INSPIRECON 2026

SUPERCHARGED BY Design · AI

DATE | TIME

17 APRIL: 12PM - 5PM

18 APRIL: 10AM - 3PM

OPEN TO PUBLIC | FREE ADMISSION

LOCATION

CAMPUS CENTRE, LEVEL 1

SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN
8 SOMAPAH ROAD, SINGAPORE 487372

PROGRAMME

17 APRIL, FRIDAY

12.00PM	DAY 1 SHOWCASE BEGINS
3.00PM	ARRIVAL OF GUEST OF HONOUR, MR DAVID NEO, ACTING MINISTER FOR CULTURE, COMMUNITY AND YOUTH AND SENIOR MINISTER OF STATE FOR EDUCATION
3.05PM	WELCOME ADDRESS
3.10PM	SPEECH BY SMS DAVID NEO
3.15PM	LAUNCH OF DIVE
3.30PM	AWARDS CEREMONY
3.40PM	VIEWING OF SHOWCASES
5.00PM	END OF DAY 1 SHOWCASE

18 APRIL, SATURDAY

10.00AM	DAY 2 SHOWCASE BEGINS
3.00PM	END OF DAY 2 SHOWCASE

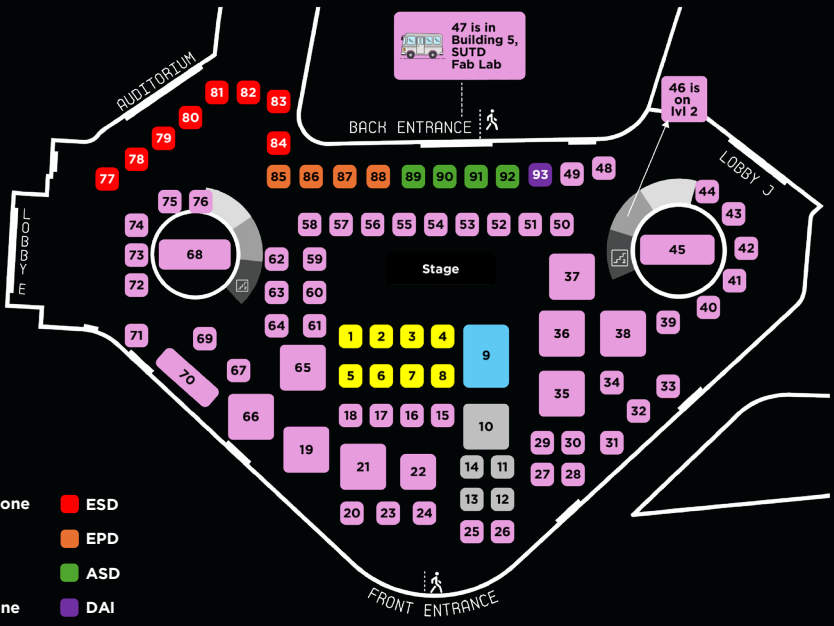
TRAILBLAZING A BETTER WORLD BY DESIGN.

SUTD
SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Projects at

SUTD Campus Centre

LEVEL 1



Design · AI INNOVATION AND VENTURE EXPLORATION (DIVE) ZONE

1 Global Innovation Internships (GII)
1 Innovation Maker Breaker Space (IMBS)
2 Neural Drive
3 DAIdalus
4 Sensing U The Destination
5 NUTD
6 LeafMeBe
7 REMNIX
8 Flaire
8 Sunday

PHYSICAL AI (PAI) PROJECTS

9 Dragonfly
9 Osprey

FUTURE OF INNOVATION (FOI) PROJECTS

BY Design · AI FAB LAB / BUILDING 0 STUDENTS

10 AlmondMCP: AI-Assisted Spatial Prototyping and World Generation
11 Wallee — Physical AI for Any Machine
12 SUTD Atlas
13 LearnLoop
14 TextForm

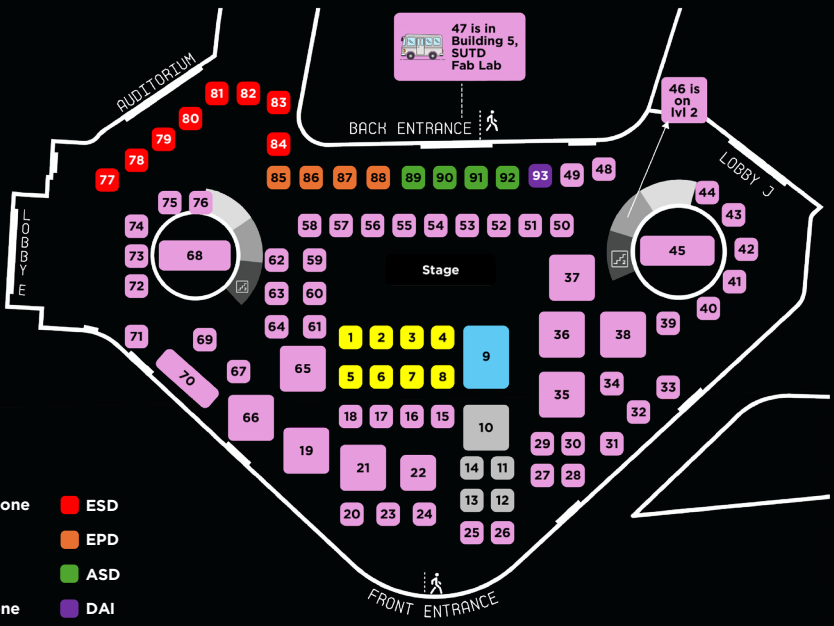
CAPSTONE PROJECTS

15 TANGLED SOCIAL
16 A.Sort
17 ReelFocus
18 CENTRALISED DASHBOARD
19 Salamander
20 JourniAble
21 Safe Paths for All
22 Athanor
23 Edvance
24 Oral Device Prototype for Dry Mouth Management
25 Agent Watson
26 Glass Sync
27 PerceptIQ
28 PLAYMORE — Experience Technology
29 Smart Home Device for Quality Milk Beverage
30 SHOPSAGE
31 Ventara
32 qage.dev
33 VizTwin
34 ForenSIX — AI-powered Misinformation Detection
35 CoPilot
36 B.HIVE (Baggage Handling Intelligent Vehicle Ecosystem)
37 BOB the Pod
38 Autonomous Wall Sanding Robot
39 Automated Road Inspection and Analysis (ARIA)
40 Doby
41 PulseSense
42 SafeSight
43 AI Medical Image Segmentation Tool & Adjustable Prostate Phantom
44 MicroKiap
45 Autonomous Robot for Transporting Equipment (ARTE)
46 VRnture — A New Dimension for Healing (Campus Centre Level 2)
47 Project Icarus
48 NutriFusion
49 DeltaCare360
50 AI4PDPA
51 Game On!
52 Sustainability Intelligence Platform
53 Culinexus
54 INFIBOT
55 PactPro
56 CC+
57 DUBY (Duty Buddy): An intelligent staff rostering system for healthcare
58 Trade surveillance
59 Financial Needs Calculator
60 INTELLIPAL
61 Novel Navigated Knee Osteotomy System for Lower Limb Deformity Correction

Projects at

SUTD Campus Centre

LEVEL 1



62 MERAS
63 CarbonX
64 Digital Elevation: Revolutionising Sales & Marketing with Web App Innovation
65 PalletProof
66 ShowerSense
67 Adaptive robotics system
68 NuPoint
69 CyberXercise
70 ESS-SUTD FCS: Flight Controller for Rocketry
71 CRUMS
72 EvoFlow
73 Plastoform
74 10TICKLES
75 CrackDect
76 Designing a Calm Space at Esplanade — Theatres on the Bay

ENGINEERING SYSTEMS AND DESIGN (ESD) PROJECTS

77 Agent-Based Simulation of Singapore's MRT System
78 Modelling Visitor Behaviour in Theme Parks Using Discrete Event Simulation
79 Automated Technical Query Answering Using Retrieval-Augmented Chatbot
80 Data Classification for Improved Cost Analysis
81 Automation and Remodelling of CGH Workload Statistics Report
82 Predictive Maintenance of Rail Equipment
83 Charging Ahead: Understanding EV Adoption Through Agent-Based Simulation
84 S.M.O.K.E.R. — Smoking Mitigation Outreach for Knowledge and Education Research

ENGINEERING PRODUCT DEVELOPMENT (EPD) PROJECTS

85 Adam & Eve — Firefighter Thermal Heads-Up Display (HUD)
86 How to Train Your Knee (HTTYK)
87 PostureFlow
88 N3ST

ARCHITECTURE AND SUSTAINABLE DESIGN (ASD) PROJECTS

89 PlayWeb
90 KindredGarden House
91 Project LiSA
92 DeReX

DESIGN AND ARTIFICIAL INTELLIGENCE (DAI) PROJECT

93 Smarter LNG Bunkering with Intelligent Data Analytics & Simulation (SIMULYNX)

DIVE (Design · AI INNOVATION AND VENTURE EXPLORATION)

DIVE is a platform for Design · AI Innovation and Venture Exploration. It runs alongside academic life, giving students the space to explore, the structure to build and the support to lead. It nurtures the ability to dream boldly, act ethically, communicate clearly and tell stories that move people. It's not a programme. It's a platform that puts knowledge into motion, cultivates an entrepreneurial mindset, and prepares students to create what doesn't yet exist and bring it into the world to make a meaningful impact.

Every SUTD student is trained to be a builder and innovator. DIVE is how students grow as whole individuals, and bring their ideas, ventures and values into the world. Through DIVE, students will be encouraged to innovate in tandem with industry partners. They will begin by understanding their entrepreneurial profiles and learning how entrepreneurs think — identifying opportunities, conducting market research and building towards product-market fit.

DIVE represents a shift in mindset about what university education should prepare students for. Through it, students will steer away from viewing the university as a place to study, graduate and then look for a job. Instead, they will learn to envision themselves as creators, innovators and founders.

DIVE ZONE

1 Global Innovation Internships (GII)

ESD
Yeo Yu Siang

Global Innovation Internships (GII) place SUTD students in the heart of innovation, outside their comfort zone: start-ups, research labs, social ventures, and global companies, where they work on challenges that matter. Each opportunity is curated to ensure relevance and impact across industries and geographies, and is essential for those who want to be start-up founders or creators of new ventures.

1 Innovation Maker Breaker Space (IMBS)

FRESHMORE
Dillon Zhao

Nestled within the DIVE Residential College is the Innovation Maker Breaker Space (IMBS), a dedicated maker space where students turn ideas into tangible creations. Students work on prototypes to passion projects within this hands-on space designed to spark creativity and experimentation. Students also dismantle everyday electronics, from routers to circuit boards, learning through deconstruction what no textbook can teach. Witness what our students have been experimenting with — from avionics and robotics to audio engineering and hardware design.

2 Neural Drive

FRESHMORE
Khambhati Mohammed Huzefa

Neural Drive is an artificial intelligence (AI)-powered wearable that reads brainwaves and neural biosignals, enabling paralysed individuals to communicate and control their surroundings, while integrating with existing workflows in hospitals, nursing homes, and hospices.

3 DAIdalus

FRESHMORE
Calvin Ng
Tristan Fong

DAIdalus is an AI-powered video production wingman designed to integrate seamlessly into industry-standard workflows. It turns natural language into instant edits, eliminating time-draining tasks and enabling creators to work faster, push creative boundaries, and stay fully in control of their craft.

4 Sensing U The Destination

Sensing U The Destination is a multi-sensory navigation experience that makes getting around a compound intuitive and engaging. It uses proximity-based ambient sounds that shift as users move through different areas, and allows users to shake their device to pinpoint their location based on signal strength. By turning everyday wayfinding into a hands-on experience, it creates a more interactive and enjoyable journey.

CSD
Ng Wen Yin
Zhang Xirui Asher

EPD
He Kaiyuan

5 NUTD

NUTD is a tension-based, expandable shelter system designed for emergency situations. Using a simple expand-and-seal mechanism, it enables households and first responders to set up an airtight containment space in under a minute, making rapid and reliable shelter accessible to anyone, anywhere.

FRESHMORE
A Puvanan
Aaron Ben Daniel
Daryl Loy Jun Jie
Lin Yi En

6 LeafMeBe

LeafMeBe is a decorative, self-watering plant care system that harvests moisture from the air. Its dual-purpose dehumidifier and irrigation system pair with a companion app, giving users control over water dispensing and the ability to monitor watering frequency and usage — making plant care effortless for busy homeowners and first-time plant parents.

CSD
Jovyan

EPD
Clarence Yeo
Elisha Tan
Jaryl Chan
Maryann Lim

7 REMNIX

REMNIX is a dynamic puzzle system that makes reminiscence therapy interactive, guided, and effortless. Smart cubes with embedded displays light up and connect in real time to recreate personal memories, while AI-powered content generation brings even faded photographs to life. A simple caregiver interface requires no technical knowledge, enabling sessions to begin within seconds and helping to deepen the emotional bond between caregivers and their loved ones.

EPD
Lee Seulgi
Wang Minxing
Wong Zheng Hui

ESD
Hrehaan Jaya Zafar
Priyanga Elango

8 Flaire

Flaire is a centralised autoimmune health management platform that simplifies daily tracking and reduces cognitive load for people managing chronic conditions. By combining low-effort health logging with AI-driven pattern recognition and trigger identification, it enables users to take control of their health while giving medical professionals access to more accurate patient histories.

FRESHMORE
Harshita Bhatia
Juhi Ghosh
Sanyukktha Saravanan
Tejaaswin Vaidheeswaran
Tissya Satyen Lulla

8 Sunday

Sunday is an accessibility-first voice assistant that enables people with visual or motor impairments to control any app on their phone hands-free, using natural speech. With 90% of apps failing accessibility standards and one in three blind users relying on others for basic phone tasks, Sunday addresses this gap by doing more than conventional screen readers. Rather than simply describing the screen, it can tap, type, scroll, and complete multi-step tasks across any app, with real-time narration to keep users informed, and built-in safety confirmations to ensure that no critical actions are taken without consent.

FRESHMORE
R Pravin
Rajaselvam
Senthilkumar Kunalkumar

PHYSICAL AI

Physical AI is the integration of advanced artificial intelligence and hardware enabling machines to perceive unstructured real-world inputs, reason about context, and take physical actions in real-time without requiring human intervention at the decision level. It handles unexpected variability in objects, conditions and unscripted scenarios without reprogramming or retraining.

Unlike generative AI, Physical AI operates in and acts upon the physical world, not just digital space.

LIST OF PARTNERS

COSEM Singapore

Kim Yew Integrated Pte. Ltd.

National Environment Agency (NEA)

National Robotics Programme

LIST OF PROJECTS

9 Dragonfly

Dragonfly is an autonomous ground robot for mosquito surveillance and control in large outdoor environments. It navigates spaces such as parks and campuses, using ultraviolet light, carbon dioxide and chemical attractants to lure mosquitoes into an onboard trapping chamber. Equipped with vision and AI, it detects and classifies captured species while generating spatial maps of mosquito populations. Leveraging Physical AI capabilities, it autonomously navigates, senses and adapts its behaviour in real time to optimise coverage and trapping efficiency, outperforming traditional static traps. Dragonfly has since been commercialised and deployed by facilities management company Kim Yew Integrated.

Research Associate, EPD
Koppaka Ganesh Sai Apuroop

PhD Student, EPD
R Singaram
Ruihe Cai

9 Osprey

Osprey is an autonomous decontamination robot designed to safely and efficiently disinfect high-risk environments. Equipped with advanced navigation and sanitisation technologies, it operates in complex indoor and outdoor spaces while minimising human exposure to hazardous substances. Leveraging Physical AI, Osprey can perceive, adapt and act intelligently within dynamic environments to optimise its cleaning performance. It enhances precision, consistency and coverage, making it well suited for healthcare, public and industrial settings.

Research Assistant, EPD
Aung Kyaw Zin

Research Associate, EPD
Eduardo Sanchez Cruz

Senior Research Assistant, EPD
M Shameer Ahamed

FUTURE OF INNOVATION

The Future of Innovation, anchored in Design · AI, brings together human-centred design and AI, shaping how humans work and design with AI as a tool, a teammate or neither. Innovation becomes a co-creative process between humans and AI, unlocking new ways to solve complex, real-world challenges and realise human potential.

At SUTD, this comes to life through the Design · AI Fab Lab, affectionately known by students as Building 0, a hub for experimentation, rapid prototyping and deploying Design · AI solutions. The projects on display here are a testament to what becomes possible when curiosity meets capability.

This vision extends beyond the campus and into industry. Through a series of strategy case studies developed with SGTech and SkillsFuture Singapore (SSG), SUTD has partnered organisations of every scale, from MNCs like Surbana Jurong and local institutions like Gardens by the Bay, to homegrown small and medium enterprises (SMEs), as they navigate their own AI transformation. Productivity rose, AI literacy improved and design capabilities strengthened. Confidence, creative self-efficacy and proficiency grew in tandem. Compared to published overseas research evidence, SUTD's Design · AI outcomes are at least 30% more effective, giving their workforces an edge in an uncertain world.

Crucially, these industry partners worked alongside SUTD to ensure humans remain at the centre of it all. In a future where only some answers are known, SUTD works side-by-side with industry to navigate uncertainty, find answers and ask new questions — helping organisations stay competitive so they can invest in people and create jobs.

LIST OF PROJECTS

10 AlmondMCP: AI-Assisted Spatial Prototyping and World Generation

ASD
Chen Liang Jung

As architectural projects grow in complexity, early-stage design is often slow, fragmented, and difficult to communicate. AlmondMCP integrates AI-assisted modelling, spatial reasoning, and physics-informed design to generate coherent architectural concepts more efficiently. Initially developed through exploratory work with Surbana Jurong, it also enables AI-driven world generation and immersive environments for prototyping, testing, and communicating spatial ideas.

11 Wallee — Physical AI for Any Machine

EPD
Anieyrudh R
Puah Joon Leng

Most physical AI systems today are tightly coupled to specific hardware and rely on large, highly specialised models for safe operation. Wallee takes a different approach. Instead of retraining intelligence for each machine, it uses frontier language models for reasoning, supported by a deterministic safety architecture that validates every action before execution. With independent monitoring and lightweight deployment on devices such as a Raspberry Pi, Wallee enables safe, adaptable control across machines ranging from desktop tools to industrial systems.

12 SUTD Atlas

EPD
Anieyrudh R
Puah Joon Leng

During each student exchange cycle, students spend hours piecing together course mappings from scattered spreadsheets and past records, while pillar administrators manually review requests across partner universities. SUTD Atlas streamlines this process through an AI-powered platform that pre-computes course equivalency analyses and surfaces structured recommendations with clear reasoning. It reduces repetitive comparison work for administrators and replaces outdated documents with a searchable system that makes exchange planning faster, clearer, and more transparent for students.

13 LearnLoop

FRESHMORE
Abhishek Vulla

In most classrooms, feedback moves too slowly. Students often only realise misunderstandings long after they occur, while instructors have limited visibility into where a cohort is struggling until it is too late to respond. LearnLoop compresses this cycle from weeks to minutes through an AI learning platform that enables natural-language search across course materials, Socratic tutoring grounded in the professor's notes, instant homework feedback, and cohort-level analytics that support real-time adaptation of teaching.

14 TextForm

FRESHMORE
Wang Kangjie Bryan

Creating physical objects typically requires navigating Computer-Aided Design (CAD) software, slicers, and multiple export steps before a part can be 3D-printed. TextForm removes this friction by converting plain English descriptions into validated, print-ready geometry that can be sent directly to a printer. Running entirely on local hardware with no cloud dependency, it makes digital fabrication more accessible to users with ideas to build but no prior experience with CAD or slicing tools.

CAPSTONE

The industry-based Capstone Design project is the culmination of SUTD's Design · AI education, bringing together four years of cohort-based, interdisciplinary learning. Working in teams across disciplines, final-year students across different pillars work hand-in-hand to tackle real-world challenges faced by companies.

LIST OF PARTNERS

AIA Financial Advisers Private Limited

Aire-Venture Pte Ltd

Akronym Pte Ltd

AsiaCloud Solutions Private Limited

Astra Lab LLP

BIOBOT SURGICAL PTE. LTD.

BIOSENSE DIAGNOSTICS PTE. LTD.

Changi Airport Group (Singapore) Pte Ltd

Changi General Hospital Pte Ltd

Contoral Health Pte Ltd

CROCS TRADING COMPANY PTE. LTD.

CYBERXCENTER PTE. LTD.

Delta Electronics Int'l (Singapore) Pte Ltd

DSV Contract Logistics Pte. Ltd.

ECOPLUS INTERNATIONAL PTE LTD

ENTO INDUSTRIES PTE. LTD.

EQUATORIAL SPACE SYSTEMS PTE. LTD.

ESGpedia Pte Ltd

Fabrica Robotics Pte. Ltd.

FINSURGE PTE. LTD.

Home Team Science and Technology Agency

HomeTeamsNS

HYUNDAI MOTOR GROUP INNOVATION CENTER SINGAPORE

Infineon Technologies Asia Pacific Pte Ltd

KLASS ENGINEERING & SOLUTIONS PTE. LTD.

Ministry Of Social and Family Development

Municipal Services Office

Procter & Gamble International Operations SA Singapore Branch

PT Muliaglass

PYXIS MARITIME PTE. LTD.

Republic of Singapore Air Force

Seatrium (SG) Pte Ltd

Singapore Civil Defence Force

Singapore General Hospital Pte Ltd

Singapore Institute of Manufacturing Technology, A*STAR Research Entities

Singapore Sports School Ltd

SITA INFORMATION NETWORKING COMPUTING (ASIA PACIFIC) PTE LTD

St. Andrew's Community Hospital, a service of St. Andrew's Mission Hospital

The Esplanade Co Ltd

LIST OF PROJECTS

15 TANGLED SOCIAL

TANGLED SOCIAL is a mobile platform designed for students and young professionals to build genuine relationships. By matching users based on shared interests and aligned values, and limiting conversations to small groups or one-to-one interactions, the platform reduces digital fatigue and fosters meaningful connections. These digital introductions seamlessly transition into the real world through strategic Business-to-Business (B2B) partnerships with local venues and event organisers, providing our users with curated, real-life experiences.

CSD
Aung Khant Moe
Low Ting Hao
Yang Si Jun

EPD
Lai Si Yuan

ESD
Tan Boon Kai

16 A.Sort

A.Sort is a digital solution that optimises warehouse inventory slotting by analysing and forecasting item demand to position high-demand items closer to packing areas. Through heuristic algorithms and simulation, the system visualises picker movement via heatmaps to reduce travel time, minimise labour intensity, and improve space utilisation in warehouse operations.

ASD
Tan Jie Shen

CSD
Justin Cho Ming Jun
Koh Yee Cheng, Danae

DAI
Pare Moulik

ESD
Garima Panchal
Tan Yan Zu, Joe
Tay Kai Gen

17 ReelFocus

ReelFocus is a calm, emotionally supportive productivity app designed to help university students overcome procrastination driven by overwhelm, fear of failure, and perfectionism. Through a gentle fishing-themed journey, the app guides users through small, confidence-building steps — Release, Untangle, Cast, and Reel In — combining task breakdown, reflective prompts, and rewarding progress to help students begin academic work with clarity and momentum.

ASD
Nor Hidayah Arianna Ariffin

CSD
Allison Yee Wen Chyi
Ho Yew Yuan, Vancence
James Bryan Budiono

ESD
Toh Kin Yong

18 CENTRALISED DASHBOARD

This project involves the design and development of a scalable, secure dashboard for asset management and security monitoring, integrating data from multiple systems with near real-time updates. The platform features intuitive visualisations, alerts, and an AI-powered chatbot that enables natural-language queries, automated insights, and user support. It also encompasses system architecture design, backend development, AI integration, performance testing, and documentation, supporting enhanced operational awareness and decision making.

CSD
Chen Jing Hao
Hahvinaash Vijaykumarr
Hareendran Kallinkeel Harsh
Ong Kai Heng
Pea Jun Hao Darren
Thirunavukkarasu Harshini

ESD
Natalie Yen Gabriel

---

19 Salamander

Salamander is an autonomous ground robot developed to support the Singapore Civil Defence Force during firefighting operations by locating the seat of a fire in smoke-filled environments. Using thermal imaging for detection, Simultaneous Localisation and Mapping (SLAM) for navigation, and long-range communication technology, the robot enhances situational awareness to support on-scene decision making and firefighter safety.

ASD
Stephanie Anne Min Long
Tan Jie Ping
Tan Juan Dan

CSD
Mohamed Azfar Bin Mohamed Yusri

EPD
Ahmad Naufal Bin Rozaini
Nelson Sim Rui En

---

20 JourniAble

JourniAble is an augmented-reality (AR) learning solution designed to help educators in Special Education (SPED) schools teach essential commuting skills to students with special needs. Through immersive, gamified simulations, the platform provides a safe and structured training environment that builds confidence, promotes independence, and reduces long-term reliance on caregivers.

DAI
Muhammad Khairil Fahmi Bin Paroep

EPD
M Ayesha Shifana
Qistina Binte Mohd Sahril
Xavian B Muhammad Yunos

ESD
Hannah Lim Hwee Yen

---

21 Safe Paths for All

Safe Paths for All is a Capstone project in collaboration with the Municipal Services Office and the Land Transport Authority. The project aims to promote safe and gracious path-sharing among users through tactile strip installations, educational standees, and a virtual-reality (VR) game that immerses users in everyday scenarios to raise awareness of proper path etiquette and encourage safer behaviours on shared paths.

ASD
Janessa Kwan Su Hui
Rae-Anne Leong Kwuan Ling
Then Kunda

CSD
Foo Chuan Tian
Ho Atsadet
Muhammad Ammar Bin Mohamad Sofian

ESD
Blauta Isaiah Rafael Tugano

22 Athanor

Athanor is an AI- and Internet of Things (IoT)-based precision fermentation monitoring system for micro and nano breweries. By connecting directly to fermentation tanks, the system converts raw data into real-time quantifiable process metrics that help brewers adjust fermentation conditions and maintain batch quality, thereby reducing spoilage, lowering operational costs, and minimising reliance on manual monitoring.

CSD
Divya Kalaichelvan
Tan Meng Teck

DAI
Cyan Koh Shi-An

EPD
Issac Lim Jun Jie
Jervis Lu Shi Tian

23 Edvance

Edvance is a Science, Technology, Engineering, and Mathematics (STEM) learning platform for pre-university students that teaches coding through hands-on project building. The platform supports learners with scaffolded tasks, targeted hints, and Cody, an AI tutor that guides students through questions and nudges rather than direct answers. Unlike one-size-fits-all tutorials, Edvance offers personalised project pathways that build independent problem-solving skills and learner confidence.

CSD
Bathula Jithin
Koo Rou Zhen
Ng Wan Qing
Saraogi Priyanshi

ESD
Le Duy

24 Oral Device Prototype for Dry Mouth Management

This project develops a personalised intraoral device to provide continuous relief for patients with Xerostomia (chronic dry mouth). The device delivers a controlled, oil-based saliva substitute through a removable capsule integrated into a custom oral appliance. An AI-driven dental segmentation pipeline analyses 3D dental scans to suggest personalised capsule placement, supporting scalable manufacturing as well as customisation and clinical precision.

CSD
Benjamin Lee Ze Perng
Chu Mei Qi
Raymond Khan

EPD
Laverne Ang Qin Xuan
Lim Chun Yang Samuel

ESD
Asher Yeo Qiheng
Sharan Shekaran

25 Agent Watson

Agent Watson is a web-based platform that leverages a multi-agent open-web information retrieval system to automate early-stage digital information gathering for missing-persons investigations. Through targeted data retrieval, multimodal analysis, and iterative relevance assessment, the platform supports faster and more consistent information gathering and decision-making during the critical initial stages of an investigation.

CSD
Cheryl Kwek Tze Theng
Chia Tang Hsieh
Ernest Tan Wei Yan

DAI
Gay Kai Feng Matthew

ESD
Alaguvignesh Thirunavirkarasu
Jagannadha Rao Surya Vijapurapu

26 Glass Sync

Glass Sync is a real-time web application designed to streamline defect reporting in glass manufacturing lines. By replacing manual, physical reporting with a fast and intuitive digital workflow, the platform improves communication between hot-end and cold-end operators, reducing delays and enabling quicker corrective actions that enhance production visibility, product quality, and coordination in factory environments.

ASD
Leong Meng Dan, Amanda

CSD
Asli Robin Rufo
Myo Min Khant
Royce Lim Way Tat
Teng Shin Shoon, Nicholas

DAI
Brendan Keith Robert

ESD
Tan Shian Pei

27 PerceptIQ

Developed in partnership with Crocs, PerceptIQ is an AI-powered inline colour inspection system for manufacturing environments that replaces manual visual checks. Trained solely on product images, the system combines lighting awareness with machine vision to deliver objective, quantifiable colour evaluation at production speed, reducing human error and labour dependency, ensuring consistent quality across factories worldwide.

ASD
Kiatkongchayin Akrapong

CSD
Edison Ang
Lindero Dianthe Marithe Lumagui
Long Raphael James

DAI
Jahnvi Kaushik

EPD
Edrick Wilbert Ang

ESD
Chua Shan Yang Oliver

28 PLAYMORE — Experience Technology

PLAYMORE is a platform that enables small and medium-sized enterprises (SMEs) to tell richer product stories by combining customisable website tools with Near Field Communication (NFC) technology. Each NFC tag functions as a digital twin, enabling consumers to access interactive product experiences while providing blockchain-verifiable product integrity that builds trust and loyalty.

CSD
Andrew Foo Si Sheng
Lim Jia Hui
Peh Cheng Ye

ESD
Lai Xu Qing
Lucas Tan

29 Smart Home Device for Quality Milk Beverage

Milk-based coffee beverages rely on high-quality microfoam, yet home users often must choose between manual steam wands with a steep learning curve and convenient automated frothers that compromise quality. This project reimagines the home milk frother as an intelligent, adaptive device that enables users to consistently produce café-quality microfoam. By combining sensor data with AI-driven milk quality evaluation, the system supports different milk types while reducing cleaning effort and minimising milk wastage.

CSD
Lim Wei Xuan Jonas
Xiong Qian Long Mike

EPD
Lim Yee Kiat
Reese Ng
Stephanie Yong Jing Yi

ESD
Lim Sherri
Long Yan Ting

30 SHOPSAGE

SHOPSAGE is an AI-powered shopping assistant designed to support Southeast Asian consumers navigating fragmented platforms, inconsistent pricing, and unreliable reviews. By aggregating products across marketplaces and filtering low-quality or suspicious listings through semantic search, the platform reduces decision fatigue and enables faster, more transparent, data-driven purchasing decisions.

CSD
Marcus Chao Yan
Matthias Lee
Sean Lee

ESD
Jeriel Ng
Justin Wong

31 Ventara

Ventara introduces a kinetic facade integrated with a double-volume ballroom's HVAC system to reduce cooling demand in hot, humid climates. Using Venturi-optimised modules and Coanda-guided airflow, the facade enables controlled pre-event flushing to expel accumulated heat, lower baseline indoor temperatures, and reduce overall energy consumption.

ASD
Chua Zhang You
Crystal Chee Xin Jie
Lee Jin Yen Brian

EPD
Boominathan Harini

ESD
Aaron Yao Junchi
Jenna Chan Jing Yi

32 qage.dev

qage.dev is an AI-powered bug reporting platform that simplifies issue submission through one-click reporting. By automatically capturing technical context such as logs, screen recordings, and environment data, the platform transforms raw information into clear summaries, reproducible steps, and fix suggestions. This lowers reporting barriers and enables teams to resolve issues faster, improving overall software reliability.

CSD
Cephas Yeo
Gavin Ong
Yong Lin Tan

DAI
Tan Hun Chong
Valencia Arlin Halim

33 VizTwin

Designed to streamline building documentation, VizTwin automates the Scan-to-BIM process by transforming low-cost 3D scans into accurate, interactive Building Information Models (BIM). The solution reduces reliance on expensive hardware and labour-intensive modelling, supporting efficient building management and long-term asset planning for owners and facility managers.

ASD
Cheng Tzai Yun
Raymondal Srijana
Yap Cheng En Bernice

DAI
Amos Tan Pei Wei
Pettugani Sahitya

ESD
Arthur Geofery Taufiq

34 ForenSIX — AI-powered Misinformation Detection

ForenSIX addresses the limitations of traditional deepfake detection by combining established methods with a multi-agent, AI-driven reasoning architecture grounded in trusted, up-to-date news sources. By automating content classification and generating investigative reports with cited evidence, ForenSIX optimises fact-checking workflows and provides accurate insights into AI-generated misinformation.

CSD
Chew Ming Hui
Edgar Aw Seng Jing
Goh Yi Shen
Ng Kin Meng
Sng Wei Qi Amos

DAI
Lim Sing Thai, Tiger

ESD
Michael Hoon Yong Hau

35 CoPilot

CoPilot is an integrated hardware–software system designed to enhance safety during maritime pilot ladder transfers. By combining stabilised sensing with edge computer vision object detection and a low-distraction dashboard, the system improves close-approach alignment and situational awareness during the critical "last-metre" transfer under Sea State 1 conditions.

CSD
Ong Jung Yi
Viet Hung

EPD
Ho Wei Rui
Ng Wan Hao

ESD
Ng Wei Hao

36 B.HIVE (Baggage Handling Intelligent Vehicle Ecosystem)

B.HIVE is an autonomous baggage concierge designed to reduce baggage-handling friction in transportation nodes such as airports and cruise terminals. Utilising a sensor suite for autonomous navigation and Bluetooth-enabled passenger tracking, the system enables on-demand baggage collection and transport via a web interface. By decoupling baggage drop-off from traditional check-in counters, B.HIVE enhances passenger mobility and helps relieve terminal congestion.

DAI
Lee Jya Yin
Tan Ze Lin

EPD
Gwynne Ang
Mak Weng Hui
Ng Au Hern Wesley

ESD
Gran Lim

37 BOB the Pod

BOB the Pod is a compact, multi-functional meeting pod designed for space-constrained homes such as Housing and Development Board (HDB) flats. It transforms easily from everyday furniture into a focused workspace, supporting a range of activities including meetings, reading, and meditation. With adjustable features and customisable settings, BOB provides a practical and comfortable solution for productivity within limited living spaces.

ASD
Howard Budihartono
Tan Si Min

CSD
Goh Jian De
Trina Tan Xin Ting

DAI
Lee Wan Wei

EPD
Tan Qi Xiang

ESD
Anna Kuah Wen Juan

38 Autonomous Wall Sanding Robot

This project develops a manoeuvrable, man-portable robotic system to autonomously inspect and sand walls within confined construction environments. By integrating surface quality detection with active dust mitigation, the robot delivers consistent finishes while improving worker safety, enhancing site air quality, and reducing reliance on manual labour.

CSD
Ashley Koh Jia Jhin
David Ling De Wei

DAI
Charmaine Hong Min Xuan

EPD
Abigail Woo Syn Hwee
Ho Soon Yee
Mui Kai En

ESD
Evan Ang Jun Ting

39 Automated Road Inspection and Analysis (ARIA)

Ensuring safe and efficient airside operations at Changi Airport requires timely detection of road defects across its 75km network. This project automates airside road inspections by equipping service vehicles with cameras and sensors during routine operations. Computer vision, geotagged reporting, and integrated dashboards enable near-daily monitoring, replacing monthly labour-intensive inspections while supporting faster defect detection, proactive maintenance, and improved airside operational resilience.

ASD
Tan Soon Kang, William

CSD
Adelaine Ruth Hanako Suhendro
Muhammad Asyraf Bin Omar
Phon Avitra
Tan Yih Reng

EPD
Eugenie Alana Florencia
Sam Siong Yahn Sean

40 Doby

Doby is an AI-powered voice agent designed to provide 24/7 customer service support for SMEs. Using fast, context-aware conversations powered by RAG, the system reduces missed calls and operational costs, with optional video avatars to enhance the customer experience.

DAI
Aaron Tua Zhe Yu
Thian Xian Yao Kelvin

EPD
Leow Yew Rei

ESD
Goh Yi En
Lim Xue Jie Sean

41 PulseSense

Addressing the growing concern of exercise-induced cardiac events, PulseSense is an innovative wearable device that supports early detection of heart disease. It captures accurate five-lead electrocardiogram (ECG) readings during physical activity and uses AI-driven comparative analysis to identify signs of cardiac abnormalities, enabling sedentary individuals to safely return to cardiovascular exercise with greater peace of mind.

DAI
Chen Yirong
Tan Kian Yew

EPD
Jean Soh Chee Teck
Lim Jee Myang Daniel
Tan Hong Ray
Tan Zorye

42 SafeSight

SafeSight is an AI-powered warehouse safety system designed to detect forklift safety violations in real time. Using edge-based computer-vision models trained on synthetic image and video data, the platform captures violations and sends video alerts to supervisors. A centralised dashboard records incidents by date, location, and violation type, enabling organisations to analyse safety trends, improve safety compliance, and proactively reduce workplace risks.

ASD
Ng Suat Ying

CSD
Tejaswini D/O Venketroyalu
Toh Hengyi Lucas

DAI
Yihe Wang

ESD
Kareena Sunil Nandwani
Lee Kyle Darren Liao
Ling John Wei

43 AI Medical Image Segmentation Tool & Adjustable Prostate Phantom

This project consists of two components. The first is an AI-powered segmentation tool that automatically identifies the prostate and surrounding organs in medical images. The second is an adjustable prostate phantom that reflects organ positioning and can simulate prostate movement during biopsy procedures, allowing the team to develop ways to stay accurate when movement occurs. Together, the AI tool improves workflow efficiency and enhances the user experience during prostate biopsy and focal therapy.

CSD
Elliot Phua
Jun Jin
Palinya Sengdalavong

EPD
Julian How
Keegan Mariono
Kevin Chua

ESD
Jessica Loraine Gan

44 MicroKiap

MicroKiap is a clip-on surgical attachment designed to assist ear, nose and throat (ENT) biopsy procedures using existing microlaryngeal instruments. Featuring a soft, flexible hook mechanism, the device helps draw throat lesions closer for improved access, while a supporting virtual training simulator enables familiarisation and safe adoption of the attachment.

CSD
Kwa En Ming Samuel
Teo Zheo Joshua

DAI
Timothy Tang Long Zun

EPD
Chew Yu Qiao, Michelle
Chia Kai Xun, Bryan
Joshua Choy Weng Yew
Timothy Isaac Chua

45 Autonomous Robot for Transporting Equipment (ARTE)

ARTE is an autonomous ground vehicle robot developed to transport tools, test equipment, and spare parts within aircraft hangars. Using point-to-point navigation, obstacle avoidance, and an emergency stop mechanism tailored for enclosed environments, ARTE streamlines routine logistics, improves efficiency, and enables manpower to be redeployed to higher-value tasks through a supporting web dashboard.

ASD
Tay Xiao Chun

CSD
Toh Jia Le
Mageswari Ganeshkumar Mithunbalaji

DAI
Destor Rose Evangeline Anne Dagman

EPD
Andre Chan Jun Yu
Benjamin Seet Rui Feng

ESD
Chen Chuxin

46 VRnture — A New Dimension for Healing (Campus Centre Level 2)

VRnture is a VR platform designed to support guided therapy sessions through immersive, customisable environments. By integrating body and facial tracking, the system enables more natural interactions between therapists and clients, enhancing engagement, accessibility, and realism in sessions such as anger management and exposure therapy.

CSD
Yee Jia Zhen

DAI
Michelle Halim
Sofeanna Binte Yusof
Tham Hao Wei

ESD
Kuek Qian Rui Phoebe

47 Project Icarus

By 2030, a quarter of Singaporeans will be 65 or older, with 100,000 facing mild disability. While public transport has made strong strides in accessibility, true mobility equity for elderly and non-ambulatory users calls for solutions that go further — meeting them where they are, on their terms. Autonomous vehicles (AVs) have long held promise as an enabler for these groups, but their potential to enhance mobility and independence remains largely unrealised. Project Icarus responds to this equity gap by transforming a donated Hyundai IONIQ 5 into an AV designed for inclusive mobility, with a focus on serving elderly and non-ambulatory users.

ASD
Amara Rama

DAI
Bryan Tan
Koh Zi Kai Hubert
Tan Le Zhan

EPD
Alster Low
Goh Qian Zhe
Natalie Wong

ESD
Lim Kyu Ha

48 NutriFusion

NutriFusion is an integrated platform that centralises athlete nutrition and supplement data for sports nutritionists. By using agentic AI workflows for end-to-end tracking of dietary supplements and athlete records, the platform automates labour-intensive tasks and consolidates real-time insights, enabling faster, data-driven decision-making to streamline and optimise the support provided to athletes.

CSD
Khoo Yong Xuan
Mike Umali
Ryan Cheong

DAI
Cion Tan

ESD
Eugene Oon
Georgia Karen Lau

49 DeltaCare360

DeltaCare360 is an all-in-one mobile platform for managing Delta products, customer support, and service workflows. It integrates AI-assisted troubleshooting, agent support, and technician escalation, while providing access to product information, manuals, quotations, warranty registration, and quotation request services to improve service responsiveness and customer experience.

CSD
Ethan Wong Shao Wei
Henry Lee Jun
Malvin Ken Sudirgo
Noah Huang Zi Yi

DAI
Joel Lim
Lim Sophie

ESD
Tan Chong Hao

---

50 AI4PDPA

Personal Data Protection Pal (PDPal) is a GPT-driven compliance platform designed to help SMEs operationalise their obligations under Singapore's Personal Data Protection Act. Grounded in official regulatory sources, the platform translates complex legal requirements into practical, actionable guidance, supported by analytics and training to strengthen organisational accountability and improve compliance efficiency.

CSD
Fan Xiangwei
Gregory Lim Eu Rhen
Issac Anand Rajaram
Qi Hengchang

ESD
Ang Ching Xuen
Matthew Andrei Salatin Purba
Sherman Kho Jun Hui

---

51 Game On!

Game On! is a mobile, scenario-based parenting game designed to support parents of tweens and teens in practising effective parenting strategies. Through interactive branching narratives, reflective prompts, and light gamification, the platform provides a safe, non-judgemental space for parents to acquire knowledge and develop practical parenting competencies to support their parenting journeys. The app incorporates user feedback and translates evidence-based parenting strategies into practical, engaging digital experiences.

CSD
Genson Low Yuan Sen
Mohamed Zuhairi Bin Mohamed Amran

DAI
Wang Jingxi, Jeslyn

EPD
Ye Jiarong

ESD
Anushka Molgi
Michelle Pakalapati
Rachel Low Jia Xin

---

52 Sustainability Intelligence Platform

This AI-powered sustainability intelligence platform automatically scrapes, extracts, standardises, and benchmarks Environmental, Social, and Governance (ESG) metrics from corporate disclosures across Southeast Asia. By leveraging vision-language models, anomaly detection, and sector-based analytics, the system achieves high extraction accuracy and enables consistent comparison across more than 50 indicators and over 1,500 companies. Interactive dashboards support transparent analysis, quality assurance, and data-driven sustainability insights.

CSD
Chia Chun Mun
Lam Yu En
Ng Yu Hueng
Oon Shao Ren
Zachary Low Yang Kai

ESD
Khoo Teng Jin

53 Culinexus

Culinexus is an AI-powered operations platform designed to help SMEs in the food and beverage industry manage recipes, inventory, and procurement more efficiently. By unifying fragmented tools and transforming spreadsheet data into structured operational insights, the platform improves inventory visibility, reduces manual errors, and supports better purchasing decisions.

CSD
Liu Wen Xuan Daniel
Oleksii Onishchenko
Shaswat Manishansh

ESD
Dinh Huu Tuan Minh
Woon Yi Han

54 INFIBOT

INFIBOT is a generative AI-powered technical chatbot designed to support developers working with Infineon products. By consolidating community forums and code libraries into a unified retrieval system, it delivers code-aware and context-aware assistance that reduces troubleshooting time and improves developer productivity, while ensuring responses remain accurate, transparent, and grounded in verified Infineon sources.

CSD
Ang Li En Eldrick
Ng Junhao Marcus
Pham Hong Quan
Shah Hetavi Hardik

DAI
Mohamed Ammar Bin Mohamed Yusri

ESD
Chang Wei Zher Nicklas
Muhammad Irfan Bin Djuanda

55 PactPro

PactPro is a due-diligence platform that supports buy-side financial analysts in private equity and venture capital firms during live deals. It employs natural language processing (NLP) techniques and extraction pipelines to pull financial statement line items from company reports, thereby accelerating deal assessment and valuation.

CSD
Matthew Lalonde-Low Jiaxin
Mok Shum Jung
Zia Mohammad Saif

ESD
Chia Eng Wah, Raymond
Lim Chai Khoon

56 CC+

CC+ is an AI-powered customer experience (CX) management software designed for the construction and maritime industries. By integrating features such as task tracking, direct customer feedback channels, and sentiment analysis, the software delivers timely, practical insights for field and office teams and measures the impact of new CX initiatives through satisfaction scores.

CSD
Celest Teng Roh Yee
Saniyah Haider
Stavya Sharma

DAI
Tang Zhi Ju Edward

ESD
Everlyn Lim Jia Qi
Marianne Lim En Hui
Sean Peh Jia Jing

57 DUBY (Duty Buddy): An intelligent staff rostering system for healthcare

DUBY is an intelligent staff rostering system developed in partnership with St Andrew's Community Hospital to address the complexity of nurse scheduling. By automating roster generation through optimisation techniques, the system balances regulatory compliance, fairness, and ward coverage, improving workforce efficiency and supporting effective hospital operations.

CSD
Do Viet Anh
Lee Wei Jie
Mikhail Yasoputra Jeffrey
Tania Koh Tze Ern

ESD
Lee Peck Yeok
Tay Pei Yun
Wong Zhi Hung Xavier

58 Trade surveillance

This web-based trade surveillance platform strengthens fraud detection for financial institutions by analysing transactional and behavioural data. Using a hybrid approach that combines machine learning models, rule-based logic, and statistical anomaly detection, the system uncovers complex suspicious patterns while maintaining interpretability in decision making.

CSD
Aishwarya Iyer
Joshua John Lee Shi Kai
Khoo Zi Qi
Sean Ho Junxian

EPD
Cheyenne Chua Yan Ting

ESD
Li Xing

59 Financial Needs Calculator

Financial Needs Calculator is a digital financial planning platform that requires minimal user input while empowering advisors to deliver consistent, data-driven insights. Through clear interactive visualisations, the platform streamlines the planning process, ensuring clearer outcomes and boosting confidence in financial decisions.

CSD
Du Bowei
Lim Cai Ying
Samuel Roshan
Tirkey Shania Sarah

DAI
Khairul Shabir Bin Khalid

ESD
Kong Le'ann Norah
Lim Jun Jie, Sean

60 INTELLIPAL

INTELLIPAL is a retrieval-augmented generation (RAG) intelligence application designed to empower officers on the ground with fast, decentralised access to operational information, with or without internet connectivity. By replacing keyword-based searches and slow legacy systems with natural-language queries, the platform reduces operational friction and enables faster, more informed frontline decision-making, transforming traditional information search workflows into a more agile and effective digital system.

CSD
Cai Junjie
Gay Shin Lee
Ho Xiaoyang
Lee Jun Hui Ryan
Shah Pankti Amish
Sun Sitong

ESD
Luvena Liethanti

61 Novel Navigated Knee Osteotomy System for Lower Limb Deformity Correction

The Novel Navigated Knee Osteotomy System is an advanced navigation platform developed to support high tibial osteotomy procedures for lower-limb deformity correction. By enabling real-time mechanical axis calculation and three-dimensional visualisation of the limb, the system supports accurate pre-operative planning and intra-operative guidance, improving surgical precision, consistency, and patient outcomes.

CSD
Haresh Jayant Mahalingam
Karen Neo
Zhuang Yang Kun

DAI
Siti Fatimah Binte Rosli

EPD
Lim Wei Ping Dominic

ESD
Ernest Ong Kee Lin

62 MERAS

MERAS is a corporate team-bonding solution that assigns players distinct roles based on their personality traits to leverage individual strengths. Combining arcade-style mini-games and AI-driven challenges, the experience supports three to five players per team in indoor and outdoor settings, fostering psychological safety, collaboration, and meaningful connections across generations.

CSD
Khoo Jing Heng
Mark Joshua Manacsa Pacheco
Tan Jun Long Dylan
Tan Kui Yun Lucas
Tan Yan Lin, Charlese

ESD
Tan Shin Herng

63 CarbonX

CarbonX is a web-based platform featuring SproutAI, an AI chatbot that streamlines carbon reporting for SMEs. It automatically generates digital product passports — structured digital records of product materials and carbon data drawn from uploaded bills of materials and invoices. Integrated Life Cycle Assessment databases fill supplier gaps using verified upstream emission factors.

CSD
Luvyn Louis Sequeira

DAI
Celine Goh Hui Ling
Lim Ying Xuan

EPD
Muhammad Hilman Bin Mohd Sabli

ESD
Sneha George

64 Digital Elevation: Revolutionising Sales & Marketing with Web App Innovation

Digital Elevation redesigns an end-to-end trade show lead management ecosystem comprising a Lead Capture App and a Leads Management App. The project explores offline-first, performance-optimised, and adaptive user interface (UI) solutions to improve lead capture, routing, and visibility across live trade show interactions and post-event distributor handover, enabling faster decision making and more effective sales follow-up.

CSD
Benjamin Teoh Tian Hao
Pusti Megha
V Priyanka Valli

DAI
Fawziyah Bte Rosli
Heng Yi Qing

ESD
Chowdhury Parsa Akhter
Harrish Rahul Venkatraman

65 PalletProof

PalletProof optimises warehouse parcel consolidation by combining optical character recognition and radio-frequency identification to prevent pallet misloads. The system verifies parcel and pallet information in real time during assembly and final checks, triggering digital-twin alerts when mismatches occur. This enables faster error detection, improves accuracy, and reduces reliance on manual verification in warehouse operations.

CSD
Elangovan Sushmitha
Nam Hayul

DAI
Lee Rui Yu

EPD
Athirah Nurunnisa Binte Mohamad Redwan

ESD
Chai Yu Kang
Paige Trinity Tan
Zheng Qingwen

66 ShowerSense

ShowerSense helps researchers at Procter & Gamble better understand hair-washing behaviour by capturing motion data through wearable Inertial Measurement Unit (IMU) sensors and converting it into clear, measurable representations of shower routines. This enables efficient, repeatable analysis and automatic quantification of behaviours, such as the number of wash strokes. By reducing reliance on manual observation or video review, ShowerSense introduces a new data stream that uncovers deeper behavioural insights and improves the efficiency of consumer research.

ASD
Long En Qi Rayne

CSD
Douglas Chun-Hao Tan
Manoranjan Roshan Emmanuel
Nicole Cheah Ching Suan

DAI
Celest Ng Song Wei
Chow Liang Zhi

ESD
Julianna Sherine Galvez Teodoro

67 Adaptive robotics system

This project develops an adaptive robotic teleoperation system using the GELLO framework with force feedback, enabling a human operator to remotely control a robotic platform while receiving real-time haptic feedback. By closing the feedback loop, the system improves manipulation precision, operational safety, and situational awareness during remote tasks.

CSD
Balraj Singh Dhaliwal
Muthu Ramaswamy

EPD
Ngo Seng Kiat
Phua Wei En
Thirunavukkarasu Karthikeyan

ESD
Loh Jun Siang

68 NuPoint

NuPoint is a low-profile, wrist-mounted wearable and platform equipped with high-precision robotic sensors for tracking metrics relevant to stroke recovery. By quantifying and qualifying recovery progress, the solution supports therapists in treatment planning while providing positive feedback to stroke survivors to enhance motivation and promote better recovery outcomes.

CSD
Darren Chan Tze Hao
Gangesh Kumar

EPD
David Chew Rong-Jie
Lee Yan Han

ESD
Soh Yu Ying

69 CyberXercise

CyberXercise is a scalable cyber training platform that simulates realistic enterprise Information Technology (IT) and Operational Technology (OT) environments. By providing engineers and operators with hands-on, infrastructure-specific training in a safe and controlled setting, the platform strengthens cyber resilience and preparedness.

ASD
Ooi Zher Xian

CSD
Augustine Lim King Hwee
Brandon Ng Joon Hoe
Chan Wei Ping
Manimoliyan Elankumuthan
Teo Xu Kai
Teo You Xiang

70 ESS-SUTD FCS: Flight Controller for Rocketry

ESS-SUTD FCS is a proof-of-concept, fault-tolerant computing architecture demonstrator designed to be spaceflight-capable for low-Earth-orbit missions at a fraction of the cost of traditional avionics. It integrates spaceflight-heritage design principles with commercial off-the-shelf components and is supported by a software ecosystem built on National Aeronautics and Space Administration's (NASA) F-Prime flight software framework. The platform enables configurable software-in-the-loop simulations that demonstrate robust failure tolerance and accurate flight-path alignment.

CSD
Anika Ajay Handigol
Siew Rui Ze, Zayne

EPD
Cherian Sarah
Mervyn Wong Ju-Liang
Pan Ziyue

ESD
Ang Lexuan
Quek Kai Ling Jacinta

71 CRUMS

CRUMS is a plug-and-play food waste management system powered by black soldier fly larvae that encourages the upcycling of food waste into sustainable resources. By combining waste processing with educational engagement, the system supports the normalisation of food-waste upcycling and provides clear traceability throughout the process. In doing so, it reduces reliance on incineration and contributes to more sustainable waste-management practices in Singapore.

CSD
Austin Isaac
Larioza Andrea Ronquillo

DAI
Teo Yan Zhen

EPD
Chris Folk Wen-Howe
Janel Lee Mei Er
Lawrence Pasion Caisip

ESD
Nathan Ansel

72 EvoFlow

EvoFlow is a redesigned Variable Air Volume (VAV) system that improves airflow accuracy, reduces pressure loss, and enhances energy efficiency in Heating, Ventilation, and Air Conditioning (HVAC) applications. Through advanced sensing, predictive machine-learning damper control, a monitoring app, and low-emission manufacturing processes, EvoFlow delivers a smarter, more adaptive, and sustainable HVAC solution with significantly lower carbon dioxide emissions.

CSD
Kunder Shruti Arun
Mali Janya

EPD
Foo Yu Qian, Erika
Lai Shi Jie, Keith

ESD
Anay Shastri
Rout Bishmit

73 Plastoform

Plastoform is a modular, multi-functional furniture system created from recycled polypropylene waste generated by DSV Contract Logistics. Designed for flexible configuration, the solution extends the lifespan of industrial plastic waste, reduces landfill impact, and delivers sustainable, long-term value within logistics and workplace environments

ASD
Kieran Tan Yu Chong
Khoo Kai Qing Kelly
Ng Hui Ching, Vernice

CSD
Javier Heng Tze Jian

ESD
Tan Hyu Seong
Yap Yixuan
Yeo Kah Kiat

74 10TICKLES

10TICKLES explores a development framework for soft robotics by coupling a physical tentacle arm with a MuJoCo simulation. Through computer-vision tracking and system identification, the project creates a digital twin that enables rapid and safe experimentation with non-linear soft-robot dynamics. The framework reduces reliance on costly physical iteration while supporting scalable control learning and improving alignment between simulated and physical behaviour.

ASD
Fushia Virtucio

CSD
Clarence Lau

DAI
Darrel Liew
Ivan Wong

EPD
Jowell Nim
Tan Aik Young

ESD
Kenneth Wong

75 CrackDect

CrackDect is a cost-effective system designed to detect bottom-surface cracks in glass bottles, with a focus on accessibility for SMEs. Using cameras and computer vision, the system captures images of bottles, identifies defects beyond conventional inspection methods, and presents results through a web-based dashboard, enabling clearer analysis and improved quality control.

CSD
Shrinidhi Arul Prakasam
Swasti Arya
Syzdykov Alen
Yang Rui

EPD
Ahmad Danish Bin Azli
Thakur Utkarsh Abhijit

ESD
J Trishani

76 Designing a Calm Space at Esplanade — Theatres on the Bay

This project designs a calm space and sensory tactile environment to enhance accessibility and inclusion at Esplanade — Theatres on the Bay. Through low-stimulation design and familiar tactile elements, the space supports emotional regulation for neurodivergent audiences while helping users gradually acclimatise to the performance environment, reducing anxiety and promoting a more inclusive theatre experience.

ASD
Lim Zhi Wei, Jonathan
Sean Hung Xiang Hui
Wong Wei Ling

CSD
Christabel Lim
Yap Jing Yee

ESD
Goh Yong Zhi
Tan Hong Han

Engineering Systems and Design (ESD)

Engineering Systems and Design (ESD) is one of the five undergraduate degree programmes at SUTD. Our students are equipped with a formidable combination of expertise in AI, design, analysis, management, and optimisation, enabling them to tackle large and complex systems challenges.

For these Term 4 client-facing projects, commercial datasets are used to derive actionable insights and value for corporate clients. We also showcase projects from the Term 6 simulation course, where students build models to support informed and effective decision making.

LIST OF PARTNERS

Infineon Technologies Asia Pacific Pte. Ltd.

SBS Transit Rail Pte. Ltd.

Singapore Health Services Pte. Ltd. (Changi General Hospital)

SLB

LIST OF PROJECTS

77 Agent-Based Simulation of Singapore's MRT System

ESD
Goh Yi En
Kwa Yu Liang
Loy Xing Jun
Wong Wei Jin Justin

This project uses agent-based simulation to model Singapore's East–West Mass Rapid Transit (MRT) Line and examine peak-hour congestion and operational trade-offs. It identifies optimal train frequencies that balance waiting times, platform crowding, and operational costs. Through an interactive interface, users can adjust variables such as train frequency, passenger demand, and breakdown scenarios. Visual outputs, including line maps, passenger flows, and cost breakdowns, enable assessment of system performance under different conditions. These insights support improved scheduling and infrastructure planning for train operators, urban planners, and policymakers, ultimately enhancing the commuter experience.

78 Modelling Visitor Behaviour in Theme Parks Using Discrete Event Simulation

ESD
Anna Kuah
Chua Shan Yang Oliver
Sneha George
Tan Shian Pei

This project uses Simio to simulate a theme park and identify ways to improve visitor satisfaction by reducing queue times. It incorporates different visitor types, ride eligibility rules, and behaviours, including visitors abandoning queues when they are full. Visitors who fail to access three rides tend to leave the park. To address this, ride capacities and maximum queue lengths were adjusted and tested across multiple configurations and replications. The findings show that increasing ride capacity is more effective than extending queues in reducing visitor drop-off. These insights support planning for ticket sales, ride design, and park layout, ensuring that no more than 1% of visitors exit the park.

79 Automated Technical Query Answering Using Retrieval-Augmented Chatbot

This project develops a retrieval-augmented generation (RAG)-powered chatbot that accurately answers technical queries by extracting and interpreting hierarchical structures and tabular data from multiple PDF datasheets. The chatbot enables intuitive querying, efficiently retrieves relevant information, and provides responses with detailed source attribution, including filename, section, sub-section, page number, and content — ensuring accuracy and eliminating hallucinations.

ESD
Au Xuan Yu Rachel
Goh Pei Ning Shanice
Lalam Venkata Sai Varshitha
Matthew Ardian Sugiarto
Max Lai Yiheng

80 Data Classification for Improved Cost Analysis

This material and supply cost analysis project examines global spending of around US$50 million across materials, supplies, and procurement processes within the organisation. It aims to identify cost-saving opportunities and provide actionable insights to support data-driven decision making.

ESD
Brosman Lim Hao Xiang
Jesco Tan Jiong Rui
Sim Puey Kun
Tan Zhe Xuan
Utkarsh Raj Sutihar

81 Automation and Remodelling of CGH Workload Statistics Report

Changi General Hospital (CGH) currently generates its workload statistics report manually using Microsoft Excel, a process that is time-consuming and prone to human error. The report is generated monthly and includes a wide range of hospital performance metrics. This project modernises and streamlines the reporting workflow by automating report generation and enhancing analytical capabilities for trend analysis, thereby improving efficiency and data accuracy.

ESD
Debbie Aw Yu Xuan
Nicholas Peck Jun Le
Park Ju Wan
Sylvia Goh Xue Fei
Yap Ka Jun

82 Predictive Maintenance of Rail Equipment

This project develops predictive maintenance models to anticipate rail component failures before they occur. By enabling early intervention, predictive maintenance has the potential to replace existing maintenance regimes, reducing costs through lower spare-part consumption and fewer overall maintenance man-hours.

ESD
Mohamed Haziq Bin Mohamed Yazeed
Nusaibah Binte Mahmoud Mathlub
Park Hyunseo
Wong Zheng Yew
Xiao Yanzi

83 Charging Ahead: Understanding EV Adoption Through Agent-Based Simulation

ESD
Lim Sherri
Loh Jun Siang
Nicklas Chang
Rachel Low Jia Xin

This project uses agent-based simulation (ABS) to model electric vehicle (EV) adoption in urban environments. Each agent represents an individual consumer making purchasing decisions based on a willingness score influenced by factors such as consumer awareness, economic considerations, and EV infrastructure. By simulating real-world decision making, the model identifies key drivers and barriers to EV adoption and provides insights to support strategies for accelerating cities' transition to sustainable transport.

84 S.M.O.K.E.R. — Smoking Mitigation Outreach for Knowledge and Education Research

ESD
Gan Jessica Loraine Ngo
Ng Wei Xian
Tan Jun Onn
Teo Ming Teck James

S.M.O.K.E.R. is an interactive simulation that models the long-term health effects of smoking under different lifestyle and policy scenarios. Users can adjust factors such as tax rates, rehabilitation programmes, and peer influence to observe their impact on life expectancy and causes of death. The model provides data-driven insights for educators, researchers, and policymakers.

Engineering Product Development (EPD)

Engineering Product Development (EPD) is one of the five undergraduate degree programmes at SUTD. This exhibition showcases a selection of innovative solutions developed by Sophomore students from 30.007 Engineering Design Innovation, a signature core course in EPD. It highlights how technology and human-centred design can come together to address real-world challenges in human enhancement. With a focus on boosting productivity, health, and comfort, these projects reflect the EPD approach to creating meaningful and impactful solutions through design, engineering, and emerging technologies.

LIST OF PARTNERS

Dräger

Olive Tree Development Centre

Tan Tock Seng Hospital

LIST OF PROJECTS

85 Adam & Eve — Firefighter Thermal Heads-Up Display (HUD)

Adam & Eve is a compact, retrofittable thermal heads-up display (HUD) for firefighter safety in zero-visibility conditions. Integrated into self-contained breathing apparatus (SCBA) masks and helmets, it provides a real-time thermal feed, allowing hands-free operation. Born from an empathy study revealing fogged masks as a major visibility issue, the project was developed in collaboration with Dräger. The prototype features a helmet-mounted infrared camera, wireless video transmission, and an in-mask HUD powered by AI for heat and victim detection. Modular, affordable, and highly readable in dense smoke, Adam & Eve embodies the next generation of firefighter protective equipment, enhancing mission effectiveness and saving lives.

EPD
Hadi Priyatna Arief
Ho Yong Zhan Vincent
Izzat Bin Mahad
Liew En Yi Emma
Ong Shu Zhen Melissa
Rooney Lee
Silvanus Sng Qi Hui

86 How to Train Your Knee (HTTYK)

How to Train Your Knee (HTTYK) is a knee wearable for online knee ligament physiotherapy. Inspired by the challenges post-discharge patients face with weekly travel, it uses electromyography (EMG) and inertial measurement unit (IMU) sensors to provide physiotherapists with data to ensure exercises are performed correctly. As the sensors are attached and removed using velcro, they can be reused and customised for each patient. Data collected is shared via an app for progress tracking. Made from cotton and spandex, its removable outer layer allows friends and family to personalise it with drawings, recreating the experience of wearing traditional casts.

EPD
Debbie Della Rosa
Gan Xiao Tong
Koh Zhao En
Lee Yi Shuen
Mohamed Danial Bin Hamdan
Ooi Lit Shen
Rithika Elumalai
Yap Jing Rui Bevan

87 PostureFlow

PostureFlow is a non-intrusive, wearable posture monitoring system designed to reduce musculoskeletal strain among healthcare professionals. Using high-precision microphones positioned around the neck, the device captures tracheal breathing sounds to detect subtle changes in body alignment. Integrated with signal decomposition and machine learning, PostureFlow processes audio data in real time to classify posture accurately. It wirelessly connects to a mobile application, enabling nurses to receive real-time feedback and maintain ergonomic health without disrupting their demanding clinical workflow. Through this data-driven approach, PostureFlow aims to lower long-term injury risk and support the physical well-being of frontline caregivers.

EPD
Caleb Ong Kee Han
Hui Wan Sheng
Li Tze Hng
Matthew Chew Jin Kiat
Muhammad Haziq Bin Jailani
Victorius Deo Andila Dharmawan
Yap Li Ying

88 N3ST

N3ST is an AI-powered platform supporting early childhood development by providing data-driven insights through play. Using sensory 3GG modules and the N3XUS analytics platform, it transforms natural play into measurable behavioural data, helping parents and clinicians track developmental progress and detect early developmental delays. By enabling timely intervention, N3ST creates a lasting positive impact on a child's growth.

EPD
Ang Yu Xuan Gwenda
Eugene Cheong Kok Yun
Germaine Tan
Joel Marc Tan Wei Zhong
Kiran Ratheesh Thekkedath
Leong Yu Qing
Tan Sheng Zhe
Tsang Ho Mun Titus

Architecture and Sustainable Design (ASD)

As one of the five undergraduate degree programmes at SUTD, Architecture and Sustainable Design (ASD) showcases a diverse range of student projects that explore how architecture can respond to environmental, technological, and social challenges.

The works on display range from regenerative coastal infrastructure that integrates renewable energy, food systems, and habitation, to research investigating how generative AI imagery can be translated into built form through distributed digital fabrication. Other projects reimagine housing, hospitality, and education as shared, intergenerational environments in which care, play, and everyday green practices become central spatial strategies.

Collectively, these projects reflect ASD's emphasis on design as a systemic, socially engaged, and forward-looking practice.

LIST OF PROJECTS

89 PlayWeb

ASD
Aceson Han
Law Zhenwen

PlayWeb reimagines Qi Hua Primary School as an intergenerational co-living campus, transforming the former school into a vibrant, layered environment where living, play, and community intersect. Rather than treating play as a peripheral activity, the project positions it as a central spatial strategy — acting as connective tissue that bridges generations, encourages social interaction, and activates underused spaces. At its core is an elevated green deck that threads through the existing blocks, linking classrooms, corridors, and courtyards into a continuous landscape of gardens, play zones, and communal terraces. Beyond circulation, the deck enables informal encounters, shared activities, and collective care.

90 KindredGarden House

ASD
Tan Juan Dan

The KindredGarden House reimagines hospitality as care through a plant nursery that anchors Sanya's emerging green network. Porous and terraced, the architecture integrates community gardens, workshops, and freely growing greenery into residential spaces, creating generous circulation and shared thresholds. By intertwining everyday green activities with living, the project fosters cross-generational interaction, enabling elderly residents to engage with younger people through shared acts of cultivation and care.

91 Project LiSA

ASD
Wang Yiwei

Project LiSA (Lightweight Structural Assembly) explores a simple yet compelling question: can an image generated by AI be realised as a physical architectural object? Using multiple diffusion models, a text prompt is translated into AI-generated images, and then developed into corresponding 3D models. Through computational design processes, these models are segmented into LiSA components and fabricated via a network of desktop 3D printers operating in parallel. Rather than treating AI solely as a tool for producing images, the project demonstrates how AI-generated imagery can be embedded with structural and manufacturing intelligence, serving as a foundation for physical production.

92 DeReX

DeReX transforms ocean dynamics into regenerative coastal infrastructure, using wave converters, seabed turbines, and tidal lagoons to create a decentralised renewable energy network along the shoreline. Piloted around Gaya Island off Kota Kinabalu — where tidal potential is high but infrastructure is limited — the system turns the ocean into both landscape and utility, supporting local livelihoods. Its closed-loop architecture integrates aquaponics, desalination, food production, and habitation, adapting to changing occupancy and environmental conditions. A cooperative digital ledger records and distributes energy flows, enabling communities to jointly manage resources and laying the groundwork for a wider, distributed energy and settlement network across Southeast Asia.

ASD
Hannah Summer Lee I-Rei

Design and Artificial Intelligence (DAI)

60.008 System Design Studio is a core course within Design and Artificial Intelligence (DAI), one of the five undergraduate degree programmes at SUTD. Projects developed during the course showcase how students apply systems thinking, computational modelling, and AI-driven approaches to address complex real-world challenges. This project reflects how AI, technology, data, and human-centred design are integrated to improve decision making, efficiency, and system performance in real-world contexts.

LIST OF PARTNER

FueLNG

LIST OF PROJECT

93 Smarter LNG Bunkering with Intelligent Data Analytics & Simulation (SIMULYNX)

SIMULYNX streamlines liquefied natural gas (LNG) bunkering data workflows for FueLNG, transforming manual, error-prone processes into automated analytics and simulation. An optical character recognition (OCR)-powered dashboard extracts key data from Statements of Facts to generate operational key performance indicators (KPIs), while an agent-based simulation models multi-vessel interactions and stochastic delays to evaluate bunkering performance. These tools significantly reduce processing time, minimise errors, enable data-driven operational planning, and analyse operational bottlenecks.

DAI
Brian Lim Yong Jenq
Khairul Shabir
Rose Evangeline Anne Dagman Destor
Tan Zi Hui
Turrag Dewan

TRAILBLAZING A BETTER WORLD BY DESIGN.