

INSPIRECON

2025 INNOVATION BEYOND IMAGINATION

BY SUTD, THE **WORLD'S FIRST** DESIGN AI UNIVERSITY

14 APRIL 2025

DAY | TIME

MONDAY | 10AM - 3PM
OPEN TO PUBLIC | FREE ADMISSION

LOCATION

CAMPUS CENTRE, LEVEL 1
SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN
8 SOMAPAH ROAD, SINGAPORE 487372

PROGRAMME

10.00am	Showcase Starts Arrival of SUTD Chancellor, President Tharman Shanmugaratnam
10.05am	Welcome Address
10.10am	Award Ceremony
10.20am	Free & Easy Interaction with Project Teams
3.00pm	Showcase Ends

TRAILBLAZING A BETTER WORLD BY DESIGN.



INSPIRECON 2025

Get ready to be inspired!

Experience the power of student innovation and design at Singapore University of Technology and Design's (SUTD) InspireCon 2025, where the best of our Capstone, Baby Shark Fund, and Engineering Product Development (EPD) projects will be showcased.

About SUTD

SUTD has always stood out for its unique multi-disciplinary, design-centric approach in nurturing technically-grounded leaders and innovators to serve societal needs. At the core of our curriculum is a hands-on and collaborative pedagogy and environment, where design, artificial intelligence, technology help our students understand and solve real-world challenges.

Capstone

A key piece of this philosophy is the industry-based Capstone Design project. This project, which is the culmination of four years of hands-on, cohort-based interdisciplinary learning provides final-year students with the opportunity to apply all they have learnt to solve real-world challenges faced by companies. Let this year's innovations show you how SUTD students expand the possibilities of trailblazing a better world by design.

Baby Shark Fund

Innovation lies at the crossroads of novelty and usefulness. It is around us and in everything we do. Big or small, SUTD is always looking to support innovation at every level, regardless of where these ideas come from.

That is why the Baby Shark Fund was introduced. Its aim is to provide our students with the opportunity to engage in ground-up initiatives that stem from observations that they made in their daily lives. It is a platform for them to experiment, validate, build, and deploy their ideas to tackle real-world challenges.

EPD

EPD is a one of five degree programmes at SUTD. We feature some of the innovative solutions that our students have developed for Term 5 and 7 courses to boost productivity, health, and comfort, combining technology with human-centred design to tackle real-world challenges in the area of human enhancement.

STUDY PROGRAMMES

ASD ARCHITECTURE AND SUSTAINABLE DESIGN

CSD COMPUTER SCIENCE AND DESIGN

DAI DESIGN AND ARTIFICIAL INTELLIGENCE

EPD ENGINEERING PRODUCT DEVELOPMENT

ESD ENGINEERING SYSTEMS AND DESIGN

LIST OF CAPSTONE PARTNERS

ALP ROCKS PTE LTD

Bank Julius Baer & Co. Ltd., Singapore Branch

Changi Airport Group (Singapore) Pte. Ltd.

Changi General Hospital Pte Ltd

Eastern General Hospital

Constellar Holdings Pte Ltd

DP Architects Pte Ltd.

DP Sustainable Design Pte Ltd

ENSIGN INFOSECURITY (CYBERSECURITY) PTE LTD

EV-electric (EVe) Charging Pte Ltd

FHL CAPITAL PTE. LTD.

FlexoSense Pte Ltd

Frontier Bio Corporation

Future Systems and Technology Directorate
Ministry of Defence

Healthcare Redesign, Alexandra Hospital

Heron Airbridge Pte Ltd

Home Team Science and Technology Agency (HTX)

IDEMIA SINGAPORE PTE. LTD.

Jeppesen Asia/Pacific Pte. Ltd.
(Boeing Global Services Digital Solutions & Analytics)

Johnson Controls (S) Pte Ltd

KLASS Engineering & Solutions Pte. Ltd.

LeapThought Asia Pte Ltd

Lions Befrienders Service Association (Singapore)

L'Oréal Singapore

MAGES Studio

MAO SHENG QUANJI CONSTRUCTION PTE LTD

Municipal Services Office

Nanyang Technological University

Oversea-Chinese Banking Corporation Limited (OCBC)

Oyika Pte. Ltd.

Procter & Gamble International, Singapore Branch

Republic of Singapore Airforce

Schenker Singapore (Pte) Ltd

Sengkang General Hospital

Singapore Civil Defence Force

Singapore Institute of Manufacturing Technology,
A*STAR Research Entities

ST Engineering IHQ Pte. Ltd.

Tan Tock Seng Hospital Pte Ltd

Techfox Private Limited

The Esplanade Co Ltd

LIST OF BABY SHARK FUND PROJECT PARTNERS

Singapore Computer Society

The GEAR by Kajima

Singapore Centre for Social Enterprise, raISE Ltd

Breakthrough Energy Fellows

LIST OF EPD PROJECT PARTNERS

James Dyson Foundation

Changi General Hospital Pte Ltd

Sengkang General Hospital

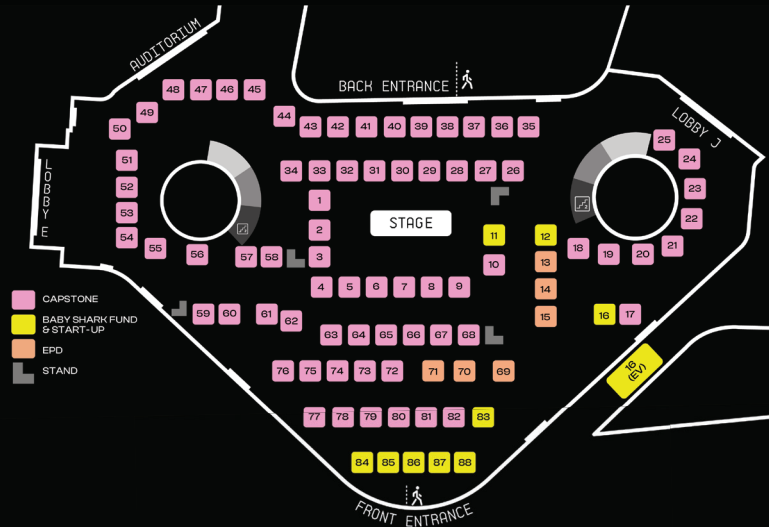
Eastern General Hospital

Assisi Hospice

Booths at

SUTD Campus Centre

LEVEL 1



CAPSTONE PROJECTS

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- 52 Improving Volunteer Preparedness for Crisis Situations
- 53 SkyPulse
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- 55 Safe Paths For All
- 56 Combat Ready Predictive Maintenance
- 57 StioK'Em – Bringing STEAM Education to Every Child
- 58 Bubbles By The Bay
- 59 Autonomous Tethered UGV-UAV System for Safer Aerodrome Inspections
- 60 Car Clearance Kiosk
- 61 cAIRE @ Cool Stuff 4 Hot People
- 62 IoT-Enabled Gait Monitoring System
- 63 CrossTalk Secure
- 64 mirror: see the one who sees you
- 65 I Learn
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- 67 Ulmagine
- 68 Enriching Active Ageing: Empowering Seniors
- 72 RAPID SHIELD
- 73 AI AUGMENTED FLIGHT ROUTE PLANNING
- 74 Puffin – Your Partner in Asthma Wellness
- 75 Volatix
- 76 Defarm – Decentralised Farming
- 77 Anborarm
- 78 Graph-based Agentic Retrieval (GAR)
- 79 eledock
- 80 PROSPERO
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- 82 NewNails

BABY SHARK FUND PROJECTS & START-UP

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- 84 Greenairy
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EPD PROJECTS

- 13 Oxytrolley
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- 70 Best In Vest
- 71 Warning On Wall (W.O.W.)

LIST OF CAPSTONE PROJECTS

1 Waste to Worth

With the rise of e-commerce and globalisation, vast amounts of plastic are consumed in the international movement of goods. Waste to Worth tackles this pressing challenge by transforming plastic waste in the transportation industry. In partnership with DB Schenker, Waste to Worth recycles single-use plastics into innovative, custom logistics equipment and packaging alternatives. This initiative pilots a circular economy model within DB Schenker's Red Lion Air Freight warehouse, driving sustainability in the supply chain.

ASD

Wong Zi Yi
Su Yan Ting
Thannirmalai Kavithaa
Leong Chao Dong

EPD

Johan Mohammad Armstrong
Manson Lee Qi Quan
Aum Bansal

2 CarbonSmart

CarbonSmart is an automated embodied carbon calculator that enables users to perform sustainability assessments using standardised, vendor-neutral file formats during the building design development stage. With its ability to assess carbon impact and material hotspots, CarbonSmart provides critical feedback and insights that empower users to make informed design decisions earlier in the project lifecycle. The project seeks to minimise repetitive and manual checks, which are often treated as an afterthought, saving valuable time for stakeholders in the built environment.

ASD

Teh Jolene
Brayden Tang Jia Jun
Vanessa Ann Lim Hui Mei

CSD

Chu Chi Huen Carina
Chun Zhi Heng Davis
Wong Jia Kang

3 AUROMA

AUROMA is fragrance exploration reimaged on a digital web platform. Users can uncover their fragrance personas and explore recommendations intelligently curated for their multi-faceted identities. Consolidated real user reviews support these recommendations, enhancing the exploration experience. Designed for users with varying levels of olfactory knowledge, AUROMA leverages artificial intelligence (AI) to deliver an immersive and truly personalised user experience like no other. What's your AUROMA?

CSD

Lim Vannara
Cheong Kah Yen Kelly
Bundhoo Simriti
Liew Min Hui
Koh Jin Rui Vinny
Clayson Soh

DAI

Senna Lin Tan

4 GRIP-X: Adaptive Gripper for Manipulation

GRIP-X is an AI-powered robotic sorting and labelling solution that revolutionises high-mix and low-volume documentation. It can precisely identify and photograph items, as well as automatically generate labels using OpenAI API. Furthermore, the custom gripper is able to handle objects of varying shapes and surfaces up to 20cm wide, before sorting them by size – demonstrating the seamless integration of robotics and AI in the digitisation of physical collections.

CSD

Isaac Tay Eng Hian
Lim Cheng Ee

EPD

Looi Chi Han
Joshua Tan
RK Suriya Varshan

ESD

Ng Sue Chi
Chai Yu Cheng, Raynard

5 Fitback

Fitback is an AI-powered size recommendation plugin for online apparel businesses. Leveraging computer vision technology, it accurately obtains user measurements to recommend the perfect fit, reducing returns and enhancing customer satisfaction. By cutting waste and streamlining logistics, Fitback creates a smarter, more sustainable shopping experience for all.

CSD

Michael Pang Jon Yerng
Gopal Guruprasath
Koh Chee Kiat
Muhammad Ilham Fadhillah
Yeo Chi Ning Tristan

EPD

Lucas Goh Chen Ray

6 EmpathIQ

EmpathIQ is a web-based, AI-powered communication coach that aims to promote better healthcare education in communication. It is designed to transform how future healthcare professionals develop patient interaction skills. This state-of-the-art simulator offers a structured, accessible, and scalable platform that transcends traditional in-person training. By providing real-time, personalised feedback on tone, facial expressions, and conversational flow, EmpathIQ helps users refine empathy-centred medical engagement and build confidence for effective patient care.

CSD

Gan Chin Song
Shelen Go
Michelle Ordella Sumaryo

ESD

Lin Yixiu
Muhammad Ibrahim Bin
Mohammad Fauzi

7 ORAL CARE DEMO BRUSH SYSTEM

A demo brush system that showcases cleaning efficacy in hard-to-reach areas of the mouth, enables brush comparisons, and visually communicates the superiority of round head power brushes as opposed to other forms of brush heads.

CSD

Chew Ching Hian
Voon Cheng Chiat Ivan
Justin Looi Jenn Wei

EPD

Caroline Tiu
Janelle Ng Jia-Min
Erick Tan
Stephanie-Ann T. Loy

8 KagaMe: AI Virtual Stylist and Digital Wardrobe

KagaMe is a virtual stylist and digital wardrobe mobile app that enables users to discover their personal style and shop for clothes that complement their existing wardrobe. Users can simply upload images of their favourite clothes and the app utilises a Large Language Model (LLM) to identify their style persona and recommend outfits accordingly.

CSD

Aurelius Bryan Yuwana
Lee Chien Shyong
Nellie Khoo Nee Liq
Shwetha Iyer

DAI

Jordan Lee Wei

EPD

Ayman Khan

ESD

Liaw Ge Nee

9 DV8

DV8 is a next-generation cleaning robot designed to transform existing airport cleaning operations. Equipped with AI capabilities, DV8 is able to deviate from any ongoing task to "destroy" identified litter instantly before resuming its original task. Designed with an adaptive path planner, DV8 empowers its operators to configure cleaning operations with minimal disruptions to passenger movements, while maintaining round-the-clock airport cleanliness. DV8 is more than just a cleaning robot, it is the future of cleaning operations.

CSD

Jon Koo Jia Jun
Kwok Keith
Gizelle Lim Yin Xuan

EPD

Wong Kang Zhao
Ng Chi Seng, Darren

ESD

Lim Cheng Yi Fano
Tan Jun Onn

10 AI INTERACTIVE MANIKIN FOR COMBAT TRAINING

An AI-driven combat training manikin that enables trainees to practise their techniques, either with or without a baton, against an interactive opponent. With computer vision capabilities that enables it to better understand the environment, the manikin can better predict trainees' movements and provide real-time responses, including simulating strikes and dodging attacks.

CSD

Swarangi Subodh Mehta
Ching Xin Wei

DAI

Jaikirat Kaur Narula
Kaillin Chen

EPD

Vitalii Kataev
Ayush Neogy

17 CURVERO

CURVERO is an innovative autonomous cleaning robot developed to facilitate large-scale cleaning of curved glass barriers of up to 2m in height at the airport arrival halls. Unlike current on-the-market cleaning solutions, our robot has the ability to tackle cleaning surfaces of various curvatures. It is portable and intuitive to use, enabling an easier transition from manual to automated cleaning of glass barriers.

CSD

Tan Hwee Hwa, Jovi
Wang Xingrui

EPD

Deshpande Sunny Nitin
Ek Hong Sheng Gerald
Tom Manuel Opalla Piccio
Gan Bei Ru
Tian Wyndham

18 Hospital Delivery Robot

An autonomous hospital delivery robot designed to streamline logistics by automating the storage, retrieval, and transportation of medical supplies. Utilising dynamic scheduling and minimising robot idle time, the system enables healthcare professionals to despatch and collect supplies at their convenience, ensuring seamless deliveries while enhancing operational efficiency and workflow flexibility.

CSD

Dangi Smriti
Tan Hao Yi

DAI

Ang Han Ming Shaun
Hubert Lee Sze Wei
Yang Ziyi

EPD

Chai Gien Lyn

19 Design Detection Method

This project explores the development of a contactless system that integrates AI with eye-tracking technology to detect a person's familiarity with objects in an investigative manner. It offers a non-invasive alternative to current traditional contact-based methods. Existing studies on eye-tracking often focus on facial or text-based recognition, whereas this solution focuses on object image-based personal familiarity, filling a significant gap in current literature.

CSD

Radhi Priya Janakiraman
Florence Elizabeth Nguyen Shi Ky

EPD

Ansley Tan An Qing

ESD

Teo Yu Wen
Joyce Tan Rui Lin
Melvin Chong
Amni Syarah Imerya Bte Salim

20 Ensign Exercise Platform

Ensign Exercise Platform is a web-based productivity tool designed to streamline the creation of tabletop exercises. It automates key processes such as collecting information, generating scenarios, and injecting schedules, thereby enabling users to efficiently plan and manage such exercises. The tool aims to enhance collaboration, reduce manual effort, and improve overall exercise effectiveness.

CSD

Athena Chua Xuan
Tay Wei Han Joel
Abram Tan Jia Han
Kishen S/O Durairajoo
Ankita Parashar

DAI

Tan Kay Wee

21 NautiQuest

Our project focuses on developing a low-cost Autonomous Underwater Vehicle (AUV) with real-time AI-driven underwater scene understanding, including object detection and classification. At just S\$4,000, its affordability makes coastal water surveillance readily available for detecting potential threats. Additionally, our self-developed simulation platform not only allows new components to be implemented and tested, but also software deployment time to be reduced. This approach supports low-cost navigation and offers modular sensor options tailored to mission-specific requirements.

CSD

Sarang Nambiar
Lee He Fan

DAI

Lim Yu Jie

EPD

Lakshya Saraf
Pang Jun Kai, Darryl
Ong Song Ze

22 OOG Navigator

An AI-powered web app designed to optimise the management of Out of Gauge (OOG) cargo by providing tailored equipment recommendations, automating Method Statement and Risk Assessment (MSRA) report generation, and integrating advanced features such as dynamic checklists and email notifications. It not only enhances communication, ensuring compliance with safety regulations, but also streamlines end-to-end logistics processes for secure and compliant cargo transportation.

CSD

Kripashree Suryaprakash
Rishika Banka
Elvern Neylmav Tanny
Lim Jun Kiat

DAI

Wang Zixuan

ESD

Sharanya Seth
Ahmad Tsaqif B Yuzamri

23 Healthy Bedok North!

Envision a vibrant health-promoting park for the residents in Bedok North and patients of the future Eastern General Hospital where social connections, active lifestyles, healing spaces and quiet retreats come together to foster a healthier community. At its heart is the Wellness Ring, an interactive social space that integrates diverse activity zones such as an arts zone, an outdoor kitchen and sensory gardens.

ASD

Aceson Han Chang Chou
James Leo Wei Shaun
Jackie Lin Ri Hao
Tay Jing Hui Clarissa

CSD

Xavier Tan Jun Han

24 Anatomy Assemble

Anatomy Assemble is a cutting-edge interactive model that will revolutionise anatomy education in medical schools. Designed for hands-on, independent learning, it boosts engagement, dexterity and knowledge retention through tactile exploration. Featuring modular components with built-in smart sensors, it delivers real-time audio feedback upon touch, transforming passive study into an immersive experience. Its reconstructive design caters to the dynamic, next-generation student, making anatomy learning an intuitive, interactive, and unforgettable experience.

CSD

Ng Hau Yin Kendrick

DAI

Ayu Permata Halim Mendoza

EPD

Soh Zhi Ying
Thang Li Wen, Elena
Benjamin Lim Zhi Yong

ESD

Zaina Aafreen d/o Ziyavuddeen
Yap Wei Ping, Jordan

25 SAL2.0

The Special Assistance Lane (SAL) is an automated immigration gate designed to facilitate self-clearance for travellers with reduced mobility and family groups of up to four persons. Building on its predecessor, SAL 2.0 introduces ergonomic redesigns of the gate and scanners, further enhancing the clearance process and making it more intuitive and user-friendly for travellers.

CSD

Chong Wen Xuan Darryl
Goh Yun Ni, Jamie

EPD

Leow Yu Chuan
John Tan Zhi Qian

ESD

Lim Zhi Xian, Jordan
Jerome Lee Jian Le
Tan Jasmine

26 ZEN_PeaceInAPod

An upright ergonomic resting pod, PeaceInAPod, offers a high degree of customisability that aims to provide compact and modular resting spaces for travellers at the airport. With its personalised, upright, ergonomic resting position called the ZEN Position, the pod automatically changes itself to fit every user, ensuring comfort for all.

ASD

Nur Adelin Binte Johari
Paraaga Raghavendra

CSD

Jignesh Motwani

EPD

Muhammad Aqif Yeo
Xie Jia Cheng

ESD

Foo Wen Xin

27 ORION

ORION is an intelligent navigation system designed to enhance user experience with AI-driven search and voice navigation capabilities on a mobile banking app. The user system automates user interface discovery with voice control, while the developer toolset assists developers in testing their user interface (UI) and mapping out navigation flows. By leveraging AI, the two systems not only make digital interactions more intuitive and efficient for users, but also support developers in maintaining the scalability of the solution.

CSD

Javin Eng Hee Pin

DAI

Aw Jia Zhi Billy
Cheng Wei Xuan
Cheong Jun Xiang
Chong Yong Liang
Joshua Wee Yong Sun
Onn Hui Ning

28 Data Analytics Processing Tool

A machine-learning-powered system that is designed to display customised dashboards and draw insights into individuals' physiological fitness profiles at the Civil Defence Academy, the training institution of the Singapore Civil Defence Force (SCDF). Key deliverables include a unique identification system, data integration tools, predictive models, and interactive dashboards, all of which ensure a secure and seamless integration with SCDF's existing systems for a scalable, future-proof solution towards enhancing training efficiency.

CSD

Ng Han Yit Ryan
Shjonathan Tan Tze Ern
Beckham Wee Yu Zheng
Fernanda Fadja
Ng Junhao Marcus

ESD

Yeong Kai Xuan
Doni Kurniawanto

29 HTX Enhancg Emotion Analysis

This project aims to enhance emotional analysis in virtual reality (VR)-assisted cognitive-behavioural therapy (CBT) for drug abusers in Singapore. By integrating AI with physiological sensors that track heart rate and skin conductance, the system provides psychologists with real-time emotional insights. Additionally, VR simulations will be enhanced to create more realistic drug cue exposure, improving the effectiveness of CBT.

ASD

Aurelia Tan Ziyi
Suditi Ganesh Kamat

CSD

Rajavelu Sree Devi

EPD

Mohd Al-Ahda B Mohd Adib
Nuryn Insyirah Bte Mohd Adib
Soumyadeep Mahata

30 Machine Learning to Analyse Electronic Health Records and Clinical Data for Optimising Population Health

Harnessing the power of machine learning, this cutting-edge solution transforms healthcare by predicting the readmission and mortality risks of asthma and chronic obstructive pulmonary disease (COPD) patients. With advanced AI-driven analytics, real-time risk assessments, and intuitive visual dashboards, our solution enables proactive interventions that will improve patient outcomes. By aiming to reduce hospital readmissions and optimise resource allocation, this innovation sets a new benchmark for intelligent, data-driven healthcare.

CSD

Felicia Jow Jia Ling
Ng Sihui
Ang Teng Hsuen

ESD

Zovin Yeo Yu Kai
Grattapand Keeratimongkollert

31 AI-Driven Avatars

An AI-powered virtual platform featuring realistic human avatars for immersive, low-pressure language practices. Driven by AI tools such as Llama-2, Coqui TTS, Blender, and Rhubarb, the experience will help users build fluency and confidence.

CSD

Aislini Deb Barma
Parthasarathy Harini
Dheeptha Rajesh
Natalie Ang Zi Yi
Ramita Bharathithasan

DAI

Panigya Arya

ESD

Nandini Prabakaran

32 AccessAble

AccessAble is a digital tool that empowers architects to design more inclusive Transit-Oriented Developments (TODs), with a focus on wheelchair users and families with young children. By combining spatial analysis with AI-driven evaluations, the tool provides intuitive, visual, and quantifiable feedback that guides architects in designing seamless, enjoyable journeys beyond traditional accessibility.

ASD

Austin Law Qing Quan
Darius Chen
Law Zhenwen
Low Chean Ying Faith

DAI

Aditya Kumar

ESD

Chai Bing Zhe

33 Combat Ready Vision AI

Using computer vision and scene captioning, our project automatically generates textual descriptions of military combat operations from both live and recorded videos. By replacing traditional manual observation, this technology significantly reduces the time required for intelligence reporting. Our project focuses on developing AI models that accurately capture the essence of combat scenarios while understanding how events unfold over time, enabling faster and more efficient decision-making in military operations.

CSD

Sherin Karuvallil Saji
Siddharth Ganesh
Jash Jignesh Veragiwala
Jerel Ong Bao Xiang

EPD

Teo Keng Wee, Skyler

ESD

Shaun Tan Ke Jia

34 Calm Space

Esplanade - Theatres on the Bay is taking another step towards making the arts more inclusive with portable Calm Spaces — sensory-friendly retreats designed for patrons who may feel overstimulated during performances. Thoughtfully designed to be flexible, easy to set up, and visually calming, these Calm Spaces offer a welcoming environment where everyone can feel comfortable and at ease. By creating more accessible experiences, Esplanade hopes to make the joy of the arts available to all, inspiring greater inclusivity in arts and performance venues everywhere.

ASD

Zachary Caius Lim Tze Yan
Yiew Jae Tzen
Chan Kay Chuen
Aye Yu Mon

CSD

Poh Jun Kai, Nigel

ESD

Davina Faith Hadinyoto
Tan Yi Shu, Asta

35 Biophilic Immersive Therapy

The Biophilic Immersive Therapy is an innovative therapeutic intervention designed specifically for hospital wards caring for delirious and elderly patients. By integrating interactive plant pegs with a responsive pegboard, this system triggers dynamic nature-inspired projections on the ceiling. The installation harnesses the soothing influence of nature — often lacking in clinical settings — to provide biophilic therapy that can help stabilise mood, reduce agitation, and promote mental well-being. Through tactile engagement and immersive visual stimulation, the project creates a healing ambience that supports patient recovery and improves overall ward atmosphere.

ASD

Poon Jun Zhe

DAI

Lim Kai En Christopher
Chin Wei Ming
Yip Ze Sheng Brighton

EPD

Clarise Ang Qi Yi
Chua Min Jie Michelle

36 F1gures Lite

F1gures Lite is a user-driven property financing and purchase planning tool that empowers clients to make informed decisions based on their financial context, including income and net worth. By leveraging key financial and property data, users can explore tailored insights into their property purchasing journey. For additional guidance, they can seamlessly connect with a F1gures-accredited financial advisor, ensuring expert support throughout the decision-making process.

CSD

Ang Yue Sheng
Tay Yang Chun Lucas
Seah Ying Xiang

DAI

Lim Tiang Sui, Faith
Janice Yohana

ESD

Jeriah Yeo Ruei

37 EVlectrifying Sentiments

Our project delivers an advanced analytics dashboard designed to seamlessly integrate multiple data channels, as well as enable flexible and in-depth analysis of sentiments about the evolving electric vehicle (EV) landscape in Singapore. With dynamic visualisations and topic detection, the dashboard provides a comprehensive overview of public sentiment and emerging trends. By leveraging data-driven insights, our solution empowers stakeholders to look at how they can further enhance the EV user experience.

CSD

Keith Chua Dian-Xun
Miguel Ong Yan Kai
Siew Cheng Nee

ESD

Boey Sze Min, Jeanelle
Joash Tan Jia Le
Ong Kong Zheng

38 Foody

Foody is an AI platform built to provide food lovers hyper-personalised recommendations based on their personal preferences and the preferences of their community. Foody dreams of building a recommendation system – free of advertisements – where users can connect with fellow foodies, discover hidden gems and pursue a "live to eat" lifestyle.

CSD

Dexter Leonard
Stefanie Tan Hui Zhen
Ong Zheng Han
Mubaraqali Muhammed Sufyanali

DAI

Jay Edward Goh Wei Wern

ESD

Gabriel Jiaren Broughton
Marc Yee Han Wei

39 Smart POS

Smart POS is a mobile-first smart Point-of-Sale system designed to digitalise vehicle workshops across Southeast Asia by replacing manual processes with automation. It integrates modular inventory management, customer relationship management, and AI-driven marketing, enabling seamless stock control, procurement, and sales. Predictive analytics and real-time insights paired with an AI Assistant helps optimise operations, improve decision-making, and enhance customer engagement, ensuring operational efficiency regardless of digital proficiency.

CSD

Brandon Tan Rui En
Lee Le Xuan
Paul Ong Zesheng
Darren Chan Yu Hao

DAI

Ooi Jia Sheng

ESD

Ethan Leng Chuanzhi
Ong Jun Da

40 STEVFNs

STEVFNs represents a groundbreaking approach to energy system analysis. Unlike traditional models that treat different energy assets and services separately, STEVFNs introduces a unified framework for modelling these components together. This provides a comprehensive view of the energy system, enabling the analysis and optimisation of various configurations and scenarios with unprecedented ease and flexibility.

CSD

Parth Kumar
Andrea Cheah Shiue Er
Mohana Selvakumar
Haritha Shraeya Rajasekar

EPD

Isabel Judith Koh Wee Yi

ESD

Reina Peh Shu Ting

41 Fruitful

Fruitful is a machine learning model that analyses real-time weather data from sensors to provide personalised gardening advice via a mobile app. By considering factors such as temperature and humidity, the app offers tailored recommendations to gardeners, helping them optimise plant care, improve yields, and adapt to changing weather conditions.

ASD

Alvin Loo Yi Wei
Kacey Tang
Lim Yi Zheng

CSD

Samuel Chia Jin Kiat

ESD

Lucas Yap
Hung Fong Ching Hillman
Marcus Tan Zong Wei

42 Project ALERT: Assessing Latency, Engagement and Reaction Time (ALERT)

Equipped with gaze and decibel detection, Project ALERT is a mobile app that delivers lab-standard cognitive testing anywhere, and quantifies a user's state of alertness using the Psychomotor Vigilance Task.

CSD

Daniel Yuen Jun Rong
Ng Xue Min

EPD

Ng Zheng Han

ESD

Tee Yue Wan
Chee Qin Ning Emily
Bradley Lye Jun Wei
Ng Qiao Wen

43 SecondPlace: Bringing secondhand fashion, all in one place

SecondPlace is an innovative online marketplace designed to support thrift stores and make secondhand shopping easier for consumers. With its Snap-Check-List feature, stores can list items nine times faster using just one image, enabling them to manage large inventories effortlessly. Shoppers will also benefit from the Virtual Clothing Rack, which offers a personalised and convenient way to discover unique secondhand fashion finds.

CSD

Darren Teo Yiqian
Fung Jing Wen Elisabeth
S Hamsaraj

DAI

Ethan Choo E-Rhen

EPD

Kaung Khant Htet

ESD

Ng Wei Xian

44 AlgoOlio

Through various multimodal deep learning techniques, AlgoOlio aims to gear programmers up in time for technical interviews by building computational thinking intuition and targeting gaps in domain knowledge.

CSD

Tan Pheng Yuan Ryner
Dian Maisara Binte
Muhamed Iskandar
Dorishetti Kaushik Varma
Heng Jia Ming
Toh Wee Teck Dylan Mathew

ESD

Aayush Singh

45 Automated Hydroponics Harvester & Food Sustainability Exhibit

An automated harvesting system designed to reduce labour requirements in hydroponic farming, especially during harvesting, which is the most labour-intensive stage. The system is accompanied by an educational exhibit that highlights Singapore's food sustainability goals, with a focus on the "30 by 30" vision under the Singapore Green Plan 2030. The project aims to improve public attitudes towards food sustainability and increase public engagement with national green initiatives for stronger food security.

ASD

Jonathan Leong Zhen Cong
Ow Yu Ning, Nicole
Oh Yu Fang

EPD

Lee Iy Meng
Michael Lim Kee Hian
Lee Jun Lei, Lucas

46 SoulGood

SoulGood is a mobile app designed to detect the risk of depression in youths aged 13 to 25 and provide them with personalised support. It uses the Apple Watch to monitor heart rate variability, prompting users to open the app when stress is detected. Users can access various support features such as the chatbot Souly, stress-relieving music recommendations, wellness articles, and professional intervention. SoulGood offers a tailored, user-focused approach to mental health management.

CSD

Anutham Mukunthan
Muhammad Abid Firas Bin Azlizam
Noven Zen Hong Guan
Cheong Hao Shaun

DAI

Soh Ying Yu

ESD

Eshaan Jakhmola

47 Predictive Forecast & Reporting Through AI/ML on Business Performance

By using machine learning techniques, including regression, time series analysis, and classification models, this AI-powered predictive sales reporting solution is able to forecast sales performance, analyse key metrics, and identify the causes for targeted interventions. The insights generated are presented through a Power BI dashboard to support the leadership team in making informed business decisions.

CSD

Vainavi
Lim Jie Han
Mahima Sharma
Wong Oi Shin

ESD

Chow Zhe Hui
Fannisa Fahmi

48 Multi-Modal Speech Capturing Device

A smart wearable designed for security personnel working in noisy environments like airports and malls. It integrates advanced audio processing, beamforming, and automatic speech recognition (ASR) to ensure clear, real-time communication. Key features include noise suppression, enhanced playback, near real-time transcription, and generative error correction (GER). By improving speech intelligibility, it reduces errors, as well as enhances safety levels and decision-making capabilities of the security teams.

CSD

Abel Lee Yang Yeow
Jone Chong Jin
Loh Jianyang, John
Wang Jun Long Ryan

DAI

Caitlin Daphne Tan Chiang

EPD

Leong Wen Jie Lucas
Ong Jing Ting

49 N.E.S.T. — Neurovascular Environment For Safe Transit

N.E.S.T. is a portable incubator designed to transport sensitive biological samples. It comes with an in-built motion stabilisation system that minimises spillage of biological samples while in motion, and has a self-regulating sterile environment with remote monitoring capabilities that facilitates the survival of cells. This portable incubator enhances inter-lab collaboration by enabling samples to be brought out of the lab safely to other locations.

CSD

Shaun Phua Wee Jin
Zachary Seow Shijie

EPD

Benedict Chua Yu Hern
Choo Wei Ming
Tan Yu Quan
Yap Boon Pin

ESD

Ezra Lerh Zi Hui

50 BalloBin

BalloBin is an interactive bin that uses gamification to encourage proper waste disposal, where users cast votes on playful questions such as "Is durian overhyped?" by tossing trash into the bin. With its ability to let users vote on questions and track votes, BalloBin transforms the act of throwing trash from mundane to engaging, whilst keeping our shared spaces clean and tidy!

CSD

Nithyashree D/O
Ramanathan Vairavan
Linus Koh Zhijie
Sng Hong Aik, Enric

EPD

Saahas Sunil
Deoferio Raizel Hannah Quirimit
Muhammad Khairul Umar
Bin Mohamed

ESD

Yeo Kai Wen

51 FITTR

FITTR is a state-of-the-art compact fitness station designed for strength training and flexibility exercises in small spaces. It features electronic motorised weights, allowing users to adjust resistance seamlessly through a digital interface, replacing the need for traditional weight stacks. FITTR delivers a professional gym experience in a sleek, space-saving design that fits effortlessly into modern homes.

CSD

Patrick Phone Myat Mo
Ansh Oswal
Sarang Nirwan

EPD

Abhijith Kizhakke Chittadath
Ethan Gyan Singh

ESD

James Teo Ming Teck

52 Improving Volunteer Preparedness for Crisis Situations

Our project introduces a crisis management framework that empowers first responders to resolve unexpected emergencies effectively. Designed to be robust and widely applicable, it is relevant to various events involving volunteers. Through a gamified experience, volunteers learn, apply, and assess their crisis management skills. In-game evaluations will analyse proficiency and identify areas for improvement. Through customised feedback, volunteers will understand how to improve their competency in identifying and resolving crisis.

CSD

Esan Natraj
Teh Hui Yi
Tan Xynn Ee, Cordelia

ESD

Toh Zacarius
Daniel Simmonds
Athena Tan Yan Hua

53 SkyPulse

SkyPulse is a battery management system for electric aircrafts that leverages machine learning for optimisation, regression, and classification. It uses PostgreSQL for data storage and ReACT for a user-friendly front end. The system minimises battery wear and maximises passenger throughput on regional airways by predicting consumption, optimising flight schedules, and making real-time decisions on charging or swapping batteries, ensuring an efficient and sustainable operation.

CSD

Dhruv Pradhan
Vanya Jalan
Atul Parida
Venkatakrishnan Logganesh

ESD

Anirudh Bharadwaj
Kodhai D/O Kannan

54 Snatch!

Snatch! transforms events into engaging, real-time experiences. Our platform creates excitement through interactive competitions, countdowns, and community features, making every purchase opportunity an event to remember. Whether it is to sell tickets, products, or experiences, Snatch! turns passive browsers into active participants while building lasting community engagement.

CSD

Chia Yong Kang
Janessa Jiajing Yang
Lim Sheng Xiang
Ryan Pey Jun Hao
Tee Zhi Zhang

DAI

Joseph Low

55 Safe Paths For All

A strategic path-marking design that uses data-driven design methods to guide pedestrians and active mobility users, helping them to become more aware of their surroundings and make safer choices. It encourages respectful behaviour, especially towards vulnerable users like children and the elderly, promoting a safer and more considerate shared space.

ASD

Chua Shuei Ray Eusebius
Yeo Hai Feng

CSD

Toh Hong Jing
Chew Kia Hwee

ESD

Andy Low Zhi Hao
Lee Chun Wai
Hon Xue Yi

56 Combat Ready Predictive Maintenance

A revolutionary AI-driven predictive maintenance platform designed to detect anomalies, prevent failures, and enhance combat readiness. By analysing historical performance metrics, this system provides military personnel and technicians with smarter diagnostics, thereby improving safety and cost-effective fleet management.

CSD

Chandrasekar Akash
Chandrasekar Dheena Leonora
Wan Aisyah Bte Wan Mahmood
Azad Hussain S/O Zahir Hussain

DAI

Charlene Teo En

EPD

Ng Wan Xing

57 Stick 'Em — Bringing STEAM Education to Every Child

Stick 'Em is an entrepreneurship capstone project that creates affordable STEAM (Science, Technology, Engineering, the Arts, Mathematics) education products for children aged 9 to 14. Designed for self-driven learning at home, Stick 'Em offers hardware robotics kits that are 10 times more affordable than existing STEAM kits on the market, while its online platform, Stick 'Em Dojo at dojo.stickem.sg engages children with fun and exciting STEAM projects.

CSD

Jiang Hong Bei
Peh Yu Xiang
Sean Chen Zhi En

EPD

Huh Dam Adam
Benjamin Goh Weijun
Ian Ng Zhi Yang

58 Bubbles By The Bay

Our proposal reimagines the future of Esplanade - Theatres on the Bay, by building upon its existing identity and introducing innovative new features and spaces. Inspired by the fluid and dynamic nature of bubbles, the concept embodies openness, connectivity, and inclusivity. Organic architectural forms create a seamless transition between the current and new structures within the Esplanade site. With a focus on functionality, accessibility, and sustainability, the space features state-of-the-art black box theatre and studio spaces, alongside vibrant community areas designed for public engagement, education, and artistic exchange. Thoughtfully integrated indoor and outdoor green spaces further enhance Esplanade's transformation into a fully connected, future-facing arts hub.

ASD

Chng Say Joo, Joel
Mu Yan Ci Shirley
Hnin Myat Eindray Oo

CSD

Jaden Tay Jingyan

ESD

Luo Yingrou
Jonathan Davinius Layardi

59 Autonomous Tethered UGV-UAV System for Safer Aerodrome Inspections

An autonomous Unmanned Ground Vehicle (UGV) with a tethered Unmanned Aerial Vehicle (UAV) that enables safe operation in restricted no-fly zones. Designed primarily for aerodrome runway inspections, this system enhances inspection accuracy and speed while reducing the workload of maintenance and inspection personnel. Beyond aerodromes, this system can be adapted for various applications, including warehouse or building facade inspections. It can also be integrated with flight management platforms, enabling users to plan and track their operations.

CSD

Joel Sng Kiat Loong

EPD

Jarell Lim En Yu
Yeo Sze Yin
Gan Zhi Hong
Foo Toon Kai
Ang Wee Kiat Darren

60 Car Clearance Kiosk

Our advanced and automated system revolutionises car immigration checkpoints by enhancing user experience, minimising human dependency, and expediting clearance. Designed to enhance user experience and automate processes, our multi-featured solution ensures a seamless, efficient, and hassle-free journey for travellers. By streamlining processes and leveraging automation, we optimise checkpoint operations for faster and more reliable border crossings.

ASD

Justine Camille Aguilar Villarama
James Tan Shi An

CSD

Yash Yadav
Ong Jun Bin
Mehta Yash Piyush

EPD

Zhang Haotian
Lee Shu Min, Kimberly

61 cAIRE @ Cool Stuff 4 Hot People

An innovative water-evaporative air cooler designed to operate in the sunny and humid climate of Singapore, while also being affordable, modular, and convenient to use.

DAI

Rio Chan Yu Hoe

EPD

Tan Kiat Ee Gareth
Keiron Wong Tjeng Wai
Wong Hong Xuan, Shaine

ESD

Tong Zhen Chung Samuel

62 IoT-Enabled Gait Monitoring System

Global warming affects all countries, including Singapore, and increases the risk of workplace heat injuries. This project involves developing a compact device with an Inertial Measurement Unit (IMU), which can transmit data via Bluetooth to a mobile app. The app syncs with a cloud-based dashboard for real-time monitoring of workers' gait, enabling managers to detect abnormal patterns early. The aim is to create a cost-effective solution that improves worker safety.

CSD

Ivorine
Fathu Rohman Shah Bin Harun

EPD

Muhamad Aish Bin Sabaruddin
Michelle Angela Widjaja

ESD

Chua Cheng En Alex
Pavai D/O Karnan

63 CrossTalk Secure

CrossTalk Secure is a compact, portable offline speech-to-speech translation device designed to deliver accurate, low-latency translations while ensuring user privacy and security. Tailored for security personnel operating in Southeast Asia, it facilitates seamless and secure communication with foreigners, helping to overcome language barriers in an interconnected world where tourism is on the rise.

ASD

Yeo Jing Zhe (Yang Jingzhe)

CSD

Low Wei Kang, Keith
Luv Singhal

EPD

Abby Wong Yik Yung
Joel Luke Tan Yi

ESD

Caitlin Wong Yu-Lin

64 mirror: see the one who sees you

Mirror reimagines online matchmaking by moving beyond superficial swiping and biased algorithms. Through AI-driven conversations, Saa, our chatbot, builds detailed personality profiles, while Cupid, our adaptive algorithm, refines matches for deeper compatibility. By eliminating choice paralysis and algorithmic bias, Mirror fosters genuine connections, making online dating more meaningful, rewarding, and intuitive for users seeking authentic, long-term relationships.

CSD

Benetta Cheng Jia Wen
Dinh Thao Vy
Leemah Bisht
Michelle Chrisalyn Djunaidi
Tran Cong Nam Anh (Louis)

ESD

Maitri Srivastava

65 I Learn

I Learn coding app is a mobile app designed to make coding education engaging and accessible for undergraduates. By focusing on visualisation and interactive learning, the app offers an immersive educational experience tailored to academic and career needs. Inspired by successful platforms like Duolingo and MIMO, I Learn provides interactive coding challenges, visual aids, and progress tracking to motivate learners. This platform empowers students to enhance their coding skills through hands-on interaction and visual learning, fostering both academic success and career readiness.

ASD

Tan Shi Jie, Ariel

CSD

Liu Yu
Jianyu Zhang
Wang Yongjie

DAI

He Tianli

ESD

Hannah Eva Jacob

66 EZCarbon

EZCarbon is an intuitive tool that helps designers and sustainability professionals efficiently calculate embodied carbon during the early design stages. It seamlessly integrates existing visual design workflows, as well as provides clear, actionable insights and recommendations to support informed material selection. By simplifying carbon assessments, EZCarbon empowers professionals to create a more sustainable design.

ASD

Wong Eng Zheng

CSD

Isaac Koh

Sean Phay

Valerie Lim Chien Ru

ESD

Afiq Bin Zulfa

Chua Jin Chou

67 Ulmagine

Ulmagine is an AI-powered, prompt-first website builder that enables anyone to create a fully functional website by simply describing it in plain English. It eliminates complexity, delivering a ready-to-deploy website in under three minutes. Whether for portfolios, restaurants, or businesses, Ulmagine automates the process, making website creation effortless and accessible to everyone.

CSD

Vincentius Roger Kuswara

Mohammed Ansar Ahmed

Nathan Aldrich W

Tay Jia Jiun Joshua

ESD

Bryan Aurelius Tanaja

68 Enriching Active Ageing: Empowering Seniors

A future-ready centre that transforms ageing spaces with adaptable design and smart storage, optimising space for social engagement and holistic well-being. Aligned with the World Health Organization's successful ageing framework, it fosters mental, physical, and emotional growth in a welcoming and home-like environment.

ASD

Zahira Shofwatunnisa

Tan Jia Yue

Jeremy Yeh Bo Hsien

Ili Syazana Binte Yusri

CSD

Nada Khan Suratee Binte

Abdul Rahim Khan Suratee

EPD

Eaint Nandi Win Naung

Kewalin Lerdprapapong

72 RAPID SHIELD

RAPID SHIELD is a rapidly deployable chemical shelter designed to protect civilians from hazardous chemical plumes at off-the-grid locations. Designed using frugal innovation, the shelter features cloud-integrated remote deployment and monitoring. It ensures user-intuitive set-up and transportability for pre-emptive emergency response.

CSD

Tan Guan Hong Timothy

Vidhi Mahajan

EPD

Rickston Tan Qi Xuan

Michelle Ong

Prateeti Jena

Wong Jae Hann

73 AI AUGMENTED FLIGHT ROUTE PLANNING

This project explores the potential of reinforcement learning (RL) to enhance Intelligence, Surveillance, and Reconnaissance (ISR) capabilities. Using a simulated urban environment, we examine how AI-driven drones autonomously track moving targets while navigating obstacles. By leveraging spatial mapping, real-time obstacle avoidance, and target re-acquisition, our open-source research provides insights into RL-driven drone tracking while delivering a functional, flexible, and customisable RL platform for future ISR applications.

CSD

Kum Yu Rong
Chen Yu Tung
Edwin Wongso
Lim Hsien Hong Sean
Wongsaphat Pipatsawettanan

ESD

Siew Yik Fong
Tristan Million Chia Wee Hng

74 Puffin — Your Partner in Asthma Wellness

Puffin is a smart inhaler casing and app that will track the adherence rate of asthma patients to their prescribed Metered Dose Inhaler (MDI) medication regimen. The smart inhaler casing collects relevant information when dosages are taken from the MDI and sends it to the app via Bluetooth. Thereafter, the app stores the information and generates a report with adherence rate statistics, which clinicians can utilise to help patients with their asthma management plans.

CSD

Josephine Tan Xin Yi

DAI

Brian Lim Yong Jeng

EPD

Eugene Ee Jun You
Tan Jian Qing
Lee Kang Yi Augustine
Jonathan Loi Wee Kiat
He Zhihan

75 Volatix

Volatix is an AI-driven platform designed to help financial analysts stay ahead of market volatility. By leveraging financial metrics, news sentiment analysis, and option pricing data, it applies machine learning to predict future market fluctuations. With a focus on transparency and trust, Volatix provides intelligent, data-driven insights to help analysts navigate increasingly chaotic markets with confidence.

CSD

Chan Wei Jian Ivan

DAI

Timothy Wee Hong En

ESD

Kwa Yu Liang
Loy Xing Jun
Jaslyn Yee Jiawei
Terry Yeo Teck Meng

76 Defarm — Decentralised Farming

DeFarm is an innovative farming solution that integrates automated hydroponic technology with on-demand harvesting. By growing, maintaining, and harvesting crops directly within the vending machine, DeFarm delivers fresh, pesticide-free vegetables without the inefficiencies of traditional supply chains. This innovative approach minimises retail waste, cuts logistics costs, and makes locally-grown produce price-competitive with imports.

CSD

Tang Heng

EPD

Uh Yun Ning
Koay Chong Hau
Liau Xuan Xuan Valerie
Nicholas Ng Zhi Yong
Keith Lee Zhengxian

77 Arborarm

Arborarm is a drone designed with modular attachments for the purpose of retrieving items trapped in tree canopies safely. By integrating advanced technology with human control, the drone replaces the conventional method of having workers climb trees or deploying mobile cranes to retrieve such items. The drone therefore reduces manual intervention and its associated risks, making it a safer, more efficient, and cost-effective retrieval solution.

CSD

Ruan Yang
Shivani Mariappan
Han Jin

DAI

Tan Zi Hui
Tunrag Dewan

EPD

Muhammad Danial Bin Kamalrudin
Syarifuddin Azhar Bin Rosli

78 Graph-based Agentic Retrieval (GAR)

A system that combines Retrieval Augmented Generation with ReACT agent properties to enhance the performance of language models. This system reduces hallucinations commonly found in traditional LLMs by grounding responses in real-world knowledge, while also mimicking human-like problem-solving abilities. The integration aims to improve accuracy and reliability in generating responses.

CSD

Loy Pek Yong
Aravind Gopinath Nair
Sim Reynard Simano
Lim Yongqing

ESD

Langarkande Rishita Sanjeev

79 eledeck

eledeck is an AI-powered revision platform designed to optimise learning efficiency using scientifically-backed study methods. By generating personalised flashcards, adaptive revision schedules, and progress analytics, eledeck helps students study smarter, not harder. Tailored to individual learning styles, it enhances retention and maximises exam performance — ensuring students achieve their academic goals effectively.

CSD

Ng Zheng Wei
Alestier Kwa Yu Feng
Lee Darren
Muthuvel Vimal
Varun Teja Bondugula

EPD

Mateo Jalen Andrew Calderon

ESD

Vivek Thomas

80 PROSPERO

PROSPERO is an integrated hardware-software system designed for law enforcement agencies to aid in credibility assessment during investigative interviews. A suite of discreet, non-invasive sensors captures facial expressions and vocal patterns, which are then streamed in real time and recorded for post-mortem analysis. The system provides investigators with insights into levels of truthfulness and potential signs of deception, thereby enhancing the efficiency and accuracy of investigations.

CSD

Lim Fuo En
Lim Rui-Chong Anthony
Charlotte Ng Si Min
Issac Jose Ignatius
Yong Zheng Yew

EPD

Jarrold Lim
Moey Wan Wei, Adric

81 SKH Improvement Deployment Framework

Ensuring cleanliness and sanitation in healthcare facilities is critical yet challenging due to resource constraints and diverse cleaning tasks. This project develops a task tracking app that collects data on cleaning services as well as analyses manpower and time allocation to support informed decision-making, resulting in a more realistic daily workflow. By ranking housekeepers based on their productivity, the app enhances resource allocation, enables dynamic staff assignments, and improves overall workforce management as well as operational effectiveness.

CSD

Advaitaa Kathavarayan
Han Chewon
John-David Tan Ming Sheng

EPD

Leow Jing Ting
Tan Jie Ni, Ashley

82 NewNails

NewNails is an entrepreneurship capstone project that leverages 3D scanning and stereolithography resin printing to create custom-fit press-on nails. Addressing challenges such as poor fit, long salon waiting times, and high customisation costs, our solution offers a precise, efficient, and scalable alternative to both individual consumers and nail businesses. NewNails aims to redefine the press-on nail industry through innovation and technology.

ASD

Zhang Xin
Li Junyi
Yuan Yihang

CSD

Rachel Leow Si Min
Lynette Chia Sze Min

EPD

Li Kunpeng

ESD

Qian Hele

LIST OF BABY SHARK FUND PROJECTS & START-UP

11 NexSwap

NexSwap is a technology-driven networking solution designed to address the challenges faced at MICE events in Singapore, where over one-third of up to 35,000 attendees struggle to make meaningful connections. Founded by a team of three students from the Singapore University of Technology and Design (SUTD) and one from the National University of Singapore (NUS), NexSwap combines proximity-based artificial intelligence (AI) matching with NFC technology, providing a modern alternative to traditional networking apps.

CSD

Ye Ye Taut

EPD

Gavin Tan

ESD

Dylan Gan

12 ObstaX

ObstaX is an AI-powered assistive technology designed to help blind and visually impaired (BVI) individuals navigate indoor spaces safely and independently. Many BVIs face challenges with mobility. They often have to rely on others while navigating in unfamiliar environments, and interacting with objects. Safety is also a major concern, as obstacles, unclear signage, and inaccessible interfaces can make it difficult for BVIs to move with confidence. Existing solutions, such as handheld navigation apps, require manual input and pre-set routes. They also lack real-time guidance. ObstaX addresses these challenges with a hands-free, AI-powered system that integrates GPT-4, stereo cameras, and Wi-Fi connectivity to offer real-time navigation and sign recognition. Its non-medical and discreet design empowers BVIs to interact with their surroundings more confidently while promoting greater societal inclusion and accessibility.

CSD

Lam Yu En

EPD

Koay Chong Hau

16 EKCO

EKCO addresses the high cost and complexity of electric vehicle (EV) conversions for classic cars, a barrier faced by many enthusiasts despite growing interest in sustainable motoring. Existing solutions are expensive, time-consuming and require specialised installers, making them inaccessible to most classic car owners. EKCO offers a cost-effective, pre-assembled EV conversion kit designed for easy installation by novice mechanics and even DIY enthusiasts. Its drop-in design simplifies the conversion process, reduces turnaround time and lowers overall costs. By enabling sustainable retrofits, EKCO helps preserve classic cars while supporting the global shift to cleaner transport.

DAI

Rebecca Tan

EPD

Hui Wan Sheng

MIBD

Tan Lu Han

84 Greenairy

Greenairy addresses indoor air pollution, a major health risk highlighted by the World Health Organization. Traditional air purifiers often fail to remove toxic gases, rely on disposable filters, and may produce harmful by-products. In contrast, Greenairy's plant-based system leverages advanced phytoremediation and IoT technology to purify the air up to 100 times faster, without generating waste or emissions. Its smart plant towers also foster sustainability education by allowing users to grow microgreens while engaging with interactive, gamified learning tools. This solution not only improves air quality but also promotes environmental awareness in offices and schools.

EPD**Lakshya Saraf**

Tanvir Thombre

85 PitchMe

PitchMe is an AI-powered presentation training platform designed to help students become confident and effective communicators. Using real-time video analysis, PitchMe provides personalised feedback on key presentation skills including body language, vocal delivery, facial expressions, and pacing. By turning presentations into a trainable skill, PitchMe empowers students to improve with every attempt, whether for classroom assessments, or future job interviews. PitchMe aims to make public speaking less intimidating and more accessible to every learner.

CSD

Kishen D

FRESHMORE

Cha Zhi Feng

Rachel Tan

86 Zennah

Zennah is a 3D GenAI-powered platform that is revolutionising personalised jewellery shopping. Traditional options are often expensive, slow, and lack true customisation, preventing customers from fully expressing their unique identities. Zennah addresses this by offering affordable, AI-driven customisation, real-time 3D visualisation, and efficient direct-to-manufacturing solution. This enables individuals to effortlessly create one-of-a-kind designs while promoting sustainability and reducing waste.

FRESHMORE

Manav Viren Amrutiya

MIBD

Harjeeth Senthill

87 Aircraft AI

Aircraft AI is a solution designed to enhance the efficiency of aircraft Maintenance, Repair and Overhaul (MRO) by automating surface inspections using advanced object detection algorithms. Traditional inspection methods are labour-intensive and time-consuming, typically requiring over 15 licensed engineers and more than eight hours per aircraft. Aircraft AI reduces both manpower and inspection time through AI-driven defect detection. By leveraging deep learning models and Vision Transformers, the system automates the detection of defects, including cracks, corrosion, dents, and loose fasteners, from high-resolution images captured via drones, robotic systems, or handheld cameras.

CSD

Christian Kurniawan
Malvin Ken

ESD

Jetanat Datephanyawat
Jordan Tay

88 Adaptive_

Adaptive_ addresses the critical issue of data privacy when using large language models (LLMs) like ChatGPT. While cloud-based LLMs offer convenience and capability, they present significant risks for organisations that handle sensitive data such as law firms, banks, and healthcare institutions. These risks include data transmission interception, privacy law violation, and the inability to delete specific user inputs. Adaptive_ therefore provides a secure, on-premise alternative, enabling high-performance AI deployment without compromising confidentiality. By combining open-source AI models, cost-effective local computing and workflow-specific customisation, Adaptive_ delivers the power of LLMs in a secure, private environment designed for high-stakes corporate use.

CSD

Bao Long Tran Nguyen

DAI

Timothy Wee

83 Cartograph

Cartograph is an AI-powered code documentation platform for software teams. It helps software engineers save up to 90% of their time when maintaining technical documentation, by automatically generating explanations, architecture diagrams and sequence flows. It does this by combining static code analysis with AI and visualising the results using interactive diagrams.

ISTD

Vivek Kalyan (Class of 2018)
Teo Si-Yan (Class of 2018)

LIST OF EPD PROJECTS

13 Oxytrolley

The Oxytrolley is an ergonomically designed, multi-terrain mobility trolley empowering oxygen-dependent individuals to move freely and confidently. Its multi-directional wheels and secure tank holder offer effortless manoeuvrability, eliminating the stigma, risks, and inconvenience of traditional mobility aids devices.

EPD

Teo Keng Wee, Skyler
Yeo Sze Yin
Doni Kurniawanto
Mendy Chen
Anna Juth

14 Voller

Voller is a modular, wrist-mounted multi-tool designed for efficiency and ease of use. It integrates a tape dispenser, a wrench, a pair of pliers, a measuring tool, and a screwdriver into a compact, wearable device. Its ergonomic design provides a comfortable grip, allowing the tools to seamlessly transition from the back of the hand to the palm for quick access. With its modular design, users can swap tools as needed, making Voller a versatile solution for a variety of tasks. Voller streamlines workflow by keeping essential tools within reach, eliminating the need to carry multiple standalone tools.

DAI

Soh Ying Yu
Charlene Teo En
Yang Ziyi
Lim Kai En Christopher

15 Solace

Compression stockings are designed to improve blood circulation, but they can often be challenging to wear. Developed in collaboration with Sengkang General Hospital, Solace is the first-of-its-kind lace compression stocking to feature a lace-up design with a simple tightening mechanism, making it easier to put on while ensuring optimal support. A built-in pressure feedback system with LED indicators ensures that the correct compression is applied. Made from a comfortable and durable cotton-spandex blend, Solace offers effective support without compromising on comfort. With its quick and easy wearability, Solace reduces donning time to under five minutes, providing a practical and user-friendly solution for daily compression therapy.

EPD

Ashley Tan Jie Ni
John Tan Zhi Qian
Tan Yu Quan
Thang Li Wen Elena
Vitalii Kataev
Eugene Ee Jun You

69 P.A.T.R.I.C.K.

The Personal Autonomous Technology for Remote Intelligent Care and Kinetics (PATRICK) is an artificial intelligence (AI)-powered robotic companion designed to deliver value-based healthcare for seniors in the Silver Generation through health monitoring and emergency response. PATRICK enables non-contact monitoring of vital signs using 60 GHz electromagnetic sensors for continuous heart rate and breathing analysis. Its AI-driven fall detection system employs computer vision and velocity analysis to minimise false alarms and trigger emergency alerts for immediate caregiver response. By providing real-time health insights, PATRICK supports preventive care, reduces hospitalisations, and aligns with the principles of value-based healthcare.

EPD

Athirah Nurunnisa Binte Mohamad Redwan
Chia Kai Xun Bryan
Joshua Choy Weng Yew
Lim Yee Kiat
Mervyn Wong Ju-Liang
Timothy Isaac Chua

70 Best In Vest

Best In Vest (BIV) is a prototype designed to assist teenagers with Attention Deficit Hyperactivity Disorder (ADHD) manage their symptoms by providing them sensory feedback. It features an accelerometer that tracks movements, a heart rate variability sensor that monitors physiological responses, and a haptic motor that delivers tactile feedback through vibrations. BIV is powered by a battery pack and controlled by a central unit, with components secured using Velcro patches. By offering feedback based on a user's activity and physiological data, BIV aims to help the user stay focused and calm in various scenarios.

EPD

Cheyenne Chua Yan Ting
Ho Wei Rui
Lim Chun Yong Samuel
Ng Wan Hao, Royce
Phua Wei En
Thakur Ukarsh Abhijit

71 Warning On Wall (W.O.W.)

Falls are a significant safety concern in hospitals, often leading to injuries and fractures among patients. Although nurses are responsible for assisting patients who wish to get out of bed, staff shortage and increased demand for help during the night often leave patients attempting to get out of bed on their own, significantly increasing the risk of falls. To address this issue, we have designed a robotic wall art installation that functions both as an aesthetic display and a safety measure. When a fall-risk patient attempts to leave the bed, a hidden mechanism is activated to distract and delay the patient for at least five seconds, allowing time for a nurse to arrive and assist.

EPD

Syarifuddin Azhar Bin Rosli
Thang Li Wen, Elena
Soh Zhi Ying
Mohd Al-Ahda



SINGAPORE UNIVERSITY OF
TECHNOLOGY AND DESIGN

TRAILBLAZING A BETTER WORLD BY DESIGN.