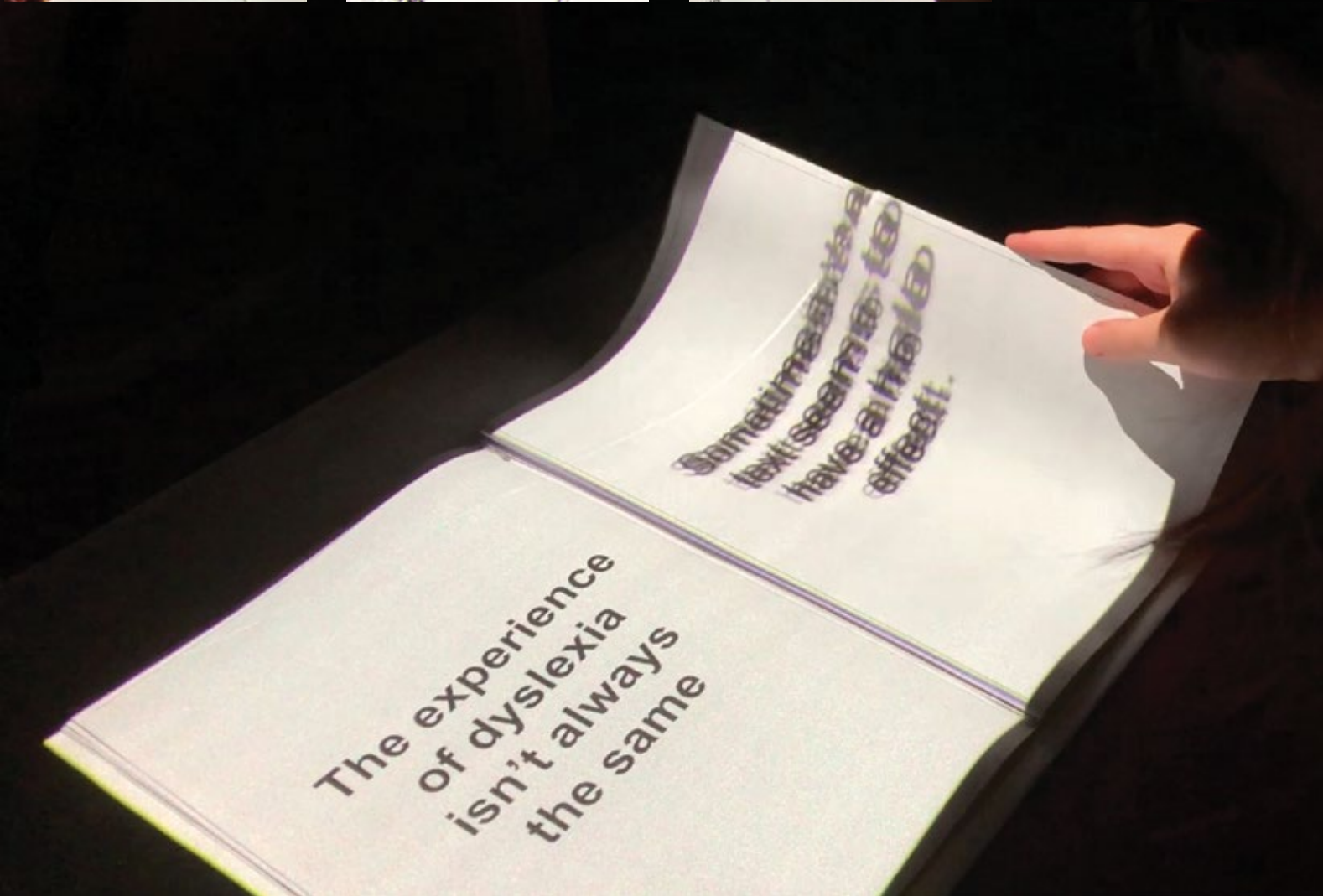
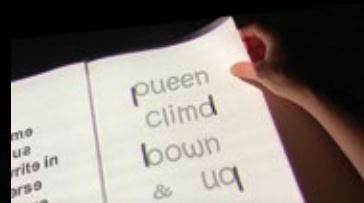
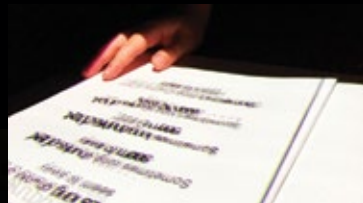
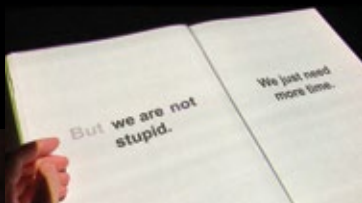
Uyen My Cindy Tran

BEYOND THE SURFACE

PLATFORM LEADER
Yuta Nakayama

In this studio, we have explored design opportunities in creating sensory experiences with digitally augmented surfaces. Students are tasked to extend a material surface by adding digitally augmented layers through the creative use of physical objects combined with digital display technologies such as a digital projection, LCD panels, programmable LEDs, sound and haptic feedback devices.

The design outcome is presented as an interactive installation to evoke natural behavioral reaction against our own audio, visual, haptic and cross-modal perception through the experience.



DYSLEXPERIENCE

The Dyslexperience is an empathy book designed in response to a general lack of understanding about dyslexia in Singapore. With the enhancement of projection mapping on the physical surface of a book, the experience communicates the emotional ordeal faced by dyslexics everyday, allowing those who do not understand to see from the lens of those with dyslexia, making the invisible diagnosis visible.

Ng Ai Ling, Yong Zi Fong

CROSSOVER

This project explores the use of digitally augmented surfaces to create an interactive retail experience of the Swatch brand. The screen on the stand prompts them to place their hand into the stand's interactive space. Through the screen, they see their hand entering an animated world as if their hand is part of the alternate reality with each design having its own animated tale.

Lin Qiuxia, Shen Fang Yu Tracy

MATERIALITY OF SERVICE DESIGN

PLATFORM LEADER
Dr. Jung-Joo Lee

TEACHING ASSISTANT
Esli Ee

IN COLLABORATION WITH
GovTech

Six student teams collaborated with GovTech, aiming to design for new Government Digital Services that support important moments of our life. The project focused on three topics: 1) financial planning for young couples for home purchase, 2) successful aging-in-place, and 3) end-of-life planning and post-death settlement. The students explored people’s experiences and future dreams through Service Design approaches and designed service prototypes for new service eco-systems where digital and physical touchpoints are orchestrated to deliver smooth and pleasurable experiences.

JOURNEY

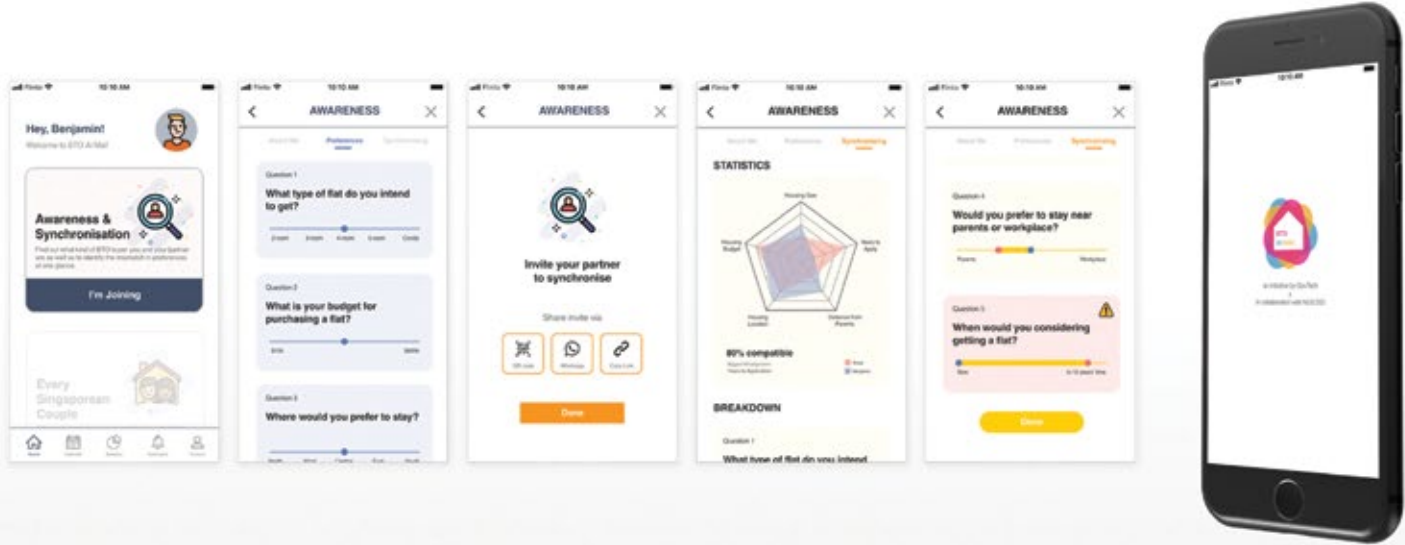
Journey is an all-in-one platform that enables executors to better handle post-death settlements, an emotionally and administratively exhausting responsibility. It consists of a file and an information booklet that outlines the entire process, and an online platform that provides users with customisable step-by-step guidance, coordination with involved family members, and financial recording.

Carina Lim Yu Shan, Mireille Lee Jin Ern, Zhang Hanwen

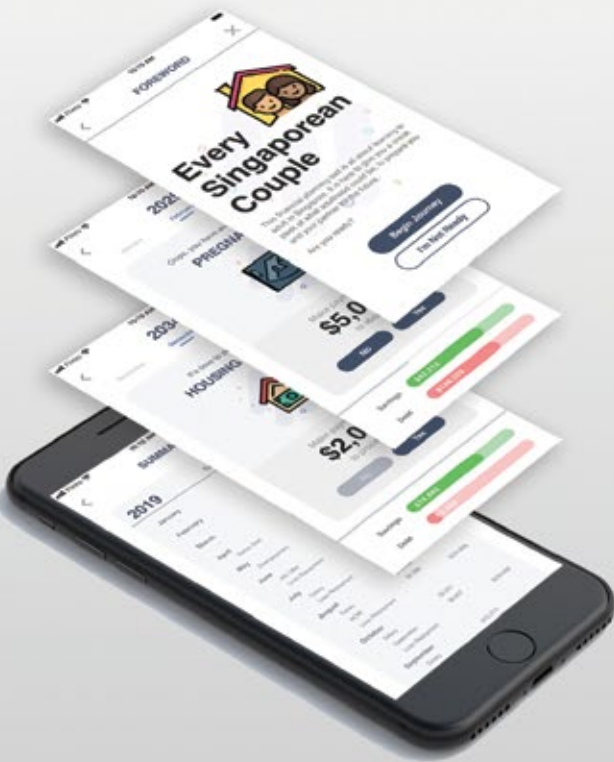
BTO AIMAI

BTO Aimai is a financial planning system for young couples planning to BTO (build to order). It aims to intervene in couples’ BTO journey before application by simulating potential future expenses to encourage the purchase of flats within their financial means.

Germaine Tan, Lim Wei Lin Winnie, Xavier Teo Xuan Kai



BTO Simulate: Introduces potential financial situations to encourage better finance management.



BTO Sync: Identifies couple’s housing preferences and gets them to resolve any misalignments.



BTO Kit: Streamlines process of preparation for HDB hub visits.

SMART PORT 2025

PLATFORM LEADER

Dr. Jung-Joo Lee, Prof. Virpi Roto (Aalto University), Erik Chua, Anthony Howe, Yvonne Yeo, Tse Pei Ng

IN COLLABORATION WITH

PSA, Jurong Port and Rolls Royce

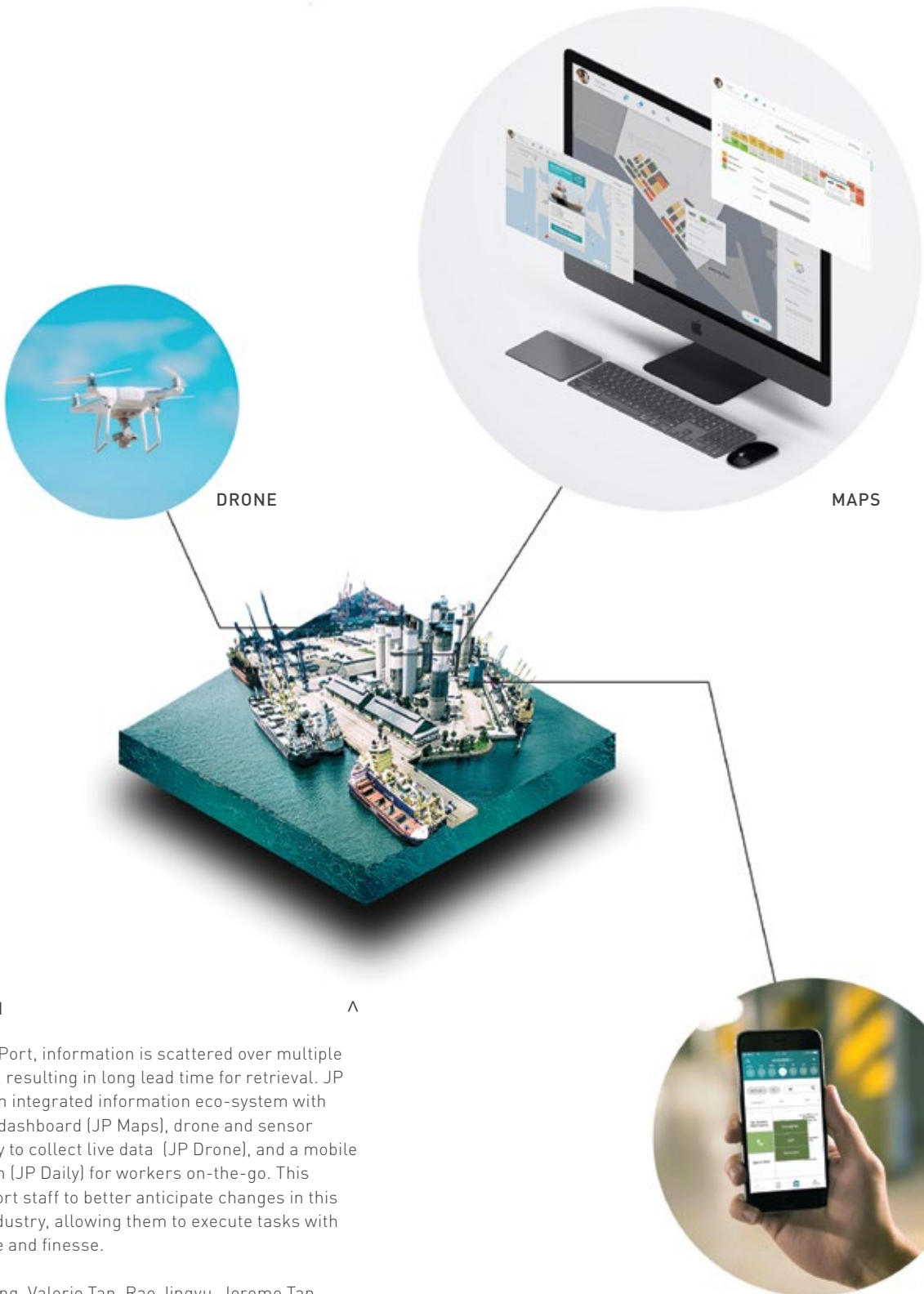
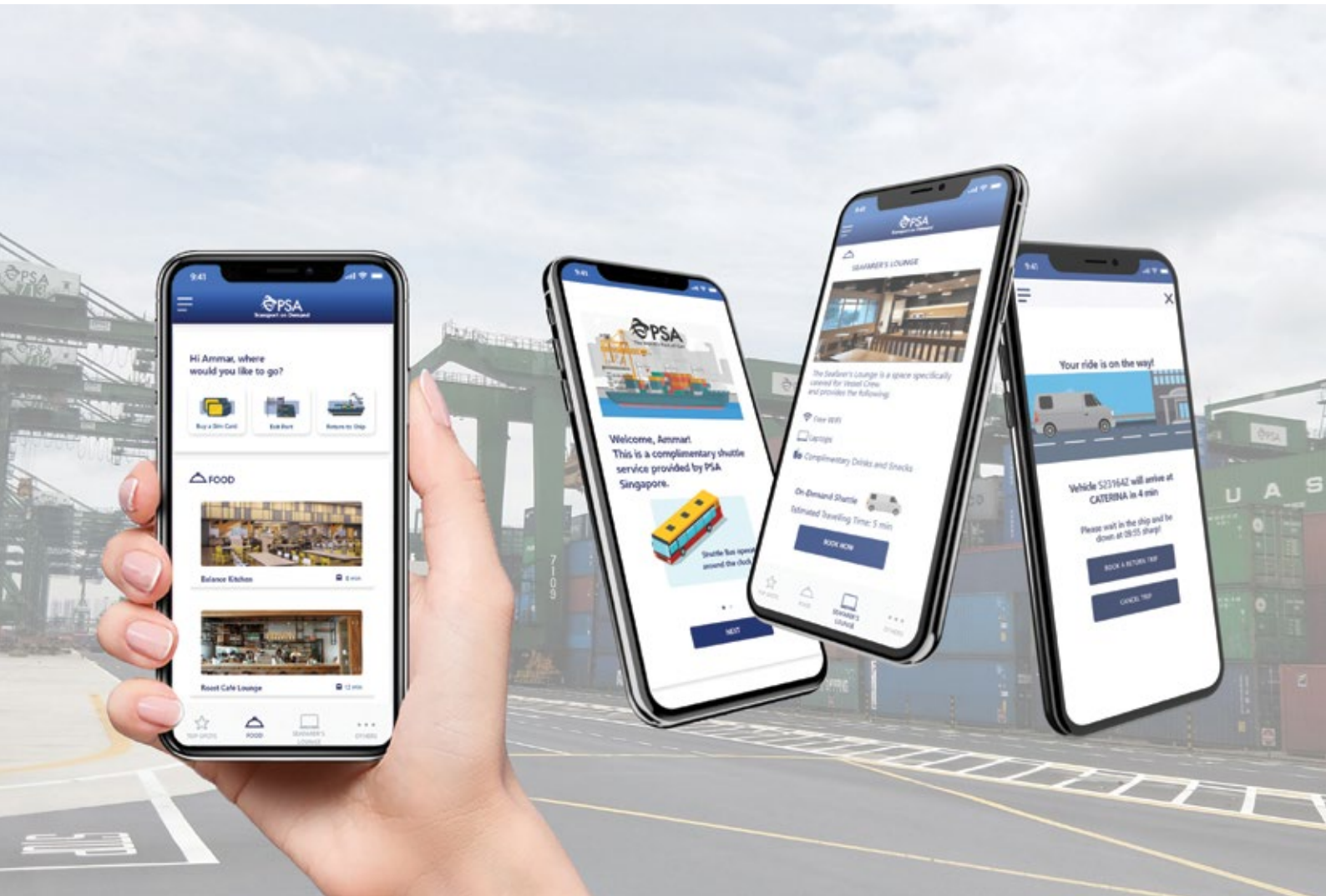
Ports in Singapore are undergoing huge industry innovations with automation and digitalisation, especially with the Tuas Mega Port national project. This project helps the Ports achieve their digital transformation journey from human perspectives. Applying Service Design and User Experience Design to understand the needs of stakeholders in complex networks, we create innovative ideas for new work processes and environments, integrating emerging technologies like machine learning, drones, and context-aware technologies. The project also identifies the future role of design in this new B2B industry.

TRANSPORT ON DEMAND (T.O.D)

V

Transport on Demand (T.O.D) is a proposed service which primarily assists vessel crews in navigating the highly automated Tuas Mega Port. Its main structure of profiling users helps to curate information to the respective accounts. Its versatile usage includes discovering amenities, booking of PSA vehicles for staffs, as well as a navigation guide for external contractors and new recruits.

Christine Yap Ee Ling, Jaylin Yeo, Ashley Tan



JP VISION

^

In Jurong Port, information is scattered over multiple platforms, resulting in long lead time for retrieval. JP Vision is an integrated information eco-system with a curated dashboard (JP Maps), drone and sensor technology to collect live data (JP Drone), and a mobile application (JP Daily) for workers on-the-go. This enables port staff to better anticipate changes in this volatile industry, allowing them to execute tasks with confidence and finesse.

Yong Zi Fong, Valerie Tan, Rao Jingyu, Jereme Tan

DAILY

FOUNDERS' MEMORIAL

PLATFORM LEADER
Ash Y.S. Yeo

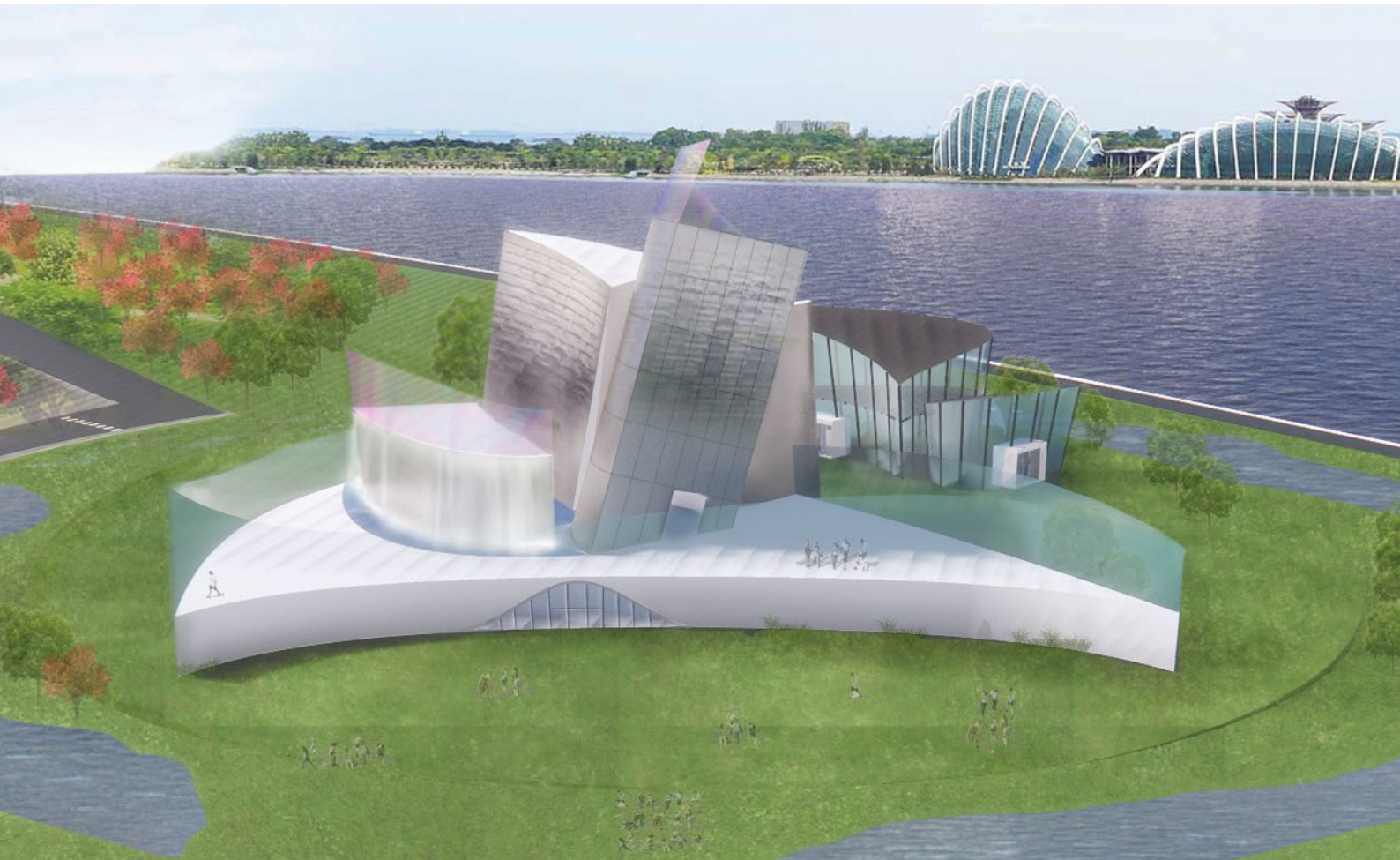
In investigating narratives, a designer gives fresh and meaningful experiences to objects and architecture, by twists of asking highly curious & interesting questions. As identity values, heuristic design poetics woven within the narrative timeline of Singapore's varied histories narrate a string of apt memes, to collectively give architectonic form allegories for sustainable memorials. Phenomenal design then draws aspirational qualia, moods and vibes, thus inspiring ephemeral experiences within all of its felt exhibition spaces.

CORONA: THE CROWNED JEWEL OF THE SOUTHEAST

V

Like a watermark, Singapore as an island state is like a palimpsest of remarkable events being forged. Like the whirlfires of a Corona, eclectic cultures infuse with burning spirits. Like a Crowned jewel, its leaping flames fan a driven city across the days and nights, across time, with devoted passion.

Joel Loo Choon Kiat, Boh Ern Chi Jeraldine,
Jeraldine Low Jia Yu, Uyen My Cindy Tran



FLARE OF THE PROTOSTAR

Λ

Ribbons weaving the flux of a Protostar confluence our histories, myths, our Founders and one People. Lit with red Flame of the Forest, a City in a Garden, we herald successive seasons of harvests. Flaring Dichroic, a canopy thus crowned, a Protostar ensconces us with its Zephyr.

Anastasia Di Lorenzo, Ang Kay Li, Gui Xixian,
Nur Diyana Aqilah Binte Salam

SPECULATIVE FUTURES

PLATFORM LEADER
Donn Koh

Designers possess a unique combination of skillsets which enable them to imagine plausible future scenarios based on the mature understanding and extrapolation of cultural and technological change.

This imagination, combined with their ability to give visible manifestation to speculated products and services, enables them to raise possibilities and help others to also perceive the future - and ask the important questions that come with progress and change - before they eventually arrive.

THMB7

▼

What is the future of our human body?
We have all heard about replacement hips, prosthetics, and even knee joints. Having technology be part of the human body is becoming more commonplace, so much so that some artificial enhancements may seem unnecessary. Can there be a case of enhancing 'functionality' too much? Can we say that the artificial is better than what we were born with?

Lim Jing Jie



FUTURE OF BIOMETRICS

^

With digitisation on the rise, increase in security breaches are inevitable. Trends suggest that biometric verification technology is the pinnacle of security and is growing exponentially. But is it truly secure when we leave our biometrics around in our everyday lives? With future technology advancement, identity theft would be ever so possible. This collection features an iris pattern and thumbprint thieving tool.

Once our biometrics are compromised, we can't change them, or could we now? To keep data secure, we have to constantly update our "passwords". This collection comprises of a iris pattern changing and a fingerprint changing device.

Tan Zijie

HOMBE

^

Outsourcing everyday tasks to technology to make our lives easier has become a common phenomenon. Introducing Hombe - a multi-functional side table that also acts as an artificial womb. If challenging journeys like child labour can be replaced by convenient and painless solutions, does that change their value? Ultimately, what is the limit of what kind of tasks we should outsource to technology?

Carina Lim Yu Shan



EXCHANGE PROGRAMME

VISITING STUDENTS

NUS welcomes exchange students during both semesters; they participate in both Design Platforms as well as additional electives. Here are some of the students who joined us during AY 2018/2019.

Defenin Clement Dominique Guy
Mantas Anastasia Elena
Darr Logan Michael
Juulsgaard Aleksander Peter
Deveau Victoire-Amelie Nathalie Marie
Dellinger Martin Louis-Marie
Brouwer Sascha Avinka
Bijl Laura Maartje
Drost Danique Esmee
Sugimura Yuki
Tammy Vu Pham
Rosbottom Reid William
Tran Uyen My
Kim Sarah J
Leroy Josephine Michele Colette
Yang Yu Jou
Di Lorenzo Anastasia
Rao Jingyu

University of Illinois, Urbana-Champaign, USA
University of Illinois, Urbana-Champaign, USA
University of Illinois, Urbana-Champaign, USA
Technical University of Denmark, Denmark
Strate School of Design, France
Strate School of Design, France
Eindhoven University of Technology, Netherlands
Eindhoven University of Technology, Netherlands
Delft University of Technology, Netherlands
The University of New South Wales, Australia
Georgia Institute of Technology, USA
Georgia Institute of Technology, USA
Georgia Institute of Technology, USA
Georgia Institute of Technology, USA
ISD Rubika Valenciennes, France
National Cheng Kung University, Taiwan
Politecnico di Milano, Italy
Tongji University, China

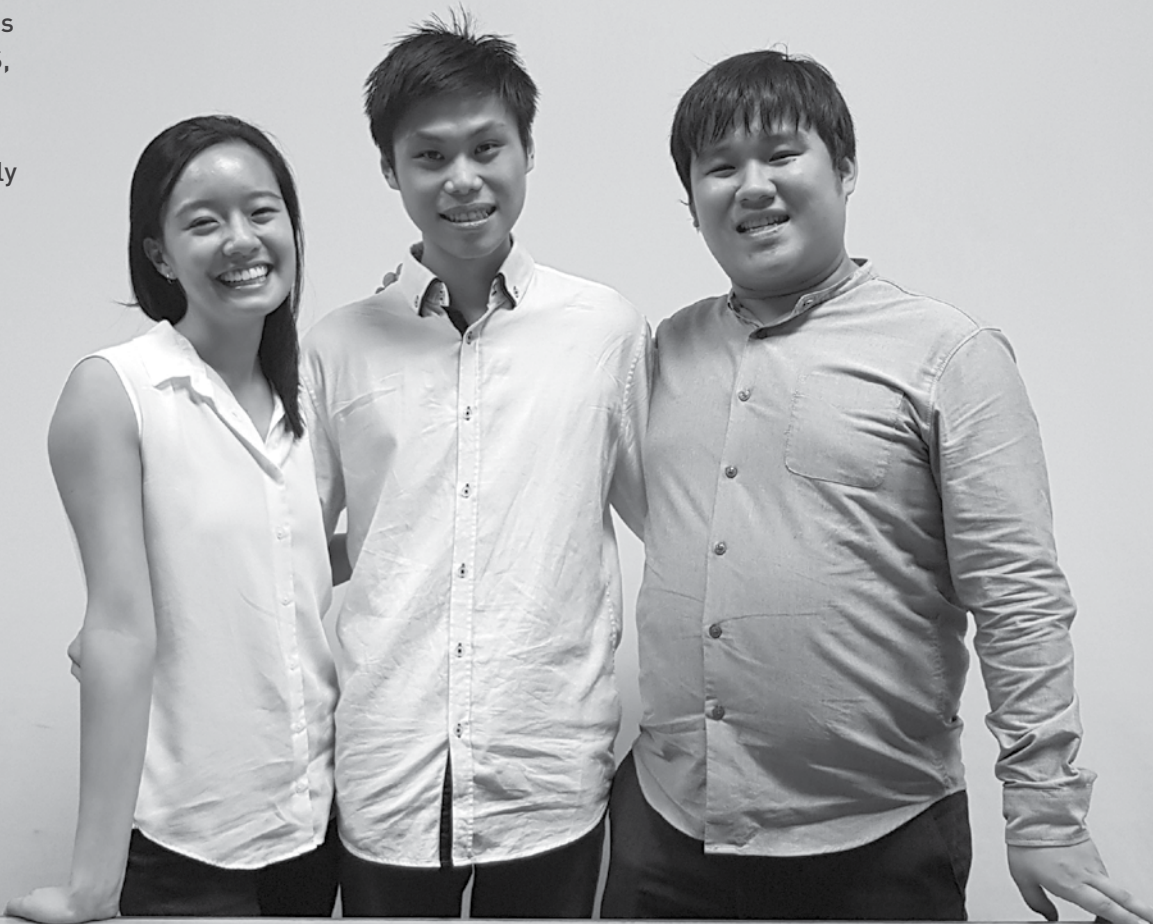
“I loved the Kickstarter project, it was really cool, we didn’t do things like that in my university. We also don’t have vertical platforms, which I really liked about NUS. I think it’s better for all the years to work together than to work separately. ”

Logan



“Some of the most difficult design challenges I’ve had in my education thus far was while I was studying at NUS, and the great people here really helped in driving my design success. I’ll definitely remember all the good company and late-night studio dinners!”

Tammy



“It’s really memorable that people here really take time to eat together. And everyone will always ask ‘Have you already eaten?’ If you’re already late to school, and had a meeting at 12.30pm, they don’t ask why are you late, but have you already eaten? It’s like your no. 1 question here. And the work mentality of the people here; it’s very nice to see how everyone’s so hardworking, staying awake till very late in studio.”

Sascha

EXCHANGE PROGRAMME

To broaden the students' exposure, two-thirds of each cohort go for a one-semester overseas exchange programme during their 3rd year to distinguished design schools. Our partner schools include:

Delft University of Technology, Netherlands
 Eindhoven University of Technology, Netherlands
 Georgia Institute of Technology, USA
 University of Illinois, Urbana-Champaign, USA
 Korea Advanced Institute of Science & Technology, KAIST, South Korea
 Monash University, Australia
 Tsinghua University, China
 Zhejiang University, China
 National Cheng Kung University, Taiwan
 Kyoto Institute of Technology, Japan
 École Nationale Supérieure de Création Industrielle, ENSCI Les Ateliers, France
 École Nationale Supérieure des Arts Décoratifs, EnsAD, France
 Strate School of Design, France
 ISD Rubika Valenciennes, France
 Folkwang University of the Arts, Germany
 École Cantonale d'Art de Lausanne, ECAL, Switzerland
 Instituto Profesional Duoc UC, Chile
 Politecnico di Milano, Italy



NUS OVERSEAS COLLEGES

NUS Overseas Colleges is a university level unit of the NUS Enterprise Cluster that manages the highly innovative NUS Overseas Colleges programme. The programme targets NUS undergraduates with the academic ability and entrepreneurial drive, keen to be immersed as interns in start-ups located in leading entrepreneurial and academic hubs of the world. At the same time, they will study entrepreneurship related courses at highly prestigious partner universities. The aim is to cultivate and nurture them into enterprising, resourceful, independent self-starters and eventually blossom into successful entrepreneurs.

Today, there are colleges in Beijing, Israel, Lausanne, Munich, New York, Shanghai, Shenzhen, Silicon Valley, Singapore, Southeast Asia, Stockholm, and Toronto.

STOCKHOLM

NOC was hands down one of the highlights of my university journey. Tucked in the streets of downtown Stockholm, I was a UX design intern in a creative digital agency called North Kingdom. Working on many digital projects such as Scout View, a web platform that allows everyone to experience the beauty of Nordic landscapes through Google Street View, I was exposed to interaction design, subsequently falling in love with digital craftsmanship and creating meaningful user experiences.

Yong Zi Fong

SHANGHAI

NOC was also a good time for informal design education. I went for many events and learnt from many people how design is at the forefront of today's tech products. On top of that, we got many opportunities to look at how successful companies function, such as the visit to Alibaba HQ in Hangzhou. All these contributed to my global outlook as a designer, and how localisation plays a crucial role in how us as designers should function in a global context.

Koh Kang Zhi



NEW YORK

The NOC programme opened my mind to the world of entrepreneurship. I learnt that failure is part of the learning process and not to be afraid to try new ideas. Because the people who are crazy enough to think they can change the world, are the ones who do. It's been almost a year since I returned from New York, but the visceral sensation of excitement still remains like day one.

Hansel Wong

BEIJING

I worked in a start-up called Magicast that develops Mixed Reality software and hardware in Beijing. During my internship, I learn that designers need to be able to wear multiple hats and adapt to the ever-changing landscape in the tech industry. My role as an industrial design intern allowed me to work closely with engineers and understand the work flow in a R&D company better. The entire NOC experience has been so fulfilling as it improved my abilities to execute different roles, molding me into a well-rounded designer.

Leung Jia Jun

2019 GRADUATING STUDENTS

The Design Thesis provides students with the opportunity to demonstrate their individual design abilities through the execution of a Major Design Project. The Thesis ensures that students are sufficiently competent in research which is an integral part of the design process.

At this final year level, students would learn to form and evaluate value judgements on design decisions that ensure design proposals meet with rationalised and functional criterion as well as less tangible qualities of the aesthetic. Successful graduates will demonstrate competency in product/ industrial design, healthcare design, interaction design, experience design, service design, speculative design, commercial design, social design, or experimental design.



ANDRIANA JUSTINE

Andriana designs to better appreciate what already exists. She is addicted to questions and teh peng.

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issuu.com/andriana.justine

NECTAR



Homely artefacts often remind us of a time that has passed, but Nectar points towards the time we may have left. Nectar is a bespoke timepiece set for the family. It relies on the evaporation of fragrance oils, tailored to each person's life expectancy. The temporality of life is one thing we know for certain, yet it is the thing we take most for granted. Would you wish to be reminded of it?

Under the supervision of Donn Koh

D TRESTLE



D Trestle is made of dowels in dowels. Paying tribute to the precision and subtlety of Japanese wood joinery, it features a natural yet iconic silhouette. Two can hold a table top. Individually, it serves as temporary seating for guests.

Designed with Janna Tan
In collaboration with Supermama



LEVIT8



Bringing a magical twist to portable sit-stand desks, Levit8 was 1461% funded on Kickstarter in 2015. No parts, no assembly. Its stable origami structure allows it to shapeshift into a flat folio with one unfolding gesture. Now available in selected stores.

Designed with Letitia Lim and Poh Hui Qing



CHRISTINE YAP EE LING

Christine likes that design pushes her to think of fresh ideas and innovative solutions.

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behance.net/christineyap

DOPA BOOKS

V

DOPA is series of interactive books designed for pre-teen readers to learn about online privacy. Using engaging interactions and relatable stories, DOPA books empower pre-teens with the knowledge to make informed decisions by themselves online.

Under the supervision of Dr. Jung-Joo Lee



CUXION

Cuxion is a mouse design concept consisting of a cushion palmrest with replaceable fabric cover, inviting users to interact with its soft material. The cushion conforms to users' hands, evoking comfort in a workplace environment. This design is inspired by Humanscale, an office furniture brand that designs for comfort and ergonomics.



DEPP

<

This design concept aims to improve the ergonomics of the current standard depth gauge in orthopaedic trauma surgeries. A 360 degree scale and rotational mechanism reduces the need for awkward hand angles, improving stability and precision when obtaining measurements.

Designed with Miko Yeo
In collaboration with Dr Gavin O'Neill,
National University Hospital



DENISE YEO

Denise is an enthusiastic learner who likes to approach all things with optimism. With her motto to design from the heart, she finds joy in designing for things she can relate to and believes that design should be a collaborative process to create meaningful outcomes.

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deniseyeo.weebly.com

ARE YOU READY?

V

“Are you ready?” is a quiz that assesses the readiness of potential pet owners before acquiring pets to reduce impulsive acts.

It allows users to self-assess themselves to make informed decisions and can be a tool used by pet shops and shelters to ease their responsibilities when assessing the suitability of potential owners.

Under the supervision of Song Kee Hong



PRO-PORTION

^

Pro-portion is a family of products that works together to help us visualize what a balanced diet looks like on a daily basis. It consists of a mirror and scale, that records your height and weight, a mobile application that generates meal suggestions based on your dietary needs and the plate that serves as a visual guide in portioning meals with its graphical patterns.

Designed with Caitlin Foo and Valerie Tan

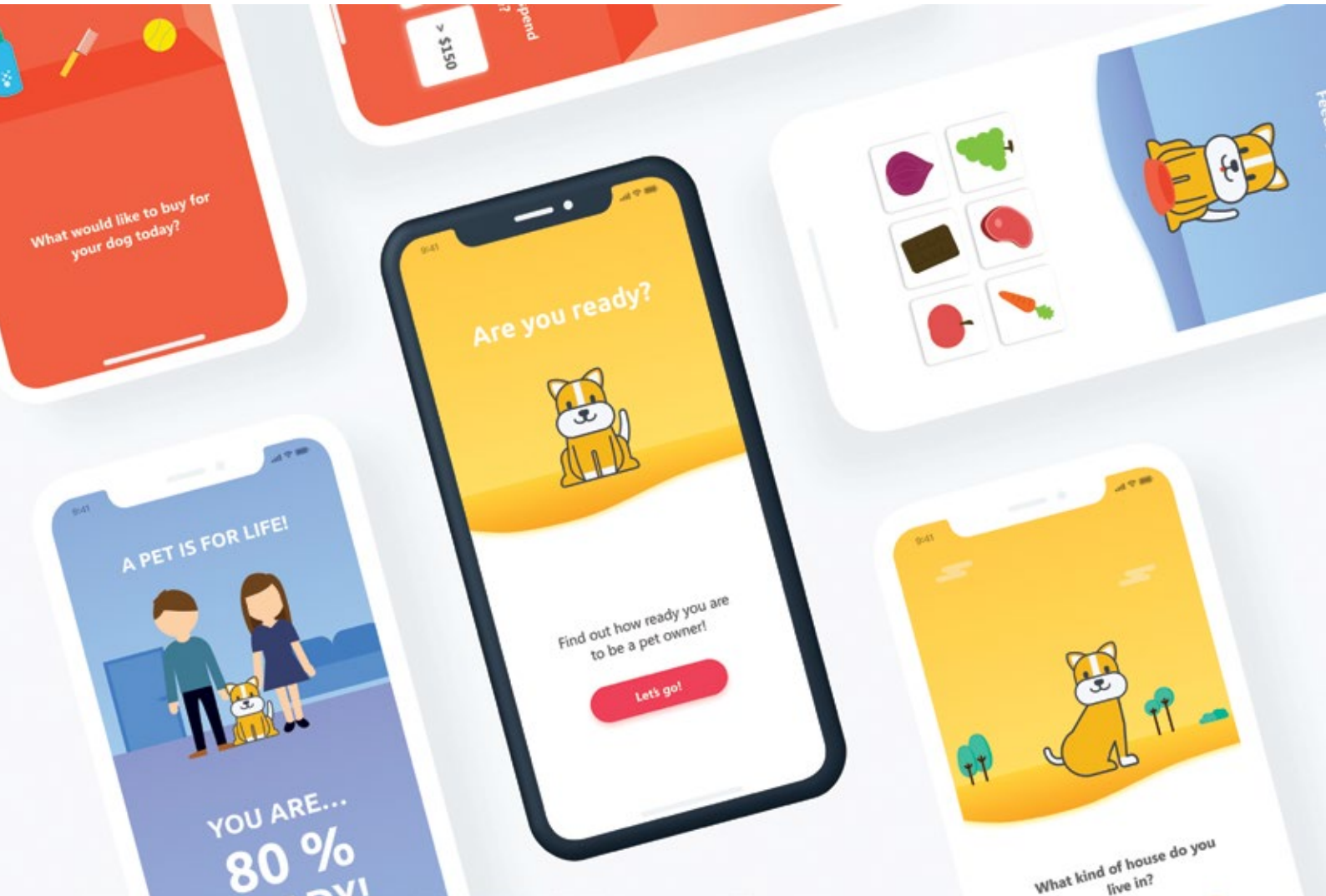


GENERATIVE LEARNING KIT

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Informed by the values of flexible communication of service principles and enhancing staff creativity and motivation, the CARE-lender is a personal “bite-sized” guide that utilises generative questions to prompt frontline staff towards discovery-based learning and self-reflection. The Eureka! Board is a tool designed to empower staff to engage in peer-to-peer learning and micro-innovation.

Designed with Matthew Soon and Valerie Tan
In collaboration with Ministry of Education,
Bendemeer Primary School





HAN YUEN WEI HAYLEY

Yuen Wei loves to analyse situations in complex systems and is always amazed by how each one of them co-relate as though they are having a dialogue with one another. She truly believes that the best ideas happen when you are in the right place, at the right time, and with the right people.

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behance.net/hayleyhyw

CUP0

V

Cupo is a cup sharing system to encourage the reuse of coffee cups by designing the new to-go coffee experience. It seeks to provide a network system for drinkers to consume to-go coffee in the CupoCup in a more sustainable manner. With CupoCafes situated across the country, drinkers can conveniently rent and return their CupoCup at any CupoCafes with the CupoApp.

Under the supervision of Song Kee Hong



NEARBY ME

^

NearBy Me empowers drivers by communicating the essential information gained from the car's powertrain systems. It provides an interactive network for drivers with Car Help, Find Nearby and Car Health modes. These features are designed to seamlessly communicate with nearby services that are required by the car and to maintain the car's health by educating the driver the knowledge of their own car.

In collaboration with Valeo Powertrain Systems, France



ELECTRO

^

Electro facilitates effective learning of the electrocardiogram (ECG) for medical students. It aims to familiarise students using multiple examples and visual cues, such as colour coding to bridge 2D to 3D information with respect to the lighted pathway of the heart. The interactive setup strengthens their structural understanding of the heart, hence more deeply inscribing their learning to memory.

Designed with Ysanne Yeo and Teresa Khoo
In collaboration with Keio-NUS CUTE Center and
Yong Loo Lin School of Medicine





HANNAH TAN

Hannah loves seeing things through to practical solutions, leaving them better than how she found them. She spells her name backwards most of the time.

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behance.net/hannahhannuh

RE-SEARCH



Re-search: the search for new approaches tailored to conducting research with elders in the local context. By simply reframing the way we pose questions, we end up with broadly different responses. The framework, Engage, Evoke and Extend, each with its tools, shapes the conversations that we have and enables elders to share their life and their voice.

Under the supervision of Dr. Yen Ching Chiuan



TOYS UPON A LAND



Toys Upon A Land serves as storytelling tools that marry the play on land and underwater seamlessly for children. Surprise comes first through the discovery of characters upon activation with light or water and then through the cross match between the forms of the land and underwater characters. The amazement of watching the reversible change never gets old.

Designed with Yang Yang and Shermaine Boh



SPEEDBUMPS



Speedbumps are barriers that latch onto the aperture of existing recycling bins. Its just-in-time position deliberately slows down thoughtless recycling by physically impeding larger contaminants from entering the bins. This prevents careless contamination of recyclables already in the bin and facilitates proper recycling.

Designed with Ching Soon Tiac
In collaboration with NUS Office of Facilities Management



HO PUI YNG

Pui Yng enjoys tinkering around with the abstract, designing ladders... to a door atop a rosy cloud... to a window deep within a sparkling sea... if only to elicit one's ecstasy!

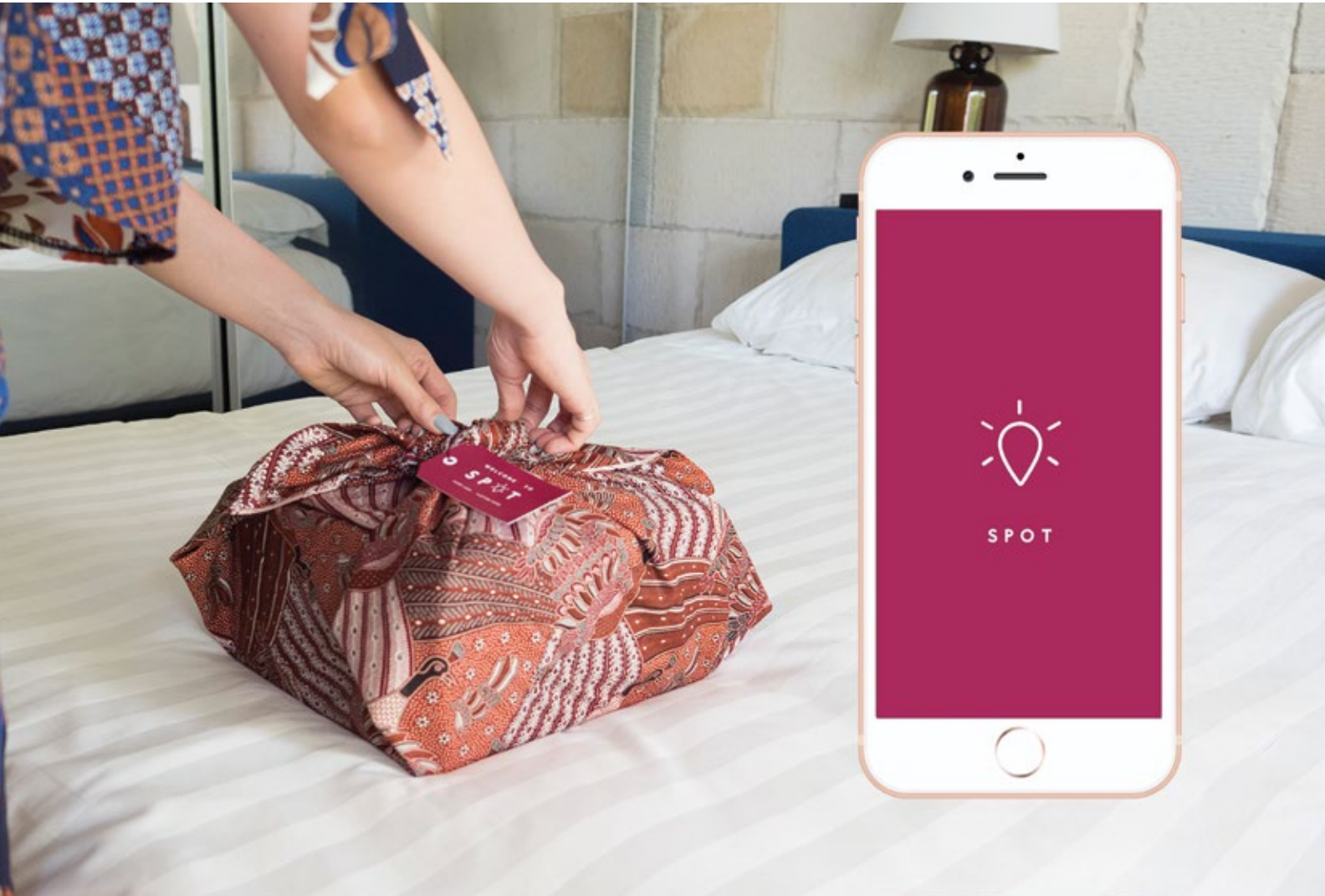
puiyng@gmail.com

SPOT



Designed to inspire meaningful travels without a suitcase, SPOT is a service that invites travellers to "Carry Less and Capture More" for an immersive local experience! Together with a personalised box that has been locally curated at the destination, SPOT features an app that imbues exploration with the joy of discovery, in which special moments can be captured and gifted as experiential souvenirs.

Under the supervision of Christophe Gaubert



THE LANGUAGE FOR FOOD



Designed to translate the complexity of memories into food, the Language for Food captures 3 important parameters of our memories: visuals of experience, physical sensations and emotions, and translates them onto the colour, form, taste and texture of the snack. As a vessel for memories, the snack can commemorate anniversaries, milestones, travelling experiences... And in future, tell new stories.

Designed with Poh Yun Ru



HAPS-TABLE



Proffering serendipitous discoveries, Haps-table immerses cafe readers with their own narrative stream of consciousness, to connect with other future revellers in absentia. Meaningful spirits are colourfully interlaced, the world made a less lonely place in faith, and with genial imaginations.

Designed with Khoo Yin Qi



HUANG MINXIAN

MX is an analogue and hands-on designer, interested in making meaning of the mundane.

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FERMATA ↻



A Fermata (sign above) is a musical symbol indicating a prolonged note or rest. Similarly, this product invites the user to take a rest from scrolling, preferably for a prolonged period.

Fermata keeps track of your phone usage, giving you a physical quantification of your scrolling habits. As you scroll, Fermata scrolls along with you too.

Under the supervision of Dr. Christian Boucharenc



HATS



Hats is a furniture system, allowing you to change the 'hats' of your furniture legs.

POP-ITS



Pop-its is a stationery set, consisting of a notebook and post-it pad. Opening the notebook reveals pop-up tabs on its pages that complements the adhesive of the post-it pad. When used together, the post-its brighten the book pages not only with its colours, but adding some fun through the surprise of another dimension.



JACELYN LAU

Jacelyn is a curious thinker and keen learner. Being an avid Disney fan, she is inspired to tell stories through design by translating her imagination into meaningful user experiences. She values a balanced lifestyle and unwinds by playing ultimate frisbee or cuddling with Shiba Inus.

jacelynly1996@gmail.com

CLEAN CREATURES



‘Clean Creatures’ is an educational toolkit designed to motivate preschool children to clean up after meals. Through engaging characters and interactive role-play, ‘Clean Creatures’ reframes chores into purposeful play, to help cultivate good cleaning habits from young. This teaching tool enhances learning, by making classroom instructions more effective and enjoyable.

In collaboration with Sweetlands Childcare
Under the supervision of Song Kee Hong



PAPER PINNING



Inspired by the structural form of paper and pinning as a technique, Paper Pinning is a modular retail system that can be easily scaled and reconfigured across brands. Functional geometric forms are pinned to four structural bases, creating an interplay between graphical elements and three-dimensional structures. Layering this across all axes of the space creates a pure, contemporary and dynamic display to attract customers.

Winning Concept, Laureate of Shiseido Competition 2018
In collaboration with Shiseido Travel Retail Asia Pacific Pte Ltd



AUBERGINE PILLOW



The Aubergine Pillow is an inflatable pillow that pumps up generously in a single puff, yet compacts small to be brought around. Bring along the everyday comfort you deserve when napping on the go. In December 2016, it was successfully funded on Kickstarter by, reaching 450% of its original funding goal. In addition, it has been showcased on various media outlets and design exhibits.

Designed with Hor Sue Xian and John Teo





KOH KANG ZHI

Kang Zhi might be in the wrong course. He has little design flair but has an excellent entrepreneurial mind. But who cares, he graduated!

kangzhikoh@gmail.com

HYRED

Hyred is an Artificial Intelligence-powered platform that uses Natural Language Processing to rank candidates based on open-ended answers about technical knowledge of the job opening and culture fit to the company.

Under the supervision of Song Kee Hong

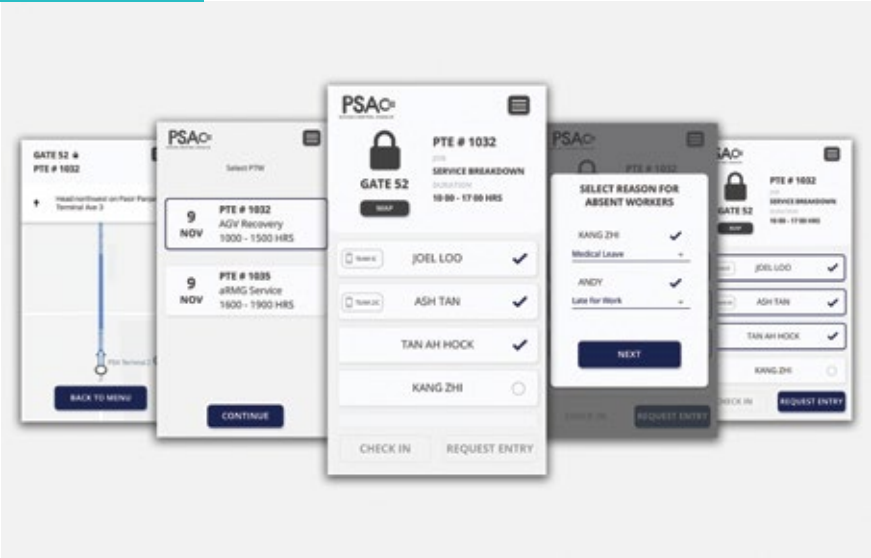


BUMP - CONNECTIONS MADE EASY



Designed to revolutionise the way we make connections, BUMP introduces the motion of bumping phones together to exchange contacts in place of exchanging name cards. It also features an AI chat system that predicts the message you want to convey during communication with a business contact, to make setting meetings and reconnecting with someone easier.

Designed with Dayna Ang, Jane Ho and Tok Xieying as part of programme requirements of NUS Overseas Colleges



PSACE - ACCESS CONTROL ENABLER



PSACE is designed as a solution to control the 200+ gates of Tuas Mega Port (the world's largest automated port) to be operational in 2021. The unmanned area generally forbids humans to enter, but workers are periodically needed for maintenance, civil and recovery works. Through surveying users for future needs, a system and UI screen for accessing the gates were developed.

Designed with Joel Loo and Tammy Vu Pham
In collaboration with PSA and Rolls-Royce



FELICIA KOH

Felicia has tiny hands, big plans, and the tenacity to make it work. With an incisive eye, she finds joy in curating colour palettes and perfecting design details. Her special talent is applying screen protectors seamlessly.

feli.koh@gmail.com

MY BEAUTY BOOK



Dementia patients can experience a loss of not only motor skills, but also a sense of identity. My Beauty Book helps to strengthen both, by introducing makeup as a form of therapeutic activity. Each page of the book guides the user through a step in the makeup routine, with the relevant products and tools embedded within the page. Moving lenticular images guide the elderly user intuitively and clearly, creating an interactive experience.

Under the supervision of Donn Koh



REVELATION



Inspired by the act of unravelling a gift box, Revelation creates the experience of curiosity leading up to discovery. The retail space comprises an interplay of large imposing walls, open spaces, and discreet alcoves, where customers are guided through passages in the space to discover Guerlain's 190 years of history.

Designed with Fong Sook Yin
In collaboration with Guerlain (Asia-Pacific)



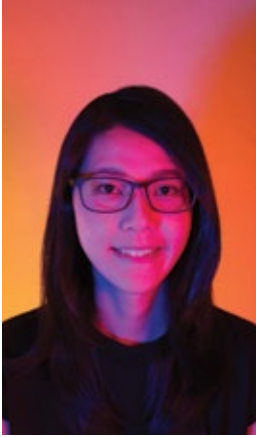
PLAY PIXEL



Play Pixel is designed for community-building initiatives for children from vulnerable families. Void decks serve as the meeting ground for residents, yet those in rental flats lack the infrastructure for social gatherings. Each child in the block is given their own Play Pixel, allowing them to create physical settings for community activities - encouraging a sense of ownership and involvement.

Designed with Maggie Seah and Ng Tse Pei
In collaboration with Ang Mo Kio Family Services Centre (AMKFSC)





KWEK AI LING ANNA

A wanderer-explorer-observer-thinker-creative. Anna walks the domains of design, science and art, with the inclination to uncover the nuances and subtleties of human behaviour and the beauty in everyday experiences. She immerses in nature, tea and books to charge her inner soul.

kwekailing@outlook.com

SSKIT



SSKIT is a skincare storage kit that seeks to integrate skincare storage naturally into the fridge. Designed to collectively and effectively store homemade and existing skincare products, SSKIT enables skincare to co-exist safely with food in the fridge.

Under the supervision of Christophe Gaubert



CALL FOR CELEBRATION



Designed for the concept store in Orchard Paragon, "Call for Celebration" celebrates Guerlain's 190 years of history through the notion of gifting. Inspired by the traditional French boutique and Guerlain's iconic luxurious bee bottle as the product focus, this store concept highlights an exclusive perfumery zone featuring a grand perfume bar paired with rows of bee bottles on the rack.

Designed with Lim Xin Yuan
In collaboration with Guerlain (Asia-Pacific)



EXTRAC



Extrac is a dental simulation kit designed for dental students to practice authentic extraction procedures. Equipped with realistic gums, ligaments and molar variations, Extrac simulates the actual challenges in extraction. Extrac can be mounted on existing Oscar heads, simulating the constraints of the intra oral environment and positioning of the body, hands and forceps.

Designed with Petrina Leow
In collaboration with Dr Intekhab Islam,
NUS Faculty of Dentistry



JULIA LEE

Julia believes poetry isn't merely the frosting on the designer cake, but also the eggs and butter. A physical and conceptual tinkerer, she has a penchant for swimming in grey areas and grasping the heart of complex phenomena. She loves being tickled by the absurd, satisfied by the rational, and finding the method to the madness.

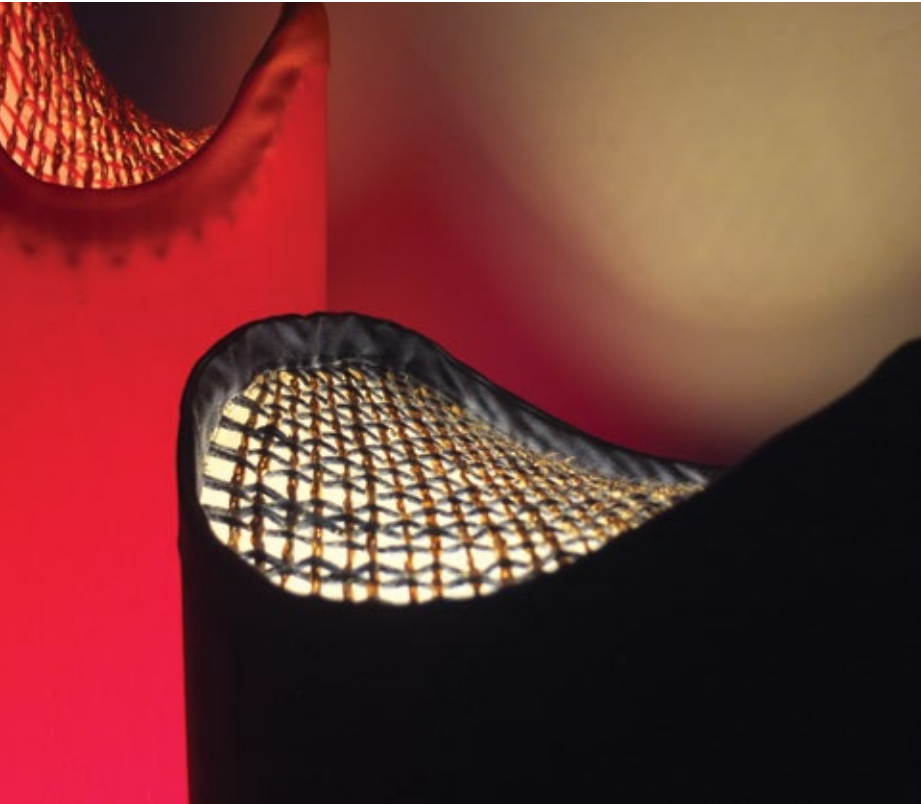
julialeeyh@yahoo.com.sg
julialeeyh.wix.com/portfolio

RECOVERY THROUGH REDISCOVERY



This healing kit gently re-opens the dialogue between women and their new postpartum bodies, through sensitive design of self-care tools. It seeks to communicate that the postpartum body is worthy of dignity and care, and that women have permission to know and love their bodies without shame.

Under the supervision of Christophe Gaubert



DEVOUR



Devour is a simultaneous juxtaposition and marriage between contexts. Palm leaves were hand-processed into rope and held in tension, forming a dialogue between raw Southeast Asian craft, and refined Scandinavian textile. The hyperbolic lattice interweaves line, surface, and volume, while the bodies stand as night and day; female and male; curves reminiscent of asian tradition; pop colours beating a modern pulse.

In collaboration with Kvadrat



XUBE



XUBE is a sleek solution for portable toiletries: simply fill up, and bring your shower routine on the go. Unroll and mount on any smooth wall, and roll back up afterwards. It keeps all your essentials together, holding what you need and not a touch more - all in the palm of your hand. Launched on Kickstarter in Nov 2016, the project was 350% funded and went on to be produced and shipped worldwide.

Designed with Lee Hsiao Fong and Yang Ran



LEUNG JIA JUN

Jia Jun believes in using the iterative process of design to find hidden opportunities. He enjoys being an experimenter and constantly prototypes to find the best idea by trial and error.

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behance.net/leungjiajue441

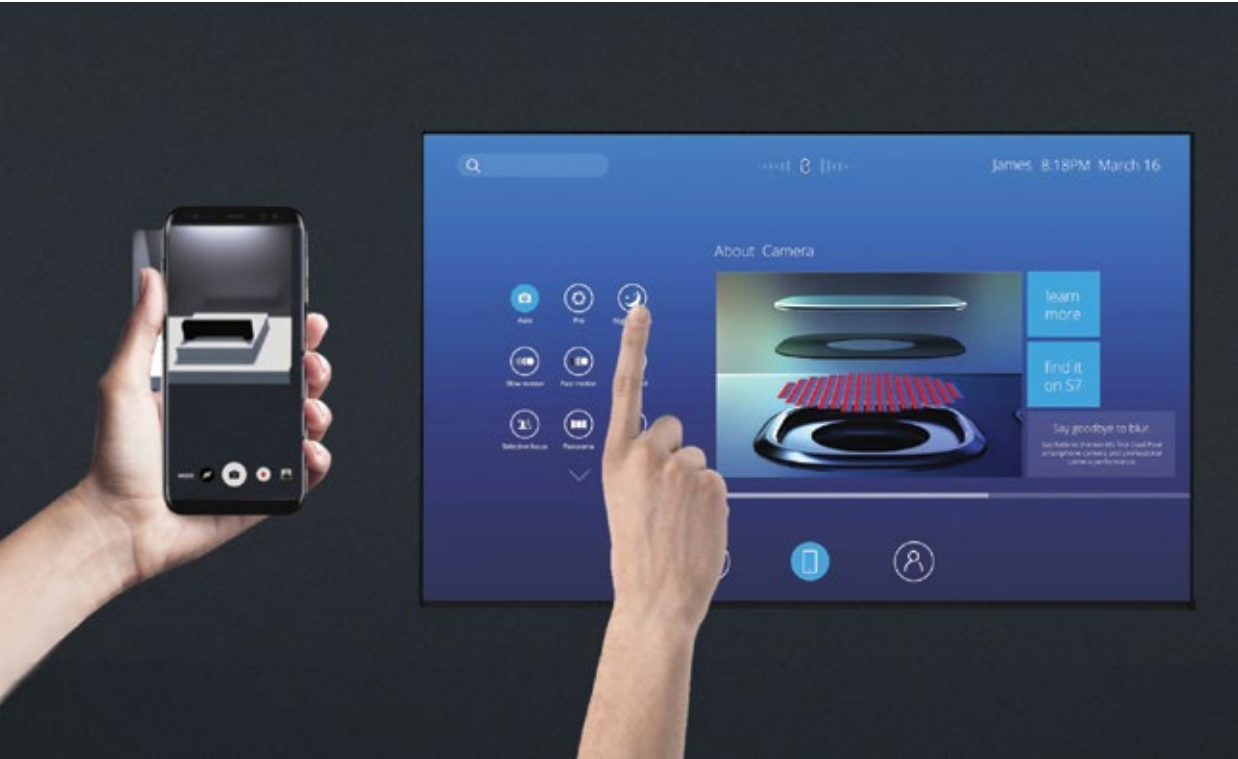
ROMO PINBALL REHABILITATION



Romo is a shoulder gaming device designed for stroke rehabilitation. In contrast to traditional methods, Romo changes the repetitive nature of these exercises into an engaging pinball game. It consists of 3 parts, a ball catcher, a transport maze and a tray. This portable gaming device also allows patients to exercise on the go.

In collaboration with Singapore National Stroke Association

Under the supervision of Dr. Yen Ching Chiuan



THE STORE WITH A SOUL



The Store With A Soul reimagines the current Samsung retail landscape. It uses machine learning algorithms to recognise its Samsung users, filtering the search and making the experience more personal.

Designed with Glenda Yeo, Chow Jia Yi and Liang Ce

In collaboration with Samsung Asia, Product Innovation Team



MORPHOMR MIXED REALITY GLASSES



The modern AR smart glasses taps into the system using DepthBrain® MPU Processor Unit and the Dicoria® sensing. It is based on SlamSense® SLAM® Simultaneous Localisation and Mapping Data. These features support a smooth projection and capture the spatial environment accurately.

Designed while on internship at MAGICAST



LIM CAI JIN

Design is rewarding. There is nothing quite like seeing the look of joy on people’s faces, knowing that what I have created may have made a heartfelt impact on their lives. This gives me motivation to create better designs, to help more people.

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HEARING FISHES

Yes, you can now hear fishes! A series of ornaments designed to translate the movements of fishes into a surround soundscape. This project enables the visually impaired to appreciate the part of nature inaccessible to them before, creating opportunities for new experiences. With Hearing Fishes, the visually impaired can now accurately identify the activities within a tank independently!

Under the supervision of Donn Koh



OURA

Kaleidoscopes duplicate fragments and form new entireties. Oura vases are designed to mimic this idea. The plates are designed to complement each other. When adjacent, they appear grey, and when overlapped, they burst into colour. This highlights the beauty of kaleidoscopes, which fragment a whole to create a new entirety.



IBEYI

When first encountering the fragrances Tamila and Tamika, one might not immediately notice that there is one key ingredient that is shared by the two, vetiver oil. This subtle yet unwavering connection is the inspiration for the concept IBEYI, which means twins in an African language. Inseparable by a golden bond of kinship, the twin’s intangible chemistry is symbolised by the magnetic clamps that hold Ibeyi together while the understated details celebrate their differences.

Designed with Sherwin Ng
In collaboration with International Flavors & Fragrances (IFF)





PRISCILLIA LIM

Priscillia is a thinker driven by curiosity and a sense of wonder. She is able to find and create meaning in nearly any situation, to formulate deceptively simple solutions that make people tick. To bring her ideas to life, that's where design comes in!

priscillia@u.nus.edu
behance.net/priscillialim

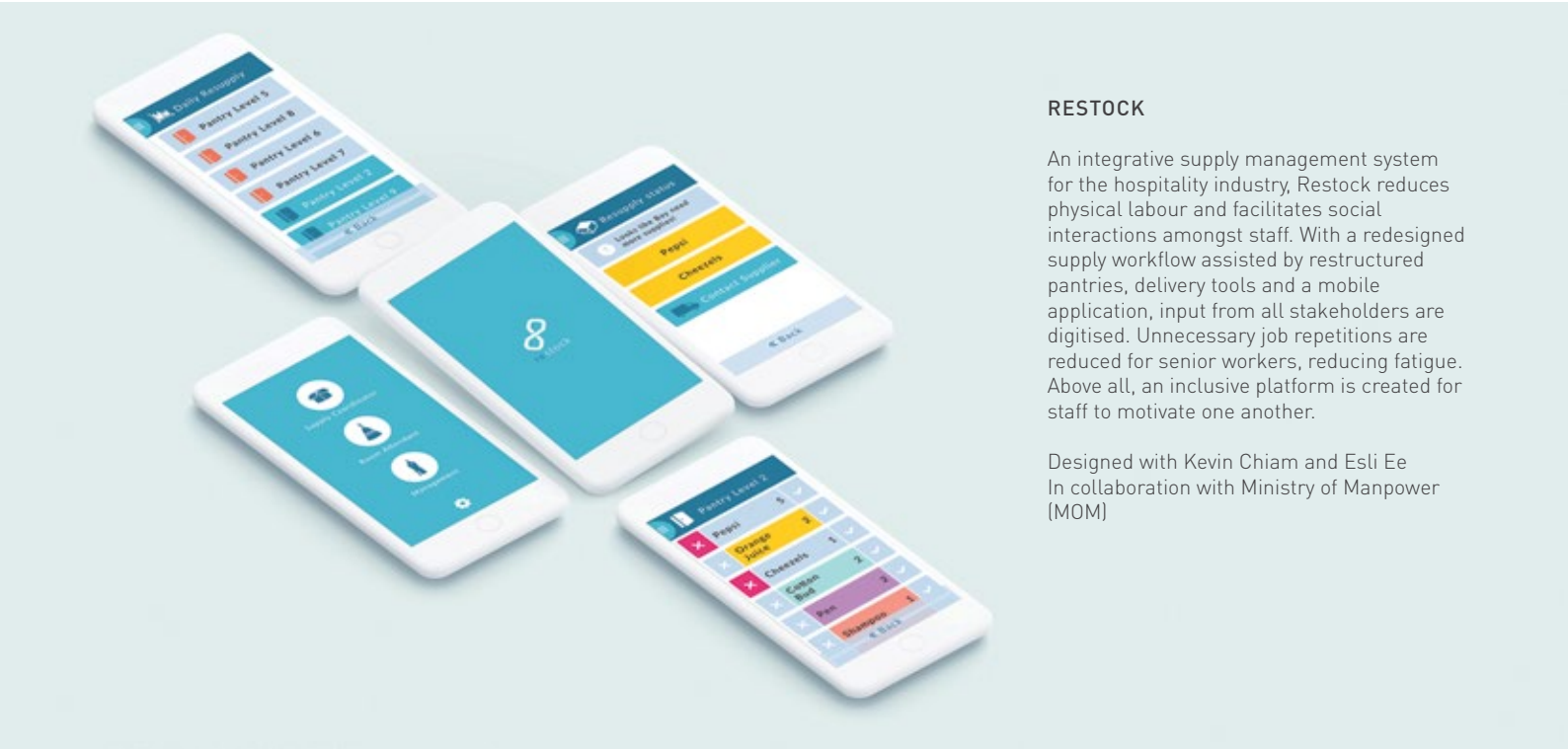
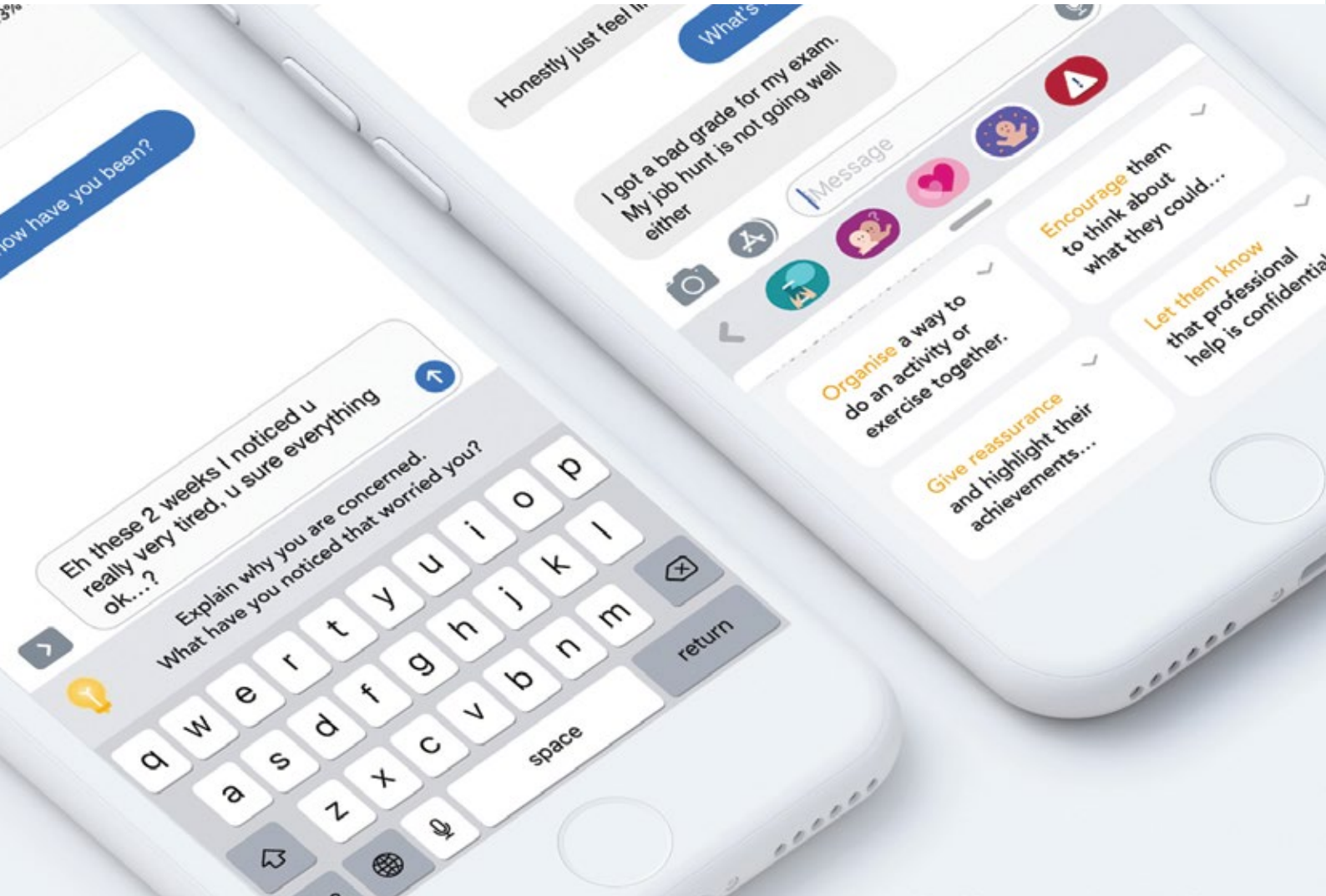
REPHRASE



A mobile keyboard that provides the quickest way for those who wish to be more caring, Rephrase helps us find the words that can make a world of difference to a friend in need.

Empowering us to unpack our empathy, we can now take the very first step towards improving the mental well-being of our loved ones.

Under the supervision of Dr. Jung-Joo Lee



RESTOCK

An integrative supply management system for the hospitality industry, Restock reduces physical labour and facilitates social interactions amongst staff. With a redesigned supply workflow assisted by restructured pantries, delivery tools and a mobile application, input from all stakeholders are digitised. Unnecessary job repetitions are reduced for senior workers, reducing fatigue. Above all, an inclusive platform is created for staff to motivate one another.

Designed with Kevin Chiam and Esli Ee
In collaboration with Ministry of Manpower (MOM)

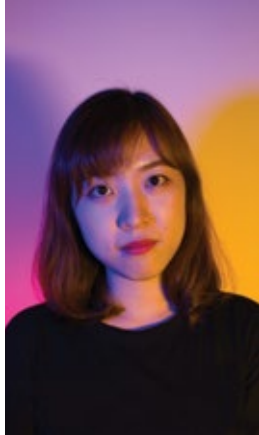
VAC



VAC is a vacuum operated syringe adaptor for single-handed aspiration. Having to handle multiple tools, doctors are often left with one hand to perform fine-needle aspiration; with a standard syringe, there is instability and imprecision that could cause injury or poor sampling. Leveraging on the syringe's vacuum, VAC allows doctors get to hold the syringe comfortably and maintain a pen-like grip throughout the procedure, by simply pressing a button to aspirate.

Designed with Ng Tse Pei and Delia Lim
In collaboration with Dr Rajeev Parameswaran,
National University Hospital (NUH),
Division of Endocrine Surgery





LIN QIUXIA

Qiuxia believes that design is used to make a change. It could be any change in different aspects as long as it exists for a good reason. Every design project she did is her learning process that led her to become a designer to make a change in the future.

linqiuxia.93@gmail.com

JI JIAN WU (吉简物): A BELIEF, A BLESSING

Inspired by the richness of Chinese culture embedded in Feng Shui articles, Ji Jian Wu presents a contemporary take on these traditional objects. Whether or not you are a believer, the receiver is gifted with well-wishes.

This is a new channel to pass down cultural heritage to a new generation, as well as open the door for foreigners to understand Chinese culture.

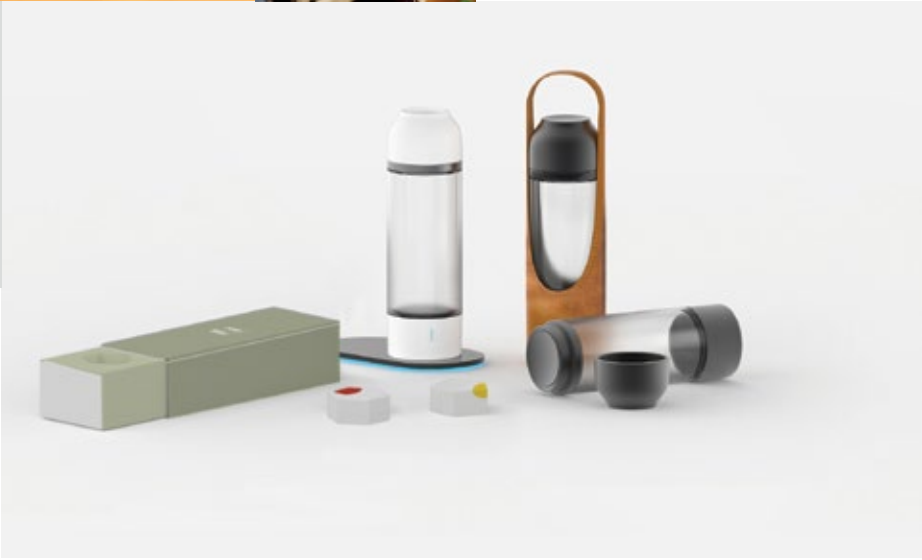
Under the supervision of Patrick Chia



CABE

Cabe is an AI robot designed to help children manage their negative emotions when studying, improving their mood and productivity. Its cute appearance and lovely voice provides a sense of trust and friendliness. It uses emotion recognition technology to analyse the user's emotions and act accordingly. Cabe is able to engage users with a variety of non-obstructive responses.

Exchange Project with Zhejiang University



XIAN CHA (现茶)

XIAN CHA is a self-heating portable tea brewer for Chinese tea lovers on the move. It comes with a rechargeable heating element, solving the problem of a hot water supply. The compact origami tea bag is detachable and expandable. The additional space helps to soak the tea leaves better and makes it easy to clean. XIAN CHA allows the user to make fresh Chinese tea anywhere, anytime.

Designed with Yang Yang and Laura Bijl



LUM JUN JIE

Jun Jie believes that design need not be imposing but that it can actually be simple, subtle, yet functional and impactful.

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cargocollective.com/junjielum

CAPTIONING DEVICE



Loyal to an individual's voice, the Captioning Device proposes an alternative to (re)connect with people around. As digital distractions become increasingly pervasive, should our fragmented attention spans be mended or condoned? Depending on the user, this device can serve as a diagnosis or augmentation of current social behaviours.

Under the supervision of Patrick Chia



MOVE



By identifying the lack of personal boundaries in current ridesharing vehicles, Move maximises the personal ride sharing experience by adapting its interior to cater to each individual's needs. Through the use of versatile seating, individualised headrests, and personal amenities within the vehicular space, privacy among passengers is achieved seamlessly and unobtrusively.

Designed with Gabriel Lim, Jon Chan Hao and Ang Kay Li
In collaboration with Groupe PSA



HIDE AND SEEK



A modular travel retail system inspired by the cantilevers in architecture, the harmony between lightness and volume is essential to the experience of Hide and Seek. The juxtaposition of wall planes brings focus to the merchandise on display, treating them like art pieces, and the introduction of window taps on the consumer's curiosity, inviting one to take a peek into what's beyond. By challenging the traveller's perception of her surroundings, Hide and Seek provides a unique and refreshing shopping experience at each turn.

Designed with Nurul Syazwani
In collaboration with Shiseido Travel Retail Asia Pacific Pte Ltd



MAGGIE SEAH

Inspired by the painterly strokes of light rendered by Impressionists and the like, Maggie seeks to create works that captivate, delight and soothe. Bridging imagination with hands-on rigour, she brings seemingly improbable ideas to life.

maggie.aq96@gmail.com
behance.net/maggieaq9665de

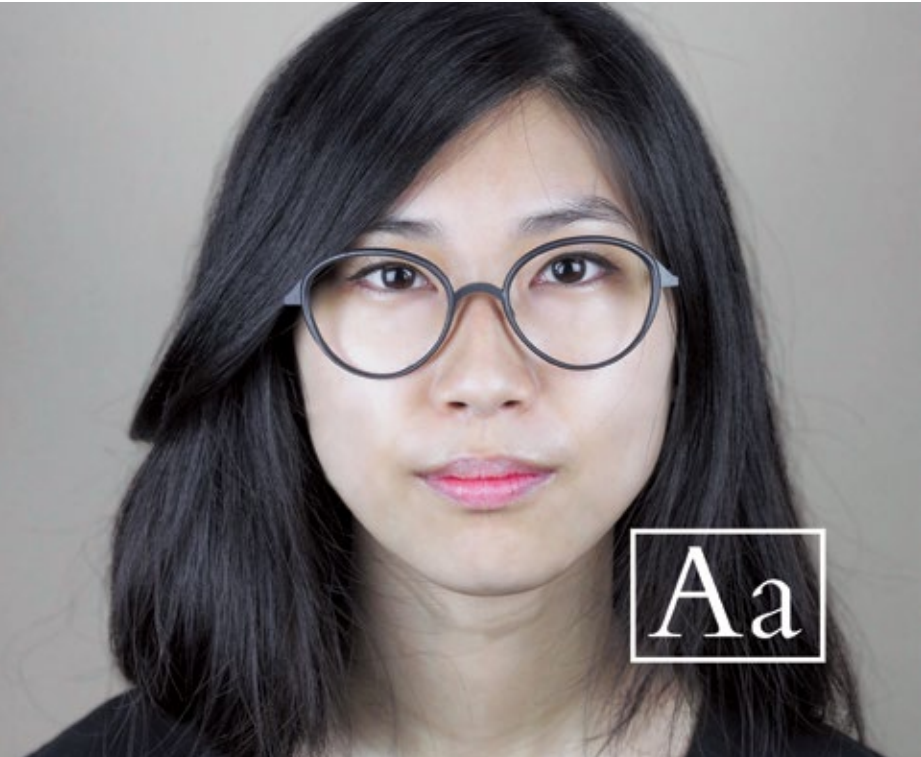
SHAPING MIST



Mist is reimagined as a malleable and expressive material, shaped by the designer and applied as the highlight of innovative scent diffusers.

Pictured: The Soufflé diffuser sits in your reception or hosting area as as sculptural piece, releasing a voluminous douse of scented mist once every few hours. This rhythmic diffusion not only breathes life into living spaces, but also helps to avoid olfactory fatigue, keeping our impression of the scent vivid across the day.

Under the supervision of Hans Tan



SERIF



Form conveys feeling: Broad, even strokes convey assertiveness. Sinuous, undulating strokes are gentle. Serif is a series of eyewear that distills the essential visual features of iconic typefaces such as Times New Roman, Rockwell and Bembo, translating them into distinct frame designs. The brand concept is presented in a retail website.

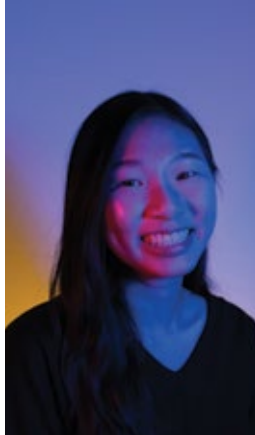


DELTA TRESTLE



Through the composition of pure lines and the principle of triangulation, Delta reduces the idea of a trestle to its most essential state of simplicity and strength. As a single piece, Delta serves an unobtrusive valet stand that flushes against walls. It may be used in two different orientations at different heights.

Designed with Teng I Ling
In collaboration with Supermama



MILLY TAN MEI CHUEN

Milly sees design as a bridge between science and art. She also believes that life is about the people we meet and the things we create with them. So let's start creating!

tanmcmilly@gmail.com

SHAREFOOD

Sharefood captures the lost opportunities in Singapore's current food redistribution scene. This real-time and accessible platform accelerates the transfer of suitable and necessary food items from household donors to recipients at anytime. With Sharefood, it shortens the food redistribution process, allowing for more man hours on activities with food insecure individuals that require human touch.

Under the supervision of Song Kee Hong



ONEAID

Syringes are meant for one-handed injection and two-handed aspiration. OneAid is an adaptor to the common syringe for the safe performance of one-handed aspiration. It maintains syringe typology and can also be integrated into the Toilet and Suture kit. OneAid leverages on intuitive injection contact points, aspirating with the same contact points to reduce movement from changing hand position.

Designed with Iliana Ishak
In collaboration with Dr Peter Cheung and Dr Joanna Grace Leong, National University Hospital (NUH)



MASH

MASH is a leaning wall shelving unit. It is a confluence of both natural readymades and industrial readymades coming together in harmony. The AA frame concealed within the bamboo poles forms an integral structure, which allows for adjustable shelf heights. Different configurations of MASH can also serve other functions such as a lean-to unit when multiple units of MASH are joined together.





NATALIE MAE TAN

Natalie enjoys interacting with users and being able to help others. She is always seeking new adventures and experiences, having a broad range of interests and a passion for learning. With her designs, she hopes to enable others to live their best life. She particularly loves problem solving and long walks on the beach.

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INTERPLAY



Humans are made to be lifelong players, even into adulthood. However as our priorities change, play is left behind and seen as unimportant. Interplay seeks to find opportunities in our daily lives for adults to engage in true play. It identifies commuting as a social space for interaction to engage in social play. Interplay is an introduction back to play, rescheduling play back into our routine.

Under the supervision of Martin Danzer



P1 REGISTRATION CARE PACKAGE



The MOE website is overwhelming and hard to navigate, making parents unnecessarily call for information already there. P1RCP is an ecosystem developed to bridge the benefits of underutilised physical platforms and digital tools. Digital tools re-present information to filter unnecessary info and make clear what is relevant. Combined with physical platforms, pulling information feels like it's pushed.

Designed with Clifford Chew and Lew Jin Jie
In collaboration with Ministry of Education
Ministry of Education Service Design Challenge
1st Place Winner

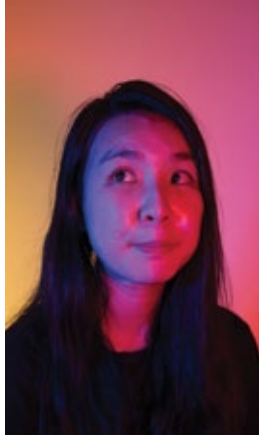
PLAY PETALS



Play Petals is an outdoor furniture set designed for the public space of Woodlands Health Campus. Aiming to promote lingering in nature, patients and visitors have more autonomy to design their own public space experience. The pieces have free rotational movement and are interdependent on each other. The bench shape is inspired by the campus' heliconia logo and allows for modular additions.

Selected for development
In collaboration with SAA Architects and Woodlands Health Campus





NG ZI NING

Zi Ning enjoys having imaginary dialogues with products, particularly if a product tells her the story of its designer. Her favourite phrase is 'begin again'.

ngziningg@gmail.com

MAKING MISTAKES



The Journey of Making Mistakes is a book that teaches children the value of mistakes. How the story unfolds is dependant on the reader as they have to make decisions and flip to the corresponding pages using the colourful tabs. These decisions could lead to the good ending or one of the bad endings where mistakes are made and lessons are learnt. Different types of mistakes and various strategies to deal with them are illustrated.

Under the supervision of Hans Tan

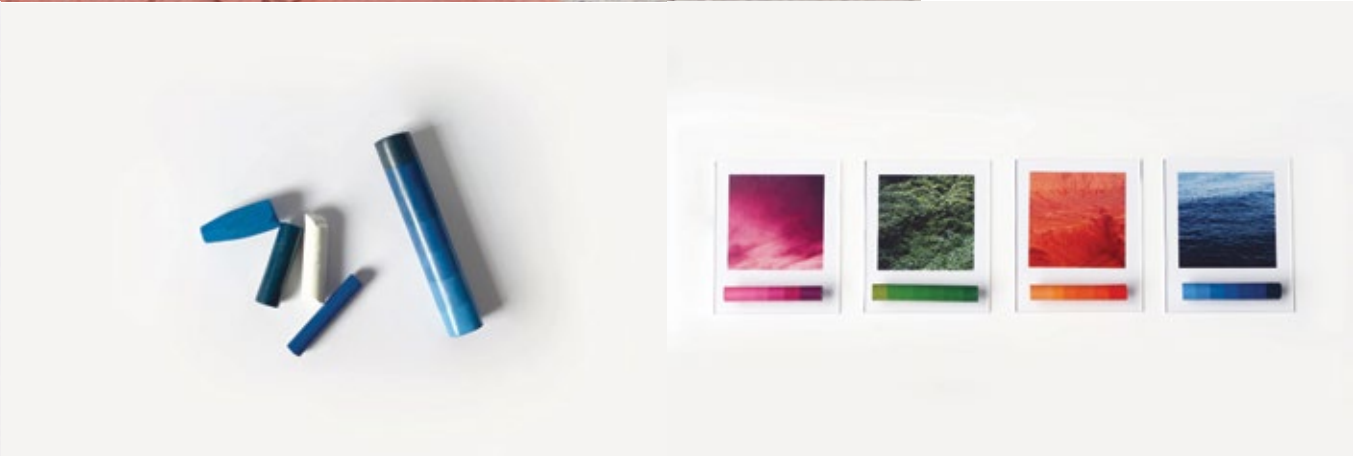


MALLEABLE MARBLE



Marble fragments and powder are common by-products in the manufacturing process. Mixing these by-products with silicone in proportionate amounts creates a new material that has a hard appearance but a soft texture. Taking into account the visual qualities of marble as well as the non-slip property of silicone, bathroom mats were chosen as the vessel for this new material.

Designed with Tilly Gaucher



CRAY/ON



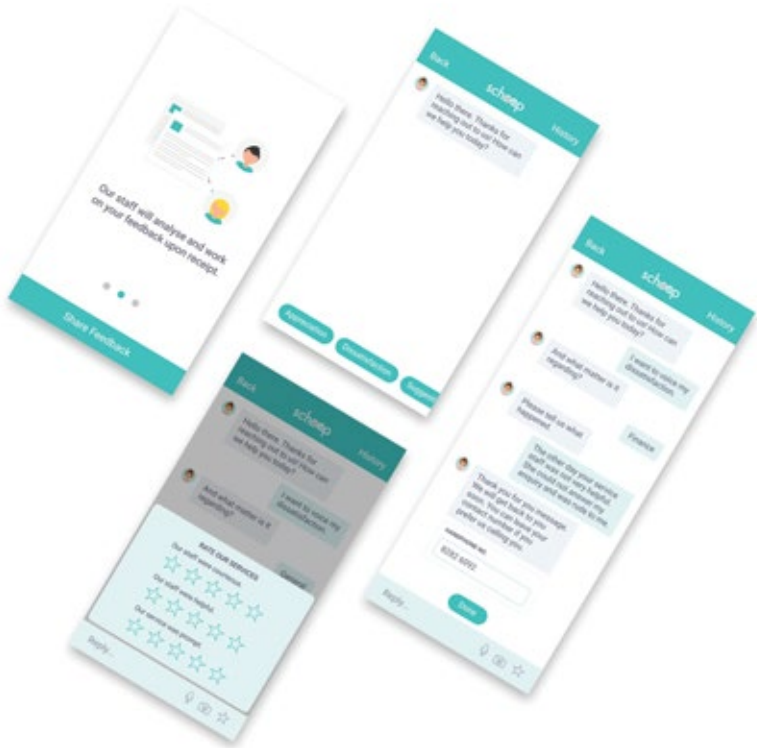
We often find broken products a pity, but there is beauty in being broken - if one sees beyond the surface and understands its inherent nature. Leveraging on the inherent properties of crayons to be melted, mixed, and re-cast, cray/on was born. cray/on is not meant to be used, but to be admired for its beauty, just like how one would towards a picturesque scenery.



NGHIEM SI PHUOC

It never ceases to amaze me how design can mean so many different things to different people. As for me, it is a process of self-exploration - what are my strengths, what do I value, what should I work on. To put it simply, design is never-ending.

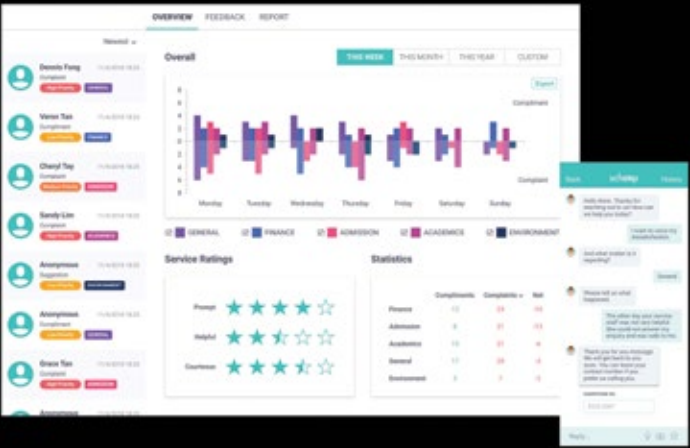
phuoc317049@gmail.com



BRIDGING PWDS' ASPIRATIONS AND REALITY

BeAble aims to improve job opportunities for Persons with Disabilities (PwDs). Taking into consideration PwDs' past work experiences, existing skill set and setbacks, the platform guides them towards suitable work training and career paths. This helps to unlock self-motivation, allowing PwDs to work progressively towards and eventually achieve their new career goals.

Designed with Alvin Juano and Yap Chuin Houi
In collaboration with Ministry of Manpower



BEABLE A platform that aims to bridge PwDs' aspirations to reality.

1. Setting Target Job

Form for setting target job, including fields for name, phone number, email, and job preferences (e.g., Accounts Assistant, Bookkeeping, Chef, Copywriting, Financial Assistant).

2. Applying for Courses

Form for applying for courses, showing a list of courses (e.g., Accounts Assistant, Digital Citizen) and a 'REGISTER' button.

3. Applying For Job

Form for applying for jobs, showing a list of job openings (e.g., Staff Accountant, Accounting Assistant) and an 'APPLY JOB' button.

4. Skills Upgrade

Form for skills upgrade, showing a 'Congratulations!' message and a 'UPGRADE TARGET JOB' button.

FACILITATE CONTINUOUS DIALOGUES BETWEEN PARENTS AND SCHOOLS

Schoop is a feedback system that facilitates mutual dialogue between parents and schools. By soliciting timely and quality feedback from parents, the system enables schools to continually improve overall service excellence. Parents are thus assured that their voices are heard while schools can collect data that reflect their current service standards and highlight areas they can further work on.

Designed with Stephen Ow and Jocelyn Tan
In collaboration with Ministry of Education



NGIENG JIA'EN

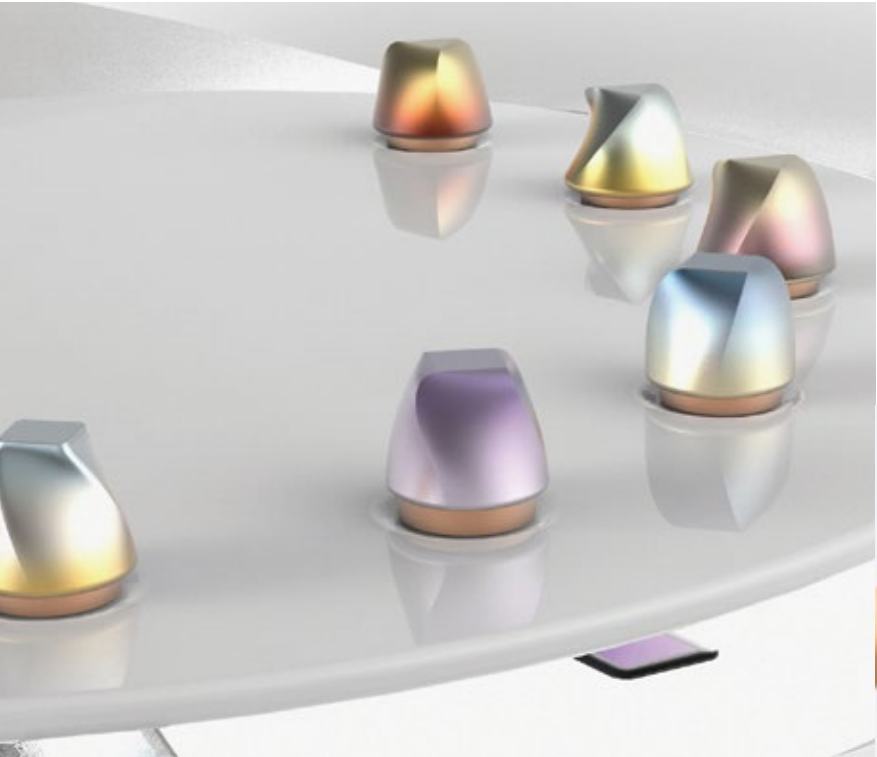
Jia'en believes an original and thoughtful design lies in having a keen eye for details and the artistry to reduce. Her curious mind is nurtured through the leaps of faith she takes in exploring the unexplored, connecting the dots from new perspectives and her own intuition.

en.gneign@gmail.com

CHANCE - HOME KIT FOR OCD PATIENTS WITH CONTAMINATION FEAR

Home practice of Exposure and Response Prevention (ERP) is crucial for the recovery of OCD (Obsessive Compulsive Disorder) patients with Contamination Fear. It's a highly demanding feat that involves repeated, prolonged exposures to perceived contaminants without resorting to the washing ritual. Hence, through bite-sized guidance and randomised washing challenges, chance. takes on a progressive approach to ease patients into Home ERP in hope for more self-initiated practices to be carried out.

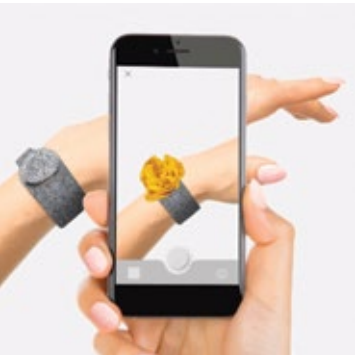
Under the supervision of Patrick Chia
In collaboration with Institute of Mental Health,
National University Hospital and National University of
Singapore Clinical and Health Psychology Clinic



UNFOLD THE UNTOLD STORY OF SCENT

Each fragrance is encased in a uniquely different form to allow for direct smelling, as well as test-stamping on tester bracelet. With the revealed geometric code on the tester bracelet, the universe of the fragrance is expanded through an app - a surprise extended even beyond the retail boundary.

Designed with Anh Nguyen and Winnie Lim
In collaboration with International Flavors & Fragrances (IFF)



MAG WALLET

A highly functional wallet that comes with three modules, each specially designed to streamline the organization of your belongings. A wallet you can swiftly detach and reattach; to suit your ever-changing needs.

Designed with Jexter Lim and Jon Chan Hao



HEATHER ONG

With a keen eye for the unapparent, Heather seeks to design fresh moving experiences. She enjoys tinkering with her hands, and works best with good company.

heatherong.rw@gmail.com

LIFTD



LIFTD is a 2-part system that helps gyms level the playing field for users who experience gym intimidation.

Floor demarcations carve out each user's space, and guides them on how to mediate between their own space and others'.

Dumbbells are designed to look alike regardless of weight, to empower the less confident.

Under the supervision of Donn Koh



L'ATELIER



L'atelier is the winning event space concept designed for Guerlain's domestic and travel retail market. From its structures to its users' interactions, L'atelier embodies intimacy and sophistication of the maker's spirit and the creative environment of French art studios it was inspired by. With simple switches, it can be easily transformed to showcase other products, and when taken apart for transport it only needs the space of half a shipping container.

Designed with Gabbie Goh
In collaboration with Guerlain (Asia-Pacific)



LEAN



LEAN is a ordinary-looking trestle that probes common notions of stability and compactibility in wooden furniture.

As a trestle, it partners with its tabletop's weight for greater stability. The separate halves fall into each other for fuss-free assembly. Lifting its handle, it folds without joints for single-handed carry. To store, stack it, or line it up against a wall as a simple leaning rack. With simple but strategic cuts to a uniform piece of wood, making it is also kept easy and low cost.

Designed with Felicia Lee
In Collaboration with Supermama



PHILIP CHEN

Philip believes that design has to be not just purposeful in function, but also purposeful in its existence; design thinking is always an endearing challenge. He also enjoys making and building things, either by hand or in digital mediums.

philipchenqy@yahoo.com
behance.net/philipchen4602

BALLADE

Ballade is a vehicle designed for Ridesharing applications. Its versatile seat design and layout allows passengers to create either privacy between strangers, or a social space with friends; simply by changing they way they sit. Easy ingress/egress, luggage visibility, incorporated child-seat and wheelchair accessibility caters to all ridesharing scenarios. For everyone to simply come as they are.

Designed with Poh Yun Ru and Ysanne Yeo
In collaboration with Groupe PSA



POSTO

Posto is a table lamp that doubles as a receptacle for written messages from one person to another. When switched on, it illuminates any new messages contained within as a joyful discovery, and a reassuring reminder of the warmth and comforting familiarity of interpersonal connections. Made entirely from upcycled glass bottles, cut and assembled with a single switched lighting element.



MACCO MOUSE

A computer mouse inspired by 'Athletic' form gestures. Aggressive stance, agile surfaces, exuberant details converge to form the Macco Mouse. Functional versatility comes from the scroll pad built into the click surface, the ergonomic form affords a comfortable hold and added palm support. Macco captures aesthetic functionality as a product of extensive form development and refinement in 3D.



PNG QI HUI SABRINA

Sabrina sees design as a language that celebrates the ephemeral, enigmatic and extraordinary. She is drawn to the blue in the sky and the moon that lives behind this sky.

pngsabrina@gmail.com

BLUE



A Breeze of Blue is a fan fixture that utilises gradations of blue in interference patterns to enhance coolness. It is part of a selection of products and systems that was designed with blue as a primary medium, to demonstrate how new perceptions of blue open up unprecedented opportunities in design.

Under the supervision of Christophe Gaubert



A COLD AIR OF PRIDE WITH A TINGE OF WARMTH



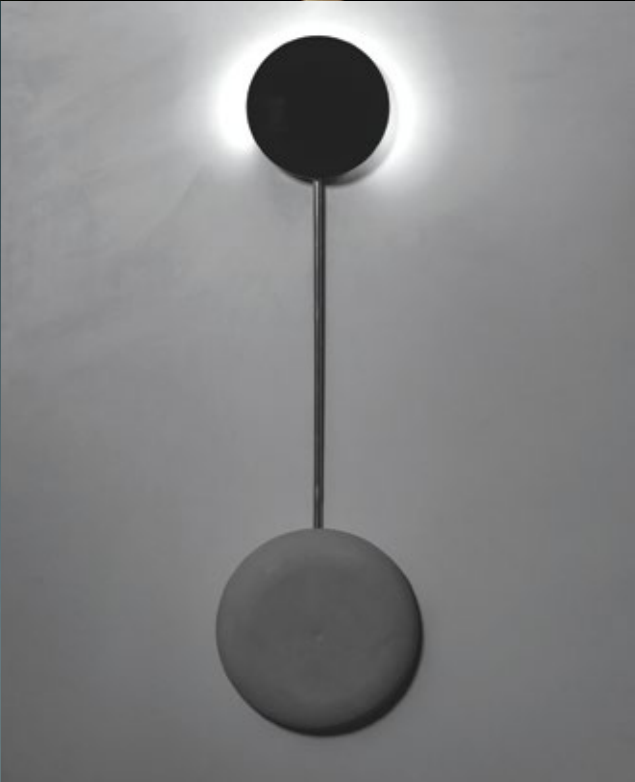
Created from unwanted scraps of marble, A Cold Air of Pride is a luxurious, polished piece that sits on an imperfect, honed slab, A Tinge of Warmth. The duo contemplates the quandary of marble mining by celebrating the material for its age and imperfections. They are laid before you, as a quiet poetry of dignity and humility.

AN URN IS A MOMENT OF REMEMBRANCE



This urn strives to bridge the physical and emotional distance that death ensues by creating moments of remembrance in everyday life. By adopting the form of a pendulum, the bob, made of ashes, encourages a loved one's touch - not just once, but a couple of times in a day. This urn draws power from the swinging and generates light - a symbolism of life and the moment of remembrance.

Designed with Glenda Yeo
In collaboration with Nirvana Memorial Garden





RACHEL CHAN

Rachel enjoys creating delightful yet meaningful experiences that make a difference. She is inspired by moments in everyday life and believes that the best designs are often simple yet thoughtful.

rachelchan.rchy@gmail.com

IKI-0



IKI-0 aims to promote the idea of eating insects as a viable food source. Insect-based snacks are designed using an abstraction process that reduces the obvious connection with insects, yet still providing a subtle hint of its origin. The snacks are presented in a retail concept which introduces insect-based food in a casual and intimate setting.

Designed with Kenneth Yip and Ryan Chin

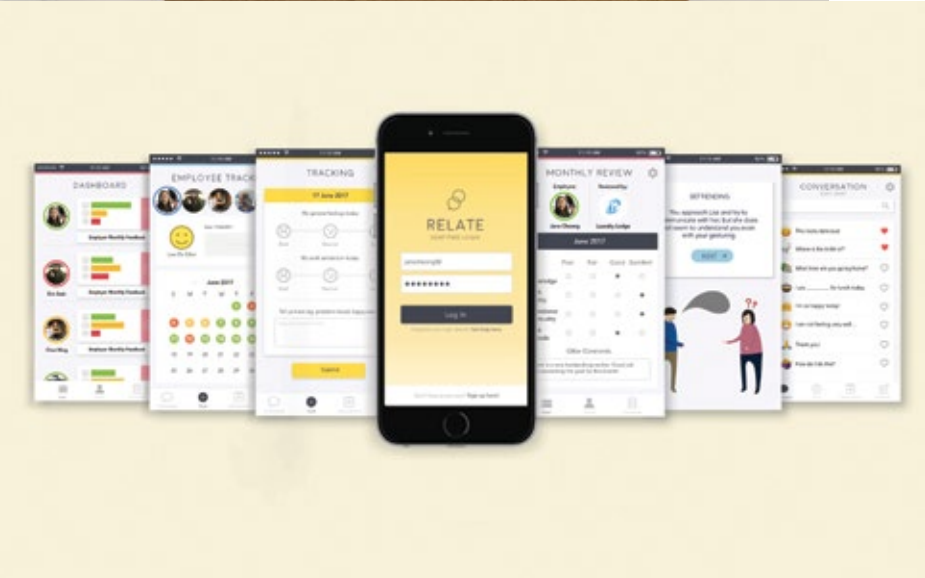


THE ANALOGUE DIGITAL BANK



The Analogue Digital Bank addresses the need to cater to both tech-savvy and non-tech-savvy customers in the mature estate of POSB Bedok Central. This redefined banking experience provides customers with the efficiency of digital automation, while retaining the personable character of analogue practices.

Designed with Letitia Lim and Cheryl Ho
In collaboration with DBS



RELATE



Relate is a communication tool for deaf individuals at their workplace. This mobile phone application encompasses a variety of features including administration, tracking and feedback. Relate aims to foster better relationships between deaf employees, their co-workers and employers, ultimately helping to boost job sustainability.

Designed with Yang Ran and Sheryl Teng
In collaboration with Ministry of Manpower (MOM)





SHERYL TENG

Inquisitive by nature, Sheryl dwells in the wonders of materiality and experimentation. She enjoy breaking conventions to soothe the ridges between the artistic and the scientific. A people-lover and a go-getter, she lives for anything that gets her adrenaline rushing - chilli, caffeine, conversations, and challenges.

sheryltss@gmail.com

A PNEUMATICS' TOUCH ∨

A visual and tactile experience of a seemingly intangible material, air, derived from active negotiation with 3 parties - a membrane, compressed air within, and atmospheric air. Pneumatic Jacket and Sweater are the coincidence of functionality and beauty, through the use of common everyday heat sealer and avant-garde techniques.

Under the supervision of Hans Tan



KUEH HAMIL ∧

An Indonesian-Chinese immigrant couple had been trying to conceive for 10 years. One day, the woman suddenly craved for Kueh-Ampong, an Indonesian honeycomb cake. Uncertain of the recipe, she made a few mistakes, and resulted in a Kueh with a pink protruding bulbous form enveloped by walls. Shortly after, she was pregnant! Word got around and Kueh Hamil has been consumed ever since to bless couples with children, and for children to eat it as a symbolism of growing up healthily.

VENTURE X ZEPHYR >

A study of two scent profiles: Zephyr possesses the volatility of Champagne, the grace of a Ballerina. Ventur embodies eternal youth - forthright, carefree, bold and wise.

Together, their friendship is that of an introvert (Zephyr) and extrovert (Ventur). Inherently different, Venture embraces Zephyr as Zephyr seeks harmony in life, eventually enabling her independence with a soft personality.

Designed with Seah Li Ping
In collaboration with International Flavors & Fragrances (IFF)





KELVIN SIEW ZHI WEI

Kelvin often questions the possibilities beyond the apparent. Inquisitive in nature and usually curious in uncovering the complexities in systems and everyday interactions. However, he still doesn't understand his unwavering love for coffee and beer.

kelvin_siewzw@hotmail.com

TAGO



Volunteering for the intellectually disabled (ID) isn't an easy task. New volunteers are often not used to the level of interaction and communication with them and often do things that experienced stakeholders do not appreciate.

TAGO hopes to close that experience gap by providing the new volunteers with the necessary information for them to better cater for the ID. TAGO is a set of magnetic cards that works by displaying a visual reminder of the ID adult's motor skills and verbal ability in a subtle way behind the volunteers' name tag.

Under the supervision of Dr. Yen Ching Chiuan



JP CONNECT



At Jurong Port, current safety practices are still very manual and require various overlaps in physical documentations that makes the user experience frustrating.

With JP connect, we streamline the process through the digitalisation of documentation in the context of a safety briefing. Utilising a digital board and input information from stevedores, we aim to enhance the briefing experience and ultimately reinforce the culture of safety.

Designed with Matthew Soon and Hwee Peng Tan
In collaboration with Jurong Port, PSA and Rolls Royce



JUYCE



With the goal of increasing the current percentage of bicycle users in France, Juyce is a system that motivates and incentivises current car users to commute by cycling.

Rentable electrical assistive motors are found at existing Vélib' stations around Paris. The motor attached on the front wheel capitalises on the mechanical effort exerted by cyclists and converts it into monetary rewards, or back into electrical energy to assist the cyclist with their ride.

Designed with Romain Fournier, Shriya Shankar Seetharam and Simon Raiffe
Exchange Project with ISD Rubika, France



SOO WOEI PERNG

Woei Perng is a practical and down-to-earth designer who enjoys experiencing what the users are experiencing before coming out with iterations on how to solve any problems and coming out with ideas for the user.

woei_perng@hotmail.com



360 CAMERA



Capture is a 360° camera that allows any user to travel light and yet, still be able to pack their belongings into their bag while traveling. It is slim, being only 4.5cm in diameter which enables users to place it in between items. The lens surface is indented inwards to protect the lens from damage. The tripod allows users to take photos with a timer, without obstructing the camera's line of sight.

BREEZE

Breeze is a portable fan, that through the use of an extension pole, enables height adjustments to the user's liking. It includes features such as speed, time and tilt controls, giving the user much more control over Breeze.



ESSENTIALS



Essentials caters for the bare minimum everyday carry - a handphone, key and wallet. It comes in two parts, the base and the stand. It can be collapsed and stacked, enabling users to carry it around. Utilising a by-product from marble cutting, the surface is coated with marble dust to give it a more expensive look, while additionally providing a better grip onto any surface.



JERVENNE TEO

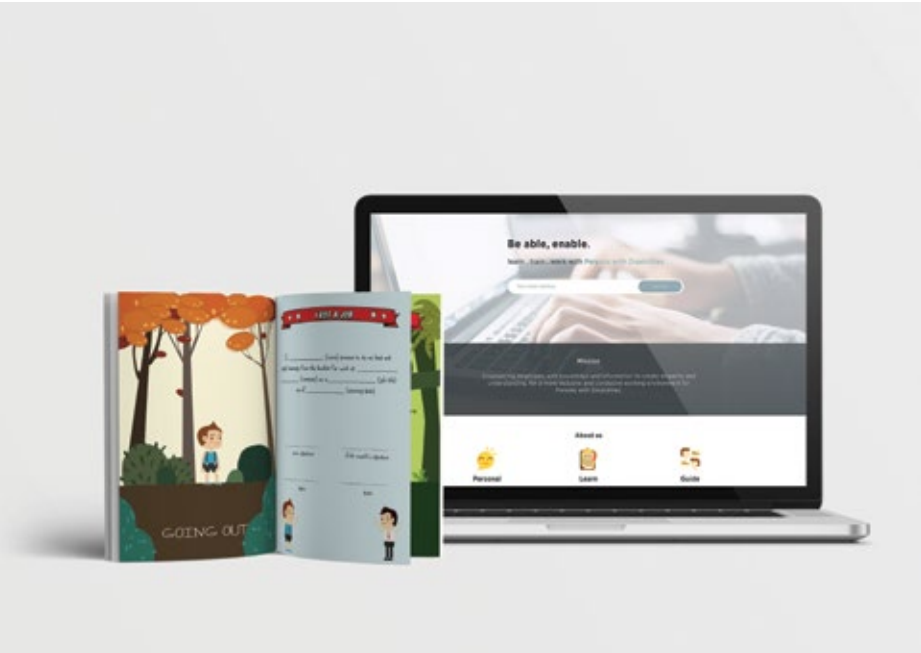
Jervenne is inspired by people and enjoys discovering new ways to interact with everyday objects. Believing that design should move and intrigue, she hopes to find little tweaks that help us live better.

jervenne@outlook.sg

LAAA

By making therapy accessible and enjoyable, Laaa is an interactive open sourced gaming platform designed for children with Intellectual Disabilities. With a set of tools to captivate and engage, children are motivated to strengthen their fine motor skills to improve independence in daily living.

In collaboration with MINDSVille, Children's Wing
Under the supervision of Patrick Chia

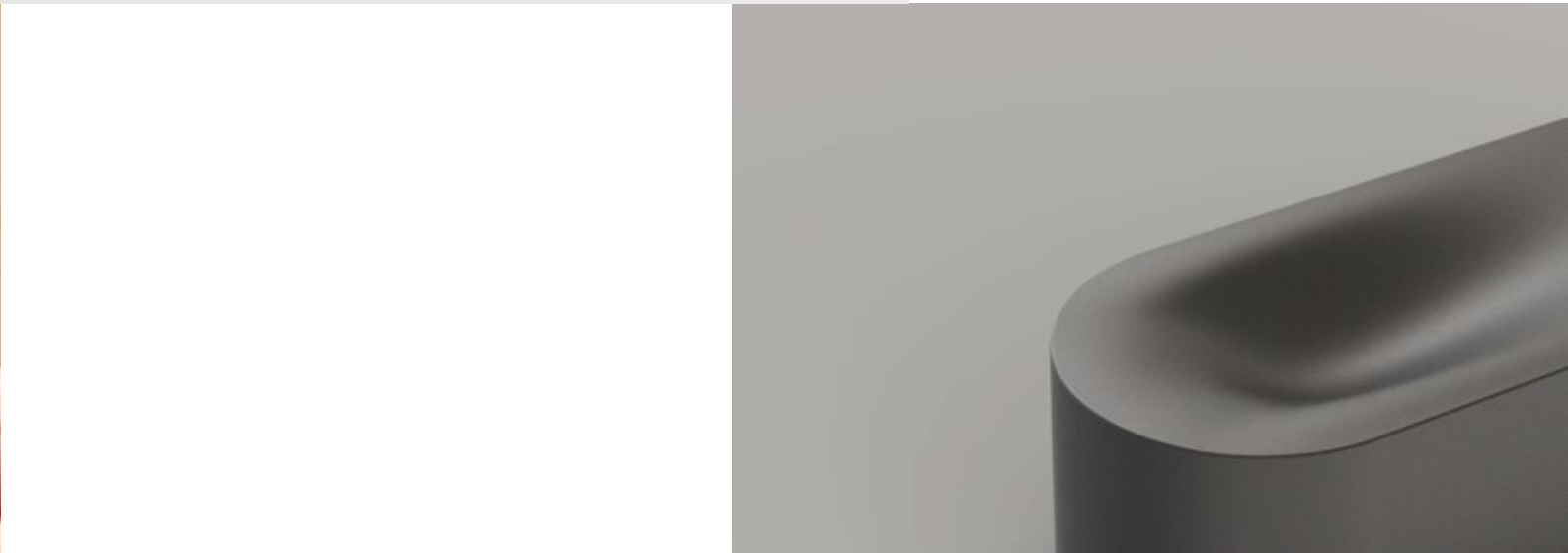


GOING OUT + HIRELEARNING



Going Out and Hirelearning is a two-part solution to finding and sustaining employment for individuals with Mild Intellectual Disabilities. Consisting of an interactive booklet targeted at MID individuals, imparting social awareness to encourage better working habits, and an educational website for employers with personalised tips and tools for the workplace.

Designed with Kenneth Yip and Tan Zijie
In collaboration with Ministry of Manpower and APSN Centre for Adults



LOPE



A set of objects exploring the subconscious ways our bodies rest – chins on our palms, elbows on the desk. Capturing the unnoticed, unique imprints we leave behind, Lope recreates these unseen gestures, prolonging the fading moments of our everyday.



VALERIE KOH

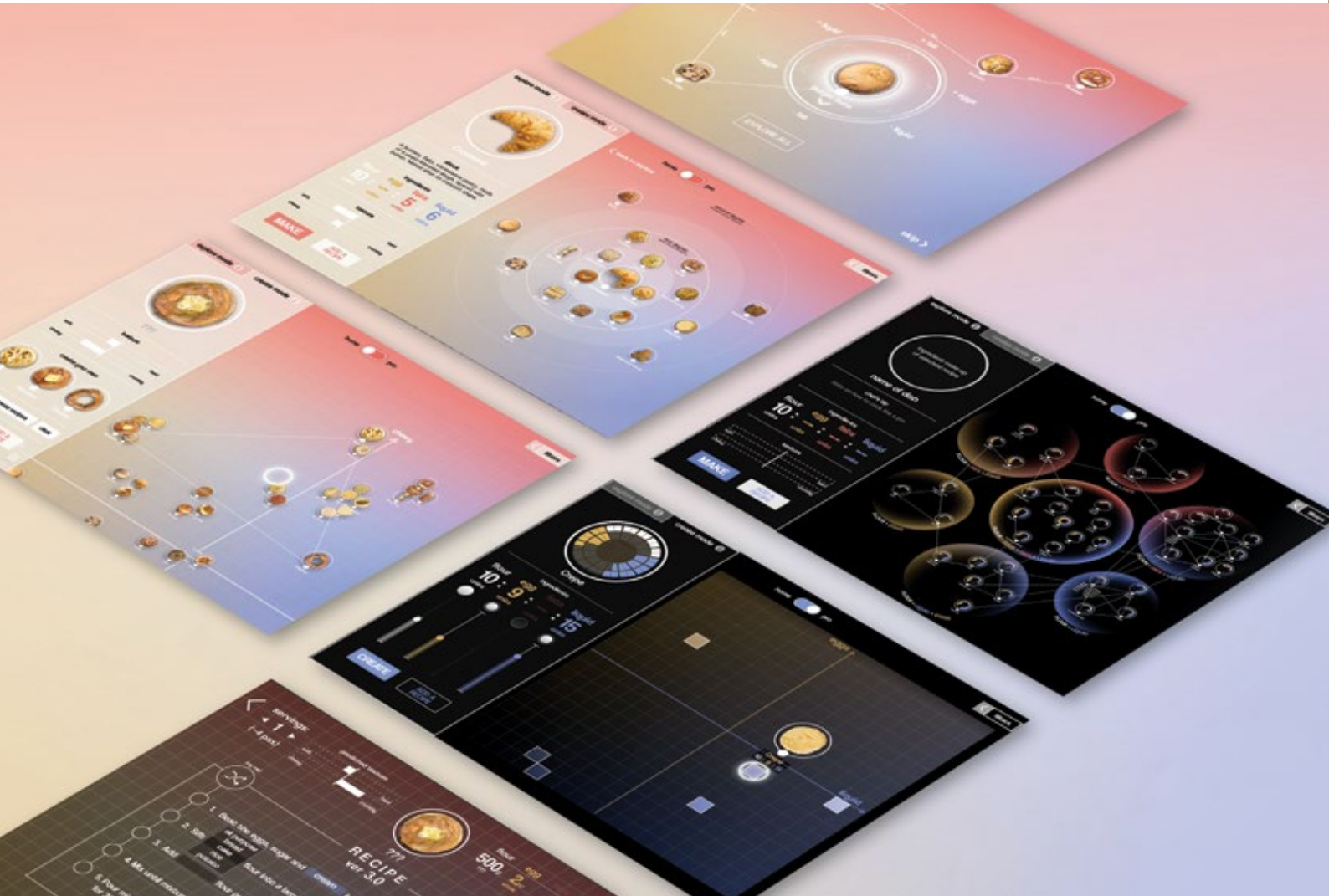
Valerie challenges perspectives with an ever-inquisitive mind. She is hungry for improvement, always eager to reconstruct systems by looking at them from a fresh point of view, and takes a great amount of joy in putting a twist on conventional ideas.

valeriekhl@outlook.com
valeriekhl@design.com

THE DOUGH STUDIO

Reimagining the archetype of instructional recipes today, The Dough Studio is a interactive, community driven web page that emphasizes on the process of creating instead of just replicating recipes. It aims to allow the every-day home cook to visualize a chef's mind by understanding recipes from its fundamental ingredients, exploring and unveiling the relationships between them, and drawing out unexplored areas to inspire people to create.

Under the supervision of Hans Tan



REIMAGINING THE IKEA SHOWROOM



The showroom is reconceptualized as a blank canvas to uncover various living contexts with one's presence and interaction with the space. The user contributes to the reveal by bringing the room to life through the projection of subtle daily occurrences at home, allowing one to truly experience living in an Ikea home, ultimately highlighting the potential and versatility of Ikea's furniture.

Designed with Jonjoe Fong

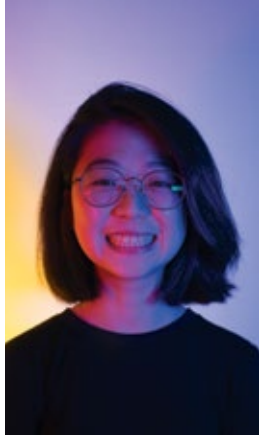


MAGIC OF THE DROP



The user's journey starts with collecting a single drop of perfume on a blank tester leaf that reveals a hidden signature of each scent upon contact with the drop. By drawing their focus to the magic within a single drop of perfume, the experience highlights the preciousness and individuality of each scent, encapsulated in matching unique ceramic diffusers.

Designed with Sheryl Ang and Jonjoe Fong
In collaboration with International Flavors & Fragrances (IFF)



VANESSA ONG HUI XIN

Vanessa is inspired by seemingly ordinary designs present in our everyday. She finds joy in creating interactions - not just between product and human, but between people as well. Vanessa is also a bubble tea enthusiast.

vonghuixin@gmail.com
vonghuixin.wixsite.com/portfolio

THINK AGAIN.



Think again. is a series of tableware designed to ask questions. Not interfering with the eating routine, each tableware provides a visual stimulant at the end of the meal, prompting users to rethink their eating habits. This thesis came to be after a realisation that there was a need for people to contemplate the way we eat and not just simply eating to live.

Under the supervision of Dr. Yen Ching Chiuan



THE SHY LAMP



The lamp that is shy will dim when you are near; or perhaps it would dim when you aren't here? The shy lamp is a mellow companion that sits atop of your desk or any flat surface. Incorporating arduino and sensors, it allows the lamp to have a reaction according to the user's distance from it. The lamp was created with the theme of 'objects with personalities'.

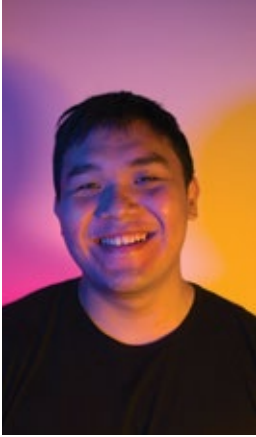
Exchange Project at Korea Advanced Institute of Science and Technology (KAIST)

MOLLY



MOLLY is a kid's kit with attachable and detachable components that engage with negative spaces. Add-ons such as rocking legs and wheels inject mobility into the otherwise stationary stool. MOLLY strives to encourage imagination, discovery and group play in the assembly process. It can be a toy, a furniture or a friend - MOLLY can be what you want it to be.





HANSEL WONG

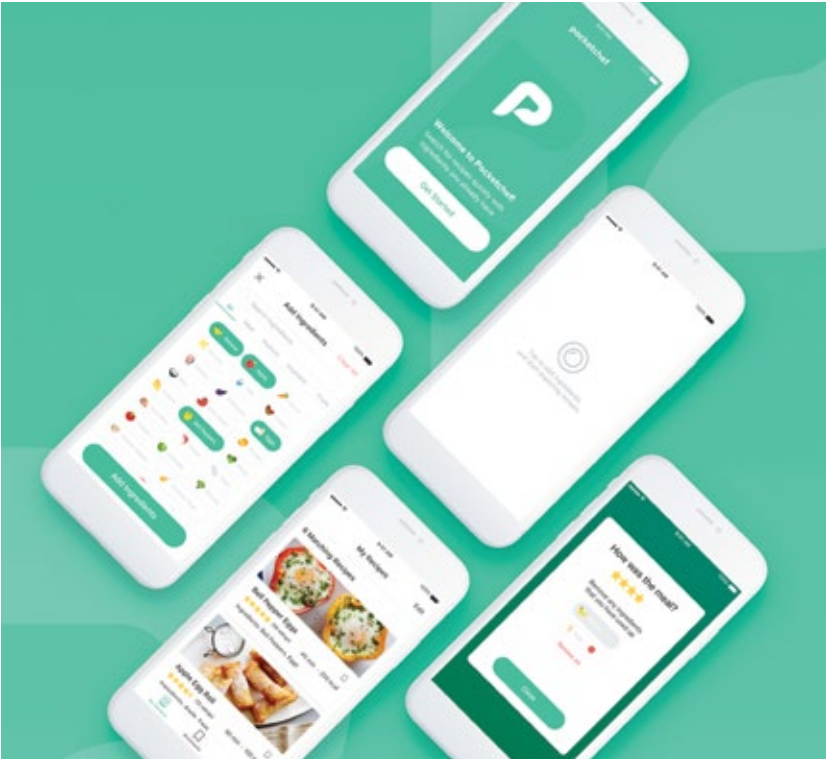
Hansel is a design technologist who believes in solving problems at scale with digital products. When he is offline, he can be found reading a book, taking photographs or enjoying a hike up in the mountains.

yourshansel@gmail.com
hanselwong.com

POCKETCHEF

Pocketchef is a recipe app that searches for recipes based on ingredients you already have at home. It reduces the time it takes for home cooks to find recipes, saves cost by optimising available ingredients, and allows home cooks to explore different ways to cook with the same ingredients.

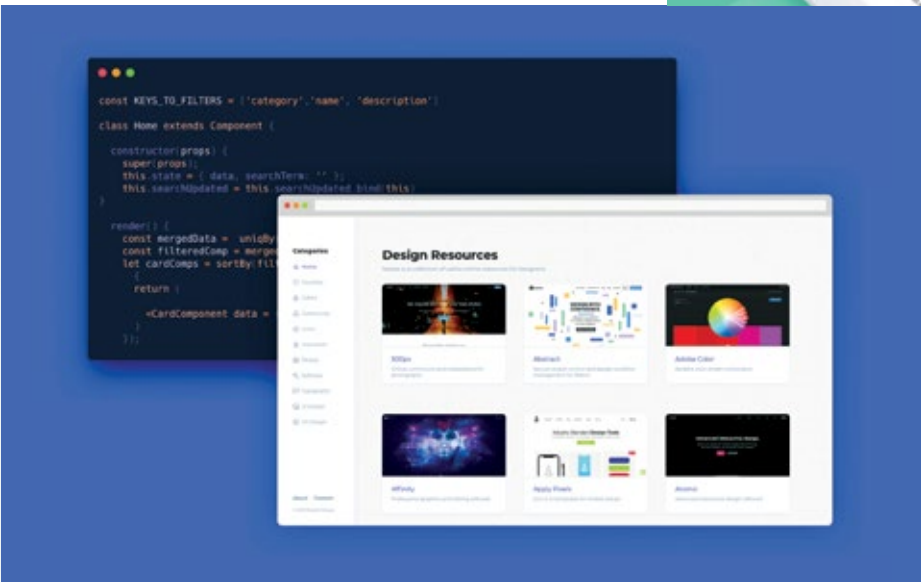
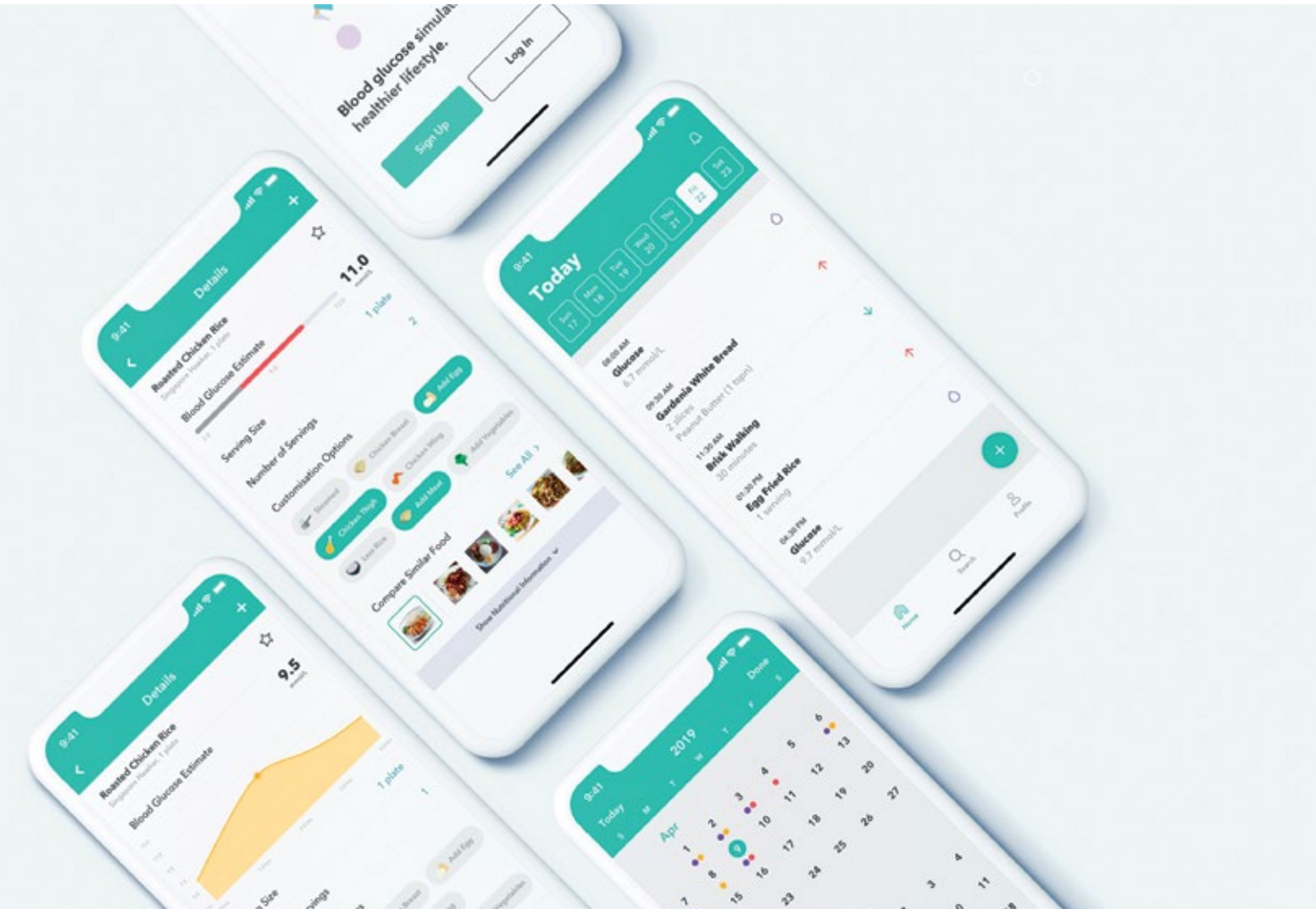
Designed with Marx Low, Leroy Tang and Karina Lee as part of programme requirements of NUS Overseas Colleges



OKRA

Okra is a blood glucose simulator that helps diabetic patients see how different combinations of food affects their blood glucose levels so that they can make an informed dietary choice to manage diabetes.

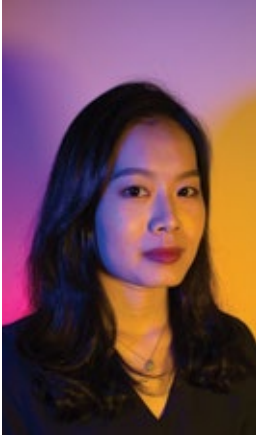
Under the supervision of Dr. Jung-Joo Lee



NEEDE

Neede is a curated collection of online resources designed for designers. Access some of the popular tools used by designers around the world, participate in the different design communities and keep up with the newest design trends.

Now live on <https://neede.co>



YANG XINHUI

Design is about value creation and value capturing. By applying human-centered methodologies to strengthen the economical considerations, design solutions can be translated into viable yet innovate services and products.

808



Deconstructing traditional ideals of ridesharing, 808 enhances productivity through the combination of courier delivery and the transportation of people.

In collaboration with Groupe PSA
Designed with Chow Jia Yi and Ryan Chin



IMPRINT



A modular system to display merchandise while preserving different brand identities and ensuring its versatility and adaptability - whether within the same city or in different cities all over the world.

Designed with Yasmine Cheng
In collaboration with Shiseido Travel Retail Asia Pacific Pte Ltd



YE SILING JAYCELYN

Jaycelyn believes design is an intricate balance between the purposeful and the aesthetic. Defined as an adaptable and optimistic individual, she is a problem solver out to create solutions that are of positive impact to the society.

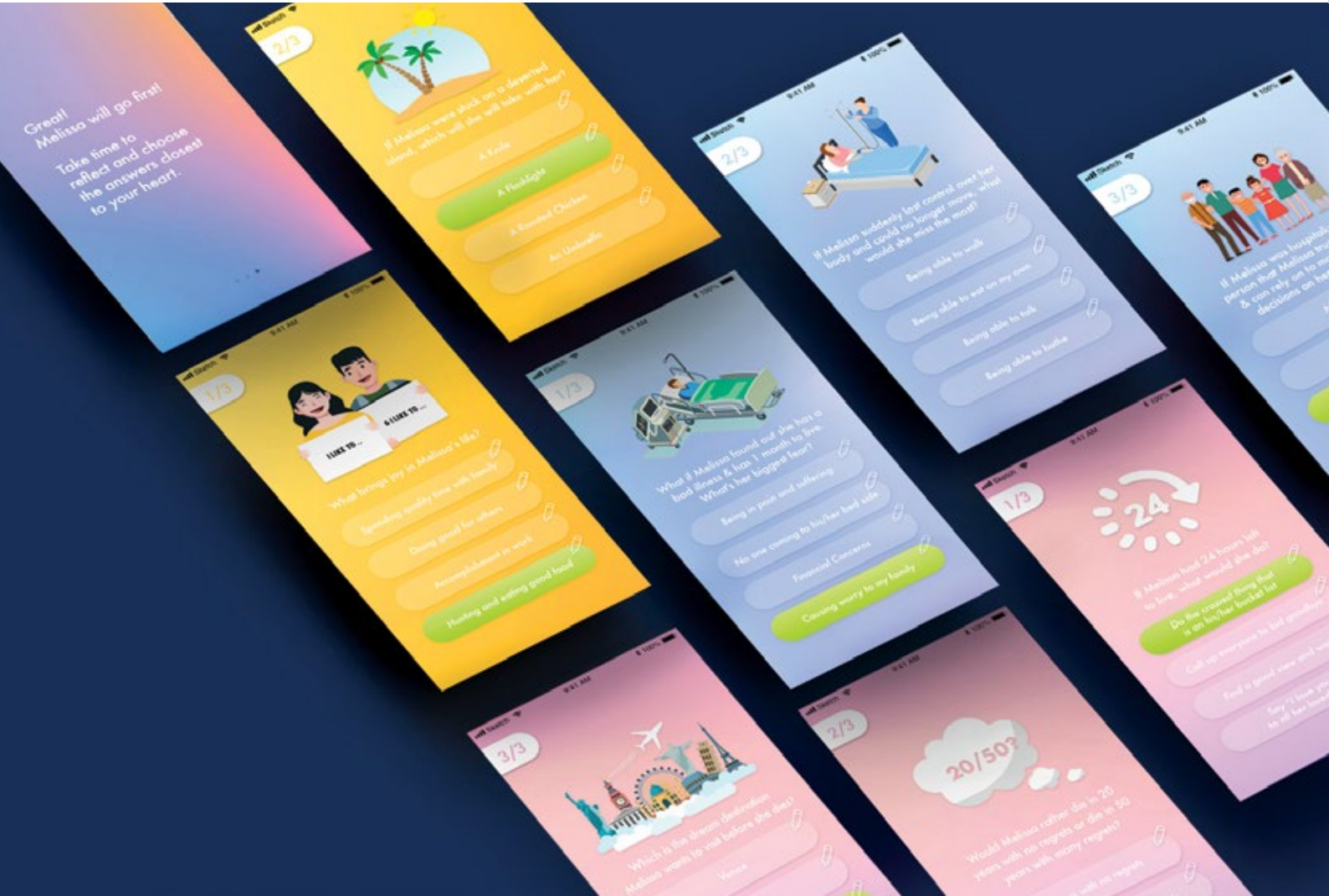
ysl.jaycelyn@gmail.com
jaycelyn.weebly.com

CARE TO PLAY?



"Care to play?" is a subtle relationship quiz that induces important questions regarding end-of-life care. With progressive questions in 3 stages: Casual, Intimate, and Critical, "Care to play?" aims to allow the user to subconsciously reflect on their stage of life and also understand their partner on a deeper level, promoting the importance of end-of-life care discussions.

Under the supervision of Song Kee Hong



#SIGN4US



A 3-part design intervention that improves communication between front-line deaf workers and non-deaf customers in the F&B context. The 3 touchpoints: Menu Redesign, Educational Lenticular Buzzers and Social Media Campaign aim to raise awareness and educate the general public, to create a more inclusive environment for the deaf.

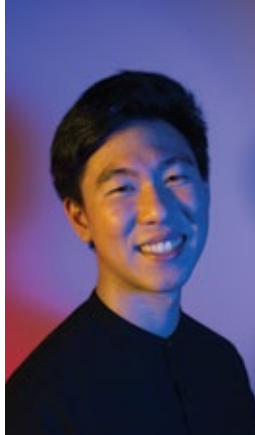
Designed with Miko Yeo and Ian Tan
3rd Place Winner of MOM
Gold Award Winner in Singapore Design Awards



GEN



GEN is a series of desktop objects designed to keep you close to nature's sensual facade. The notebook is inspired by the subtle waves of rippling water, whereas the portable hard drive and cable organiser are designed to mimic the shape of natural beach rocks when stacked. Creating a deskscape/landscape of nature, the product unites to form a cairn, a human-made pile of stones achieving sensual balance.



KEVIN YEO

Kevin is a leader and a futurist. Through understanding people and designing experiences, Kevin aims to shift our view of the world to reinvent the future. Every great design, he believes, starts with an idea that makes people laugh, because it is when when people are laughing, that they are imagining impossibilities.

kevin@yaykevindesign.com
yaykevindesign.com

ENERGY+



Energy+ is a demonstration of a way to reimagine the value of energy. In this system, the roomba acts as a solar energy pet. While cleaning your home, it finds the brightest spots to rest and collect solar power. After a long day's work, it will present the user with a gift of a battery full of solar power. This solar battery can then be used with a lamp to give a sunset glow effect.

Under the supervision of Christophe Gaubert



ÉLA



ÉLA is a play on the french phrase “est la” meaning “is here”. Created with ridesharing vehicles in mind, ÉLA caters to countries with highly unpredictable torrential rains. When riders are stuck in a heavy downpour, ÉLA provides a rain canopy with a small light, creating a moment of reprieve for riders to compose themselves before continuing on their journey.

Designed with Fiona Tan and Tommy Cheong
In collaboration with Groupe PSA



AUSCUE



Listening to heart sounds has always been a solitary experience without reliable methods to ensure students are using the correct methods. AusCue allows for collaborative learning by creating a clear visual indicator that students are listening at the right location, while simultaneously playing the heart sounds through a loudspeaker to ensure everyone is hearing the same thing.

Designed with Fiona Tan and Chew En Wei
In collaboration with AP Dinesh Kumar Srinivasan,
Yong Loo Lin School of Medicine



YONG ZI FONG

Zi Fong grew up dreaming to be an astronaut. Lightyears after, she channels her curiosity from unexplored realms to unsolved problems. She seeks to humanise tech by designing experiences that empathises, inspires and calms. Kopi, rugby and lo-fi makes her feel out of this world.

zifongyong@gmail.com
yongzifong.com

GRYP



GRYP is designed for people with hand tremors to improve their smartphone experience. The modern smartphone is thin and not ergonomically designed for people with shaking hands, with many giving up using the smartphone camera.

GRYP aims to tackle this problem by bringing form to flatness, through a system of collapsible grip attachments, supported by an intuitive camera UI, enabling them to capture precious moments again.

Under the supervision of Dr. Jung-Joo Lee



SCOUT VIEW



ScoutView is a digital campaign for the Scouts of Sweden to share their love for nature with the world. In Fall 2017, they brought along 360° cameras from Google on their hikes to document hidden nature gems. Through a responsive web experience, users can now view the beauty of Nordic nature, anywhere, anytime. The Scout View movement is expanding to over 150 countries after its success.

View it at <https://www.scoutview.se>
The trail starts when the street ends.

Designed while on internship in North Kingdom Design Agency, Sweden

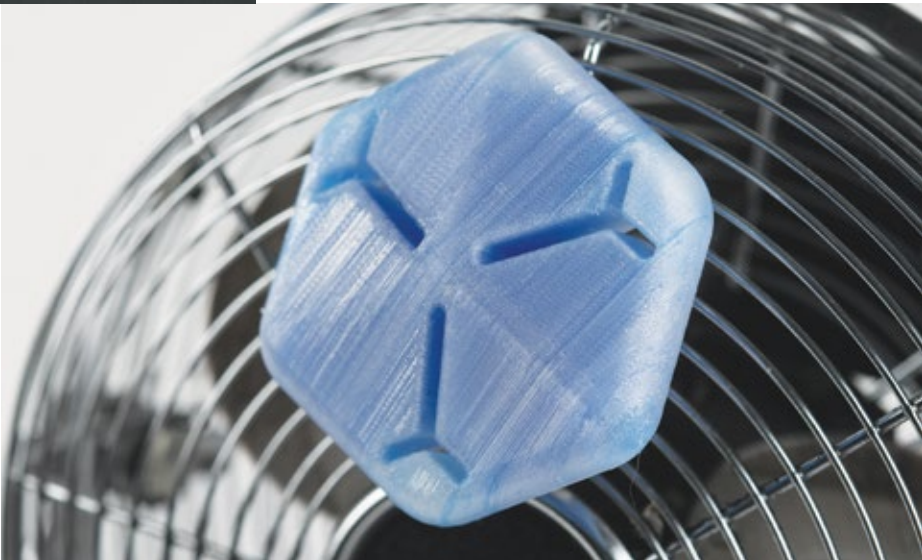
KALLIE



KALLIE, inspired by the root word KALL, which means 'cool' in Swedish, is a portable attachment that can be fitted onto any fans.

With KALLIE, offices and households can still afford to keep cool without the use of excessive air-conditioning. It is made out of refrigerant gel, in which due to its high latent heat of fusion can stay frozen for 4-5 hours. Inspired by the semantics of a snowflake, KALLIE allows wind from fans to pass through easily, creating an ultimate cooling breeze - at a fraction of the cost of an air-conditioner.

Designed with Sheryl Teng
Ikea Singapore's Young Designer Award 2018
The Clean Energy Challenge Finalist



POST GRADUATE RESEARCH

The Master's and Doctoral Programme M.A. (ID) & Ph.D (ID)

The M.A. (ID) and Ph.D (ID) are full-time graduate programmes by research that serve to advance the study of Industrial Design. They emphasize on a holistic approach to the research of design thinking and practice. Candidates will undertake research across a spectrum of design issues, not limited to design processes, methods or problems concerning target users but also focusing on issues pertaining to interactive design, sustainability, and environmental design. The research areas of interest include design theory, practice and innovation, technology and universal design, and biomedical equipment design.



ALEX TEO HE CHANG (MA)

Designing 3D-printed Lattices: Case Study of Methods in Multidisciplinary Design Innovation

SUPERVISOR
Prof. Axel Thallemer

ABSTRACT

Industry 4.0 saw the advancement of digital design tools and 3D-printing technologies which enabled Industrial designers to take on complex design challenges in various fields and contribute via design-led approaches in collaborative, cross-functional projects.

Historically, lattices were studied in mathematics and science as abstract models, while design of physical structures were dominated by material scientists, architects and structural engineers. Megastructures like the Garabit viaduct (1884) and Eiffel Tower (1889) exemplified the ingenuity of lattice structures’ purpose-driven aesthetic, where enigmatic form features were a natural consequence of it’s designed functional values.

Today, 3D-printed lattice metamaterials serve wide ranging industrial applications, from titanium aviation parts, orthopaedic implants, to soft robotics and most recently as high performance wearable apparels for consumers.

Despite their diverse potential, literature has shown that lattice design outcomes lacked divergence due to innovation bottlenecks caused by various factors in upstream design methods and processes, e.g. classical theoretical paradigms define lattice designs as primitive solids and crystallographic patterns. 3D-printed lattice materials resulting from these conventional approaches often contain seemingly irreconcilable design contradictions in functional and usability requirements that stifles creativity in application, especially for consumer products where user experience is key.

The existing gap creates an opportunity to demonstrate the value of design-led innovation methods applied upstream of a product development cycle to generate divergent possibilities that serves to benefit downstream processes, and to encourage research-based approaches for design exploration and conceptualisation in design-centric practices.

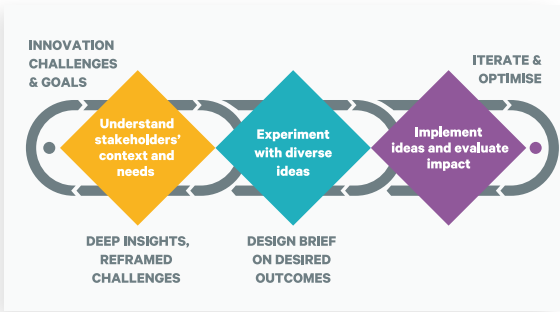
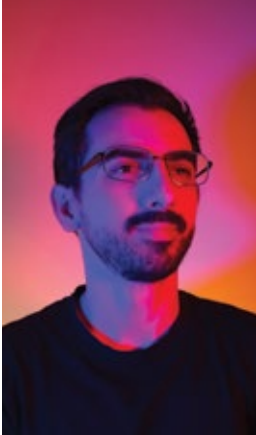


Figure adapted from Innovation Process Framework process guide by Innovation Lab, Public Service Division, Prime Minister’s Office

How innovation went viral In Singapore | Apolitical. [n.d.]. Retrieved May 5, 2019, from https://apolitical.co/solution_article/singapore-made-innovation-go-viral-in-its-civil-service/

Lattice metamaterial design applied in combat sports headgear by Alex Teo, with up to 2.8x better impact protection than commercially available headgears with conventional cushioning material. Prototype was exhibited at Dubai Design Week, Global Gradshow 2017.



ALEKSANDAR KOSTADINOV (PhD)

Tackling the Issues of Pneumatic Muscle Driven Manipulators: Novel Approaches and New Directions

SUPERVISOR
Prof. Axel Thallemer

In Collaboration with Festo AG & Co. KG, Germany

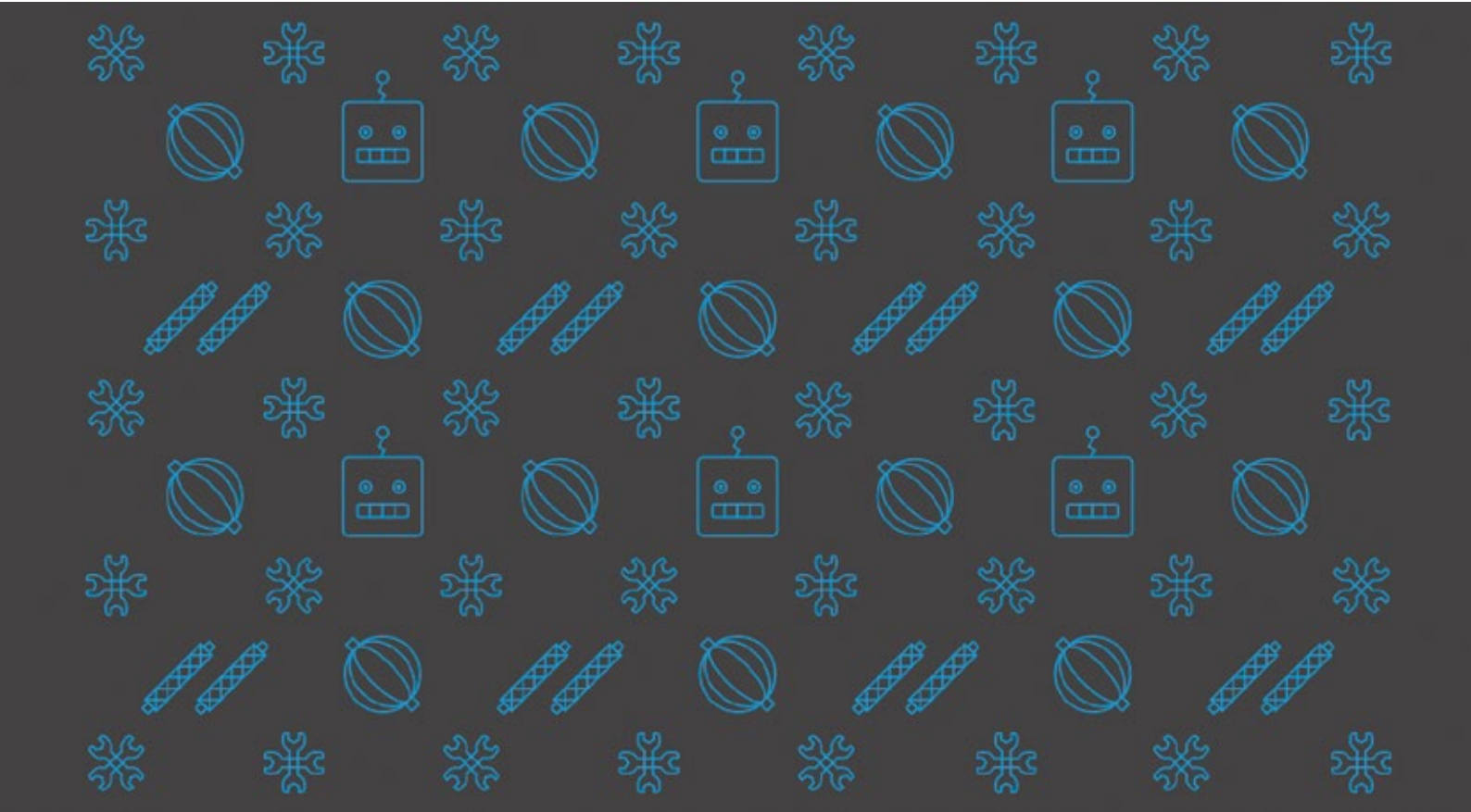
ABSTRACT

The goal of the here presented case study was to create a robust pneumatic artificial muscle (PAM) driven manipulator by using the commercially available Fluidic Muscle (FESTO, Germany) and implementing designerly knowledge and design practice as creative methodologies.

The robotic manipulator was designed using the findings derived from a comprehensive literature review on manipulators and complemented by a survey on the properties of PAMs. While the findings from the primary review demonstrated the shortcomings of using biological and historical models for the mechanical design, the outcomes from the survey established the functional, geometrical and material related framework that governs a PAM, which

subsequently influences the performance of the resulting robotic arm.

The experimental result presented in this study showcases a non-conventional modular device which offers customizability and thus facilitates the adaptability of the system for various requirements. The physical model can be used to study the control strategies for PAMs while offering a moderate payload and a reasonable range of motion – a balanced compromise that is currently underrepresented in both scientific literature and commercial products.





ALVIN CHUA (PhD)

Design at Crossroads: The Emergence and Implementation of Human-Centered Design in Business

SUPERVISOR
Dr. Jung-Joo Lee

ABSTRACT

Human-centered design (HCD) has emerged in the business world today as one of the leading problem solving methods, as it brings the customer’s perspectives into business-oriented decision making, leading to more well-rounded and robust solutions. Despite the obvious upside, the implementation of HCD is often fraught with challenges, as businesses lacks the talents, skill-sets and toolkits to launch it at scale. With a limited number of trained designers, implementing HCD often falls into the remit of non-designers from varying background and little training. Alvin’s proposed dissertation seeks to understand the problems non-designers experienced when implementing HCD in business. Proposed outcomes of the study includes case studies of how businesses have implemented HCD and a HCD toolkit designed for non-designers to aid business implementation.



ERIK CHUA (PhD)

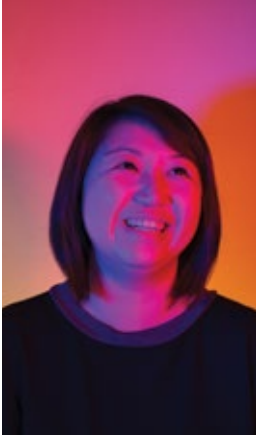
Raising Design: A Study on Nurturing and Elevating In-house Designers in Singapore

SUPERVISOR
Dr. Jung-Joo Lee

ABSTRACT

A growing number of service sector companies like banks and hospitals in Singapore are building their own in-house design teams. As a result, there is an increasing demand for designers to work in these teams. However, there is a lack of information regarding the job scope, required skills and career pathways for these so-called in-house designers. Erik’s research aims to seek out the missing information through the narrative accounts of in-house designers from different organizations in Singapore. His research also expounds on how the organizations’ increasing focus in design influence the expectations of the in-house designers. Their job roles are no longer restricted to merely a Design Specialist that focuses on the execution of design works, but can potentially take on roles of a Design Facilitator and a Design Strategist. The intent of Erik research is to broaden the perspectives of design educators and design students about the career pathways of an in-house designer and the skills required for career advancement, as well as reviewing the need for a multidisciplinary design education that incorporates the development of facilitation and strategic thinking skills.





DEBBIE NG (PhD)

The Role of the Design Executive Officer in the Public Sector Singapore

SUPERVISOR
Dr. Jung-Joo Lee

ABSTRACT

Public organisations around the world are actively seeking new ways to transform and innovate the public sector through human-centred design approaches, including the Singapore Public Service, yet the presence of Chief design Officers at the c-level or strategic part of the organisation in public sector organisations is uncommon. This observation is unlike the private sector where there is a growing demand for Chief Design Officer positions in recent years after the notable names of CDOs like Jonathan Ive (Apple, Inc), Mark Parker (Nike, Inc) and Todd Simmons (IBM Corporation).

The drive towards embedding design in public organisations is not new, however with limited success. Innovation efforts in the public sector are primarily driven by isolated specific individuals inside established institutions and dependent on their initiative and willpower. The added problem to the responsibility of pushing innovation rested in the hands of a few individuals is also that few of the public sector managers put into the role of innovation have formal skills in design, creativity or innovation.

Hence, we seek to answer this critical question whether it necessitates the position of a Chief Design Officer in a public organisation to drive change and see the impact

of design. In this research, we aim to understand the difference and value between a design champion at the project level versus at the C-level. What are the principles of a CDO in a public organisation? What makes the CDOs different from design champions?

The focus of the research will be in Singapore and potentially Asian Countries exposed to the teaching of the west and east. Findings from this research can contribute to public organisations across the region who are seeking to drive change using design leaders in their organisations.



FABIAN ONG ZHENG WEI (PhD)

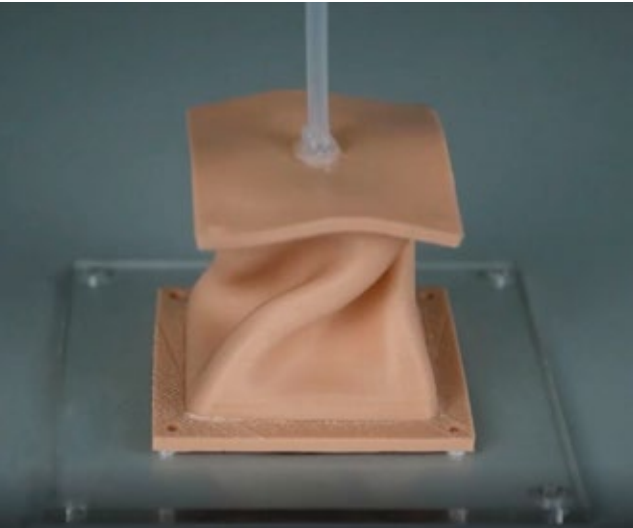
Programmable Deflating Soft Structures

SUPERVISOR
Prof. Axel Thallemer

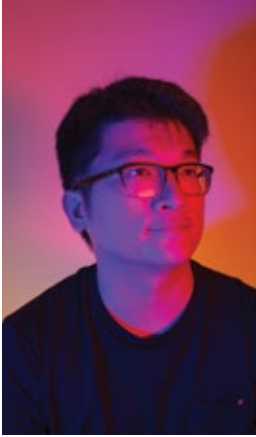
ABSTRACT

The less-discovered field of deflatable soft structures (deflatables) serve as a complement to inflatable pneumatic structures (pneus). Deflatables follow the inversed principle of pneus, by utilising the phenomena of fluid removal to create a purposeful underpressure relative to the external structure. Deflatables are characterised by a soft pouch membrane (often made from silicone) with a soft internal bracing structure; or with an encapsulated infill. This entire 'deflatable package' then has its contained internal pressure lowered below the external atmospheric pressure by a soft vacuum that removes the contained fluid, resulting in compression and shrinkage in the volume of the deflatable metrical and material related properties that govern a PAM, which influences the performance of the resulting robotic arm. The novel manipulator

presented in this study displays a non-conventional modular design which offers customizability and facilitates the adaptability of the system for various requirements. The manipulator model can be used to study the control strategies for PAMs while offering a moderate payload and sufficient range of motion – a balanced compromise that is currently missing in literature and industry.



Twisting Deflatable [Jiao, Ji, Zou, Yang & Pan, 2018] 
Linear Deflatable [Yang et al., 2016] 
Jiao, Z., Ji, C., Zou, J., Yang, H., & Pan, M. (2018). Vacuum-Powered Soft Pneumatic Twisting Actuators to Empower New Capabilities for Soft Robots. *Advanced Materials Technologies*, 4(1), 1800429. doi: 10.1002/admt.201800429
Yang, D., Verma, M., So, J., Mosadegh, B., Keplinger, C., & Lee, B. et al. (2016). Buckling Pneumatic Linear Actuators Inspired by Muscle. *Advanced Materials Technologies*, 1(3), 1600055. doi: 10.1002/admt.201600055



RAYMOND HON (PhD)

Device for Conservative Treatment of Proximal Interphalangeal Joint Dorsal Fracture and Dislocation

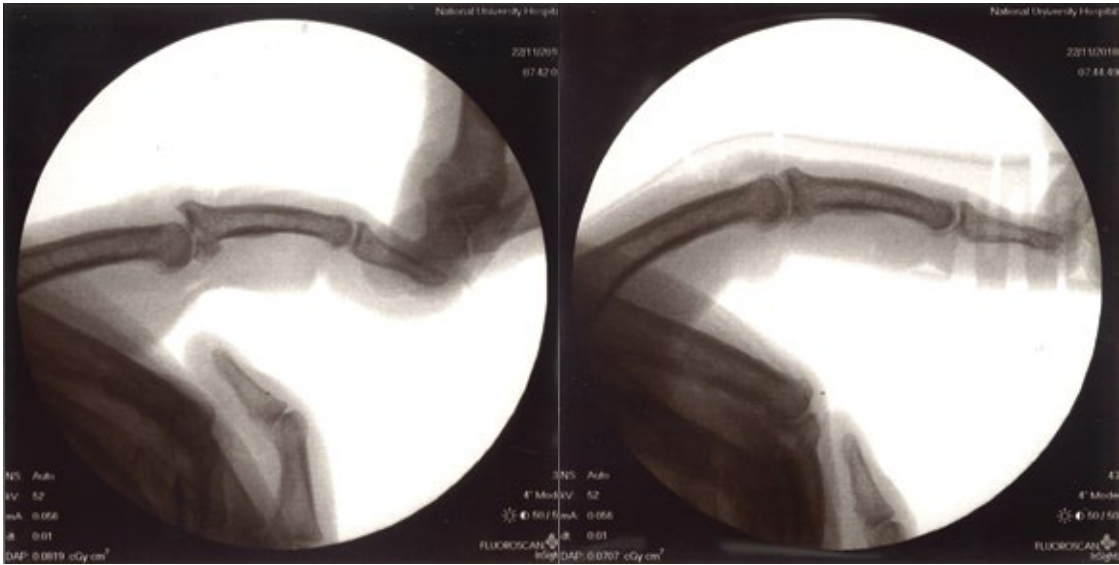
SUPERVISOR
Dr. Yen Ching Chiuan

CO-SUPERVISOR
Asst. Prof. Hans Tan

In Collaboration with National University Hospital

ABSTRACT

Additive manufacturing (AM) technologies have greatly evolved since the initial commercialization of Stereolithography in 1987. Over the past 30 years, machines had become more efficient, precise and economical, leading to a change in the role of AM from just a prototyping method to a method of fabricating end products. Industries, such as aerospace, biomedical and dentistry, have benefited from the utilization of additive manufacturing to accelerate product development process and to drive down production time. Application of additive manufacturing can potentially be used to overcome existing issues faced in current treatment methods requiring manual fabrication of customized splints. Raymond’s research aims to explore the potential applications of additive manufacturing in the context of biomedical product development, through the development of a splinting device for management of proximal interphalangeal joint dorsal fracture and dislocation.



YVONNE YEO (PhD)

Mapping Design Capability of Public Service Organisations: A tool for Collaborative Reflection

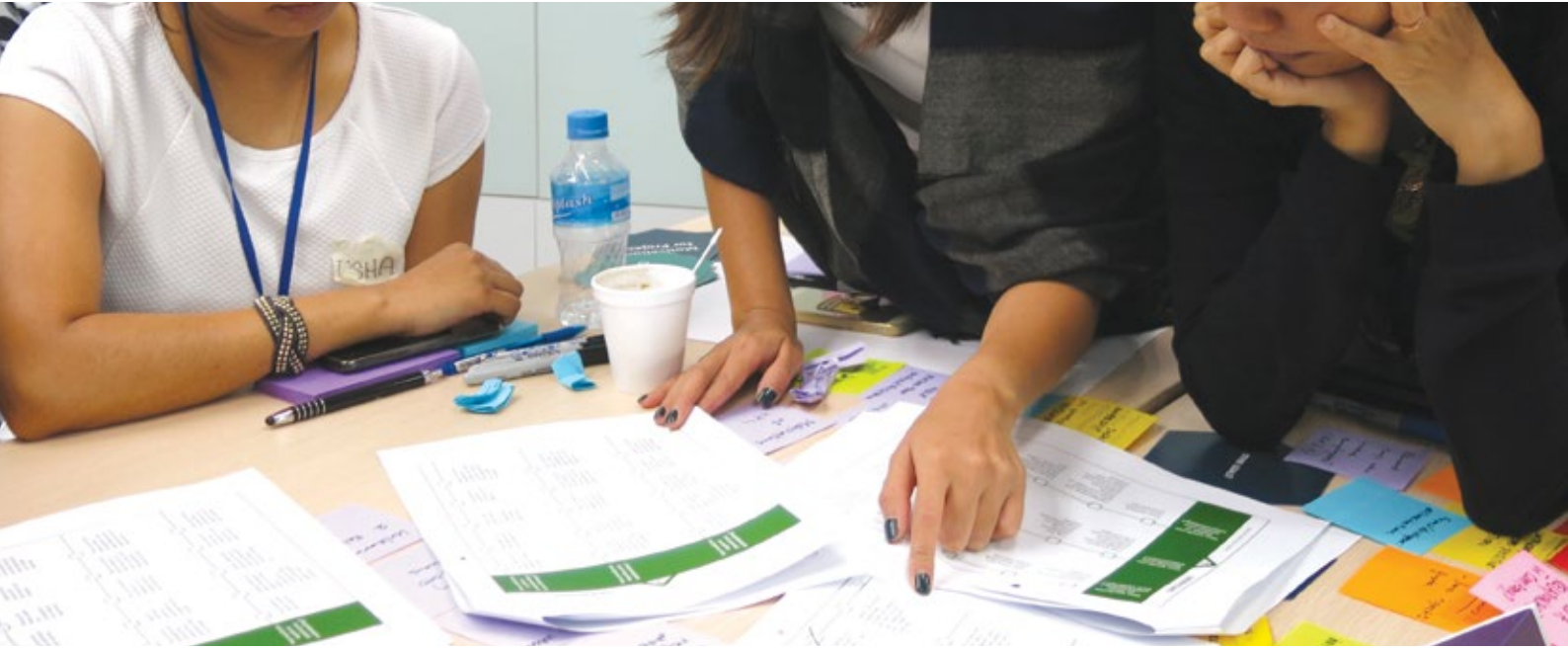
SUPERVISOR
Dr. Jung-Joo Lee

CO-SUPERVISOR
Dr. Yen Ching Chiuan

ABSTRACT

Design approaches in the public service have shifted their focus onto customers’ needs and experiences, beyond basing insights largely from historical data or expert opinions. Although public agencies strive to cultivate a collaborative culture geared towards human-centeredness, design as a growing strategic tool is not clearly understood among public service officers. What exactly is design, what are its contributions and how to relate design practices to daily work are barriers to successfully embed design within organisations. There are also limited facilitation tools to create a common language between design and business functions, to start conversations between design practitioners and clients with no design background, on the role of design and how it helps to achieve organisational goals. My PhD research introduces the development of a design capability mapping tool, with the aim of capturing and amplifying clarity around a public service organisation’s propensity and aptitude to embed design at various levels throughout the organisation. The tool has been developed and tested with several Singapore public agencies to identify their perceptions of design, practice of design, organisational resources, as well as uncovering any misalignments.

CASE STUDY ORGANISATIONS
Ministry of Manpower
Inland Revenue of Singapore
Ministry of Education



ALUMNI

TIFFANY LOY

TEXTILE DESIGNER
tiffanyloy.com

Previously a student and an industrial designer at Design Incubation Centre (DIC), Tiffany’s interest in textiles was piqued when she encountered the material for the first time while exploring fabric manipulation techniques.

As she reflects, she felt that her time in Division of Industrial Design (DID) gave her the space to explore and develop, and the freedom to interpret design briefs in a way that suits her interests. She now explores textile-weaving as a form of art and a tool for design. Her work is mostly exploratory and relates to new modes of creating and production.

She believes that the designer plays an important role in pushing the boundaries of material applications, and in creating relevant discourse on new technologies for the future.

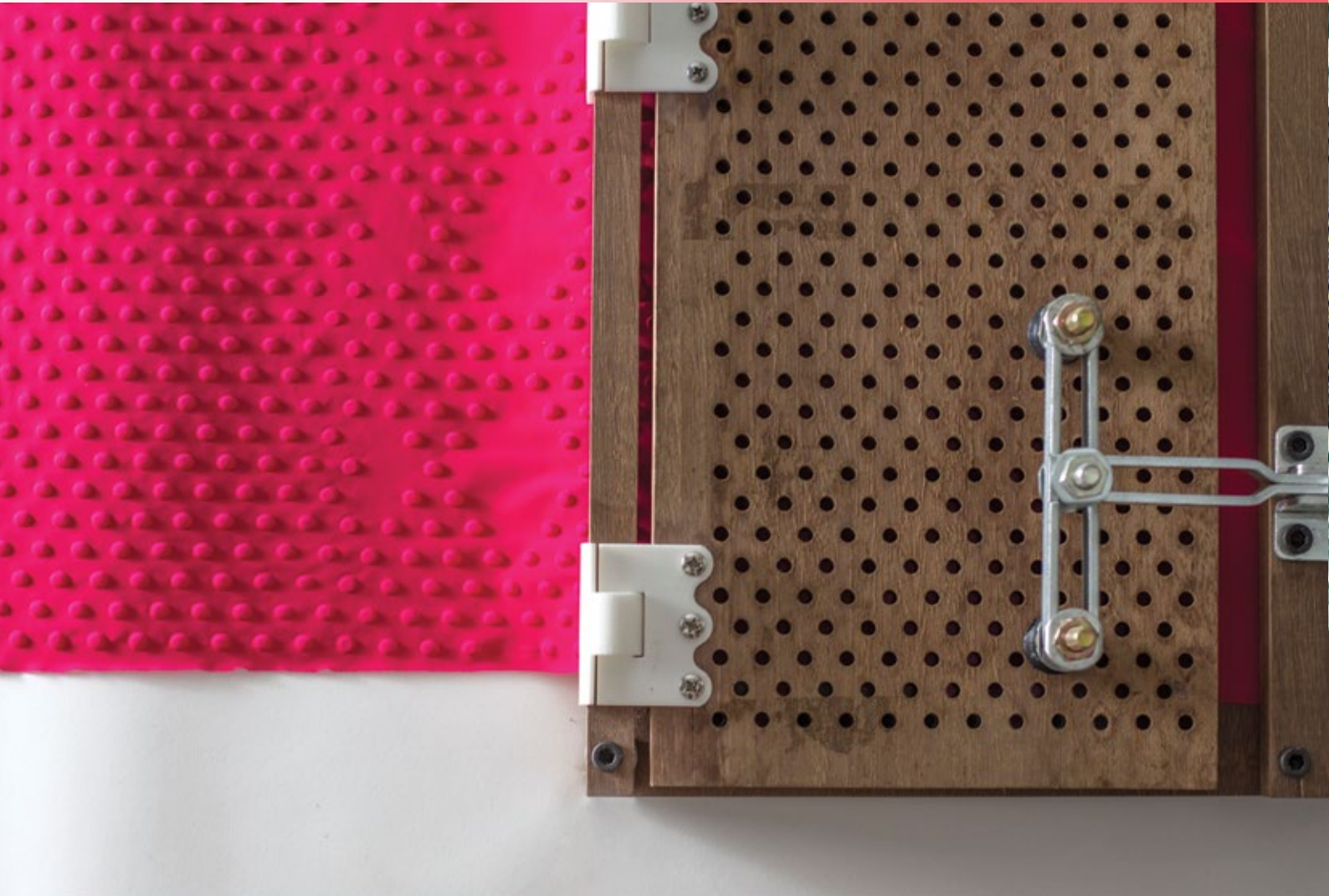
Currently based in London, Tiffany is pursuing a Master’s degree in textiles at the Royal College of Art, specialising in weave.



THE EMOSS MACHINE



A medium-scale production tool for heat setting fabric completed within a designer-in-residence programme in NUS.



SUPERTEXTURES COLLECTION



Through the visual and tactile textures created, the rugs celebrate structure and material in a woven form. They were launched at the Maison & Objet Paris in 2017, which was first exhibited as a part of “The Alchemists” exhibition at Triennale di Milano, and then at Singapore Art Museum.

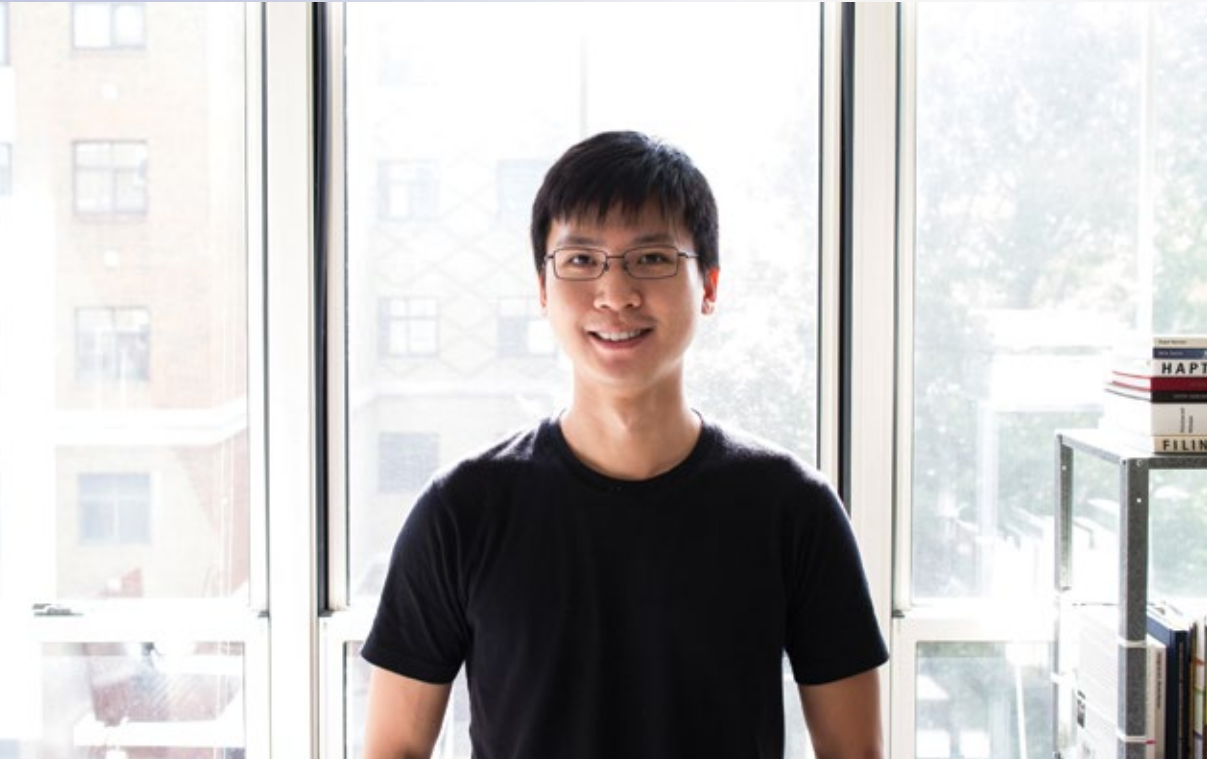
CLEMENT ZHENG

INDUSTRIAL DESIGNER
clementzheng.info

Clement, an instructor at his Alma mater, is presently on academic leave to pursue a PhD at the ATLAS Institute at the University of Colorado.

He is one who relishes designing in complexity; with his research lying at the intersection of industrial design, interaction design and physical computing.

Clement’s experiences back in DID cemented his belief that design is fundamentally transdisciplinary and complex, and that designers should be resourceful in learning new skills to tackle new design contexts.



SENSING KIRIGAMI < ^

An investigation conducted with kirigami craft and carbon-coated paper produced a sensing lamp shade that controls the lamp’s brightness when pulled on its sides. By laser etching and cutting electrical pathways on this material, we can thus transform kirigami objects into functional paper interfaces.

MECHAMAGNETS ^

This new technique enables designers to create functional, physical input elements or interfaces such as buttons, sliders or switches with more autonomy. As these magnets move, their attraction or repulsion delivers force feedback which were harnessed to support tangible interactions.

STUCK

DESIGN CONSULTANCY
stuck.sg

Based in Singapore, the studio is currently working on projects ranging from next-generation aircraft seats, wearable medical devices and digital interfaces, to Experience concepts for nursing homes. STUCK serves clients such as startups, MNCs and government agencies; generally progressive teams looking to use design to uncover fresh insight and drive change. The studio’s mission is to impact people and shift markets through smart, perceptive and surprising design solutions. This was shaped by a strong emphasis by DID in its early years on the principles and process of design, the value of research and understanding users.

BMW EMOTIONS APP

Commissioned by BMW, a design strategy for a repository where car owners and potential customers can learn about owners’ experiences with BMW vehicles was created. The outcome, a visual-led approach, encouraged participation by making it effortless for amateur users to produce magazine-like content. Also, it enables BMW to qualitatively sense audience’s sentiments toward the different aspects of their cars.



BRAND ACTIVATION THROUGH DESIGN

Amidst the plethora of visual media – both offline and digital – it is exceedingly difficult to stand out and be memorable. The Crizal project involved the design of innovative demonstration tools that are more engaging, experiential and authentically tangible.

DESIGN INCUBATION CENTRE

DESIGN INCUBATION CENTRE

This year, the Design Incubation Centre (DIC) is turning an important page in its history.

The entire team would like to thank Patrick Chia for ensuring the success of its first decade and building strong roots for years to come.

Christophe Gaubert is taking over the direction to write a new chapter, leading to redeploy the fundamental mission of incubation. By helping the new generation of NUS designers to develop and achieve their ideas and projects, DIC wishes to participate in the emergence of new talents. By also becoming a look-out post of future trends, DIC wants to help to identify the new territories where Design will tend and take action in the coming decades. Thus, DIC has the mission to feed, inspire, support, reveal and promote future students and young designers through its efforts and its contribution to the pedagogy of the Division of Industrial Design.



ACHIEVEMENTS

ACHIEVEMENTS STUDENT

The James Dyson Award
2018
National Winner
FOLKS KITCHENWARE FOR
THE BLIND
Kevin Chiam



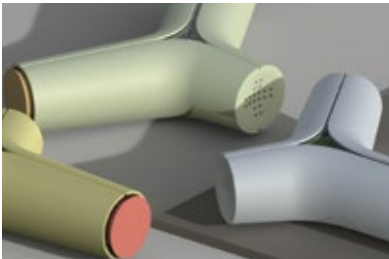
IKEA Singapore's Young
Designer Award 2018
Top 8
KALLIE
Sheryl Teng, Yong Zi Fong



7th Singapore International
3D Printing Competitions
**Tertiary Student Category /
Stationery**
MONUMENT
Aaron Chooi, JonJoe Fong



Singapore Design Award
Silver (Student Category)
VAPOUR - Portable Humidifier
for Air Travel
Yasmine Cheng



Singapore Design Award
**Platinum (Student
Category)**
TIPOT - Thermal Flask for
users with arthritis
Stephen Ow



APDC*IDA Design
Excellence Awards 2018
Winner
POLITE CHAIR
Leung Jia Jun



International Design
Awards 2017
**Winner (Accessory /
Jewellery)**
Leung Jia Jun



International Design
Awards 2018
Gold
CHEW
Kevin Yeo, Tommy Cheong,
Lim Jing Jie



Singapore Design Award
Gold (Student Category)
#SIGN4US
Miko Yeo, Ye Siling Jaycelyn,
Ian Tan

ACHIEVEMENTS STAFF

President’s
Design Award 2018
Designer of the Year
Hans Tan



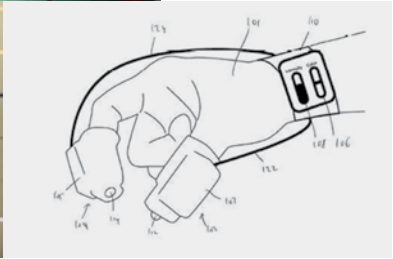
New Design Tools:
Observation, dialogue,
collaboration, interpretation
and application
Dr. Jung-Joo Lee



Surgical Guide & 3D Printed
Prosthesis
Jurong Bird Park
Cai Bohong
Keio-NUS CUTE Centre



Technology translation of
our ETaste technology
Dr. Yen Ching Chiuan



Patent -
Veins Finder Design
Division of Industrial Design,
Keio-NUS CUTE Centre
and SOM NUS

EXHIBITIONS WORKSHOPS

Global Grad Show
2018
Dubai Design Week



Exchanged Forms
Tokyo Exhibition
Design Incubation Centre (DIC)
KYOTO Design Lab, KIT



Maker Faire Singapore 2018
ML4D: Machine Learning for Design



DID GradShow 2018



MAKERTHON 2019



DID Open House 2019

PERMANENT FACULTY

Dr. Christian Gilles Boucharenc
Head & Associate Professor

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

Hans Tan
Deputy Head (Academic) &
Assistant Professor

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

Dr. Yen Ching Chiuan
Associate Professor

Axel Thallemer
Professor

Martin Danzer
Associate Professor

Patrick Chia
Associate Professor

Donn Koh
Senior Lecturer

Clement Zheng
Instructor

Winnie Chin
Manager

Avril Teh
Assistant Manager

Nur Nadirah Binte Haron
Senior Executive

Chew Jia Ying
Teaching Assistant

Esli Ee
Research Assistant

EXTERNAL EXAMINER

Cai Jun
Professor
Academy of Arts & Design,
Tsinghua University

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Ulrich Schraudolph

Wai Yuh-Hunn

Olivia Lee

Celia Wong

Ash Y.S Yeo

Kwok Wai-Chiau

Jason Ong

Vincent Leow

Chan Zewei, Jesse Nicholas

Yong Sheng

Justin Zhuang

Priscilla Lui

Timothy Wong

Jasmine Quek

Yong Jieyu

Aleksandar Kostadinov

DESIGN INCUBATION CENTRE (DIC)

Christophe Gaubert
Director & Visiting Associate Professor

Yuta Nakayama
Senior Design Engineer

Willie Tay
Senior Designer

Ricky Ho
Graphic Designer

Poh Yun Ru
Designer

Chen Chee Keong
Specialist Associate

Colin Thiam
Specialist Associate







Our hearts are with Jon Tsang,
without whom our journey in DID
would not have been the same

Class of 2019

