SUTD
SINGAPORE UNIVERSITY OF
TECHNOLOGY AND DESIGN

D A I

DESIGN AND ARTIFICIAL INTELLIGENCE

TRAILBLAZING A BETTER WORLD BY DESIGN.

REIMAGINING DESIGN WITH AI

Forging a new concept in design innovation with AI technologies, the Design and Artificial Intelligence (DAI) programme focuses on better design through AI. It aims to nurture a new generation of talents with these specialised skills, focusing on the application of AI-driven design across user interface/user experience, products, systems and built environments.

From designing smarter medical systems for accurate early disease detection to predicting urban growth patterns to optimise city planning, and safer and more intuitive digital banking services. These are just some of the possibilities of how AI-driven design innovation can transform the economy and improve our lives.

OUR DAI GRADUATES ARE BOTH DESIGNERS AND INNOVATORS WHO HARNESS THE POWER OF AI TO TACKLE PRESENT AND FUTURE CHALLENGES IN AN AI-DRIVEN WORLD, ELEVATING DESIGN USING AI ACROSS PRODUCTS, SYSTEMS, SERVICES AND THE BUILT ENVIRONMENT.

Graduate with a Bachelor of Science in Design and Artificial Intelligence

A WORLD-FIRST CURRICULUM IN DESIGN AND AI

Over the course of the first three common Freshmore terms, you will have built a solid foundation in Science, Mathematics and Technology (SMT), Humanities, Arts and Social Sciences (HASS) and Design, which will prepare you for your DAI major.

In the DAI programme, you will master how to use AI for enhanced design through application-based courses and design studios. You will engage in AI design innovation studios where you make connection between AI and design thinking methodologies. These studios offer hands-on experiences, collaborating with real clients on company-sponsored projects using real-world data.

You will gain diverse exposure that spans across a wide array of industry sectors. In addition to your DAI subjects, you will continue to take courses in HASS that will prepare you to be a new kind of design innovator who embraces the cultural and social context of technology in the modern world.

Every undergraduate will have worked on at least 20 design projects throughout their years of study at SUTD. These experiences culminate in a two-term Capstone project in your graduating year. This allows you to work in teams with students from other majors and apply the skills you have mastered in DAI on either a client-sponsored industry-based project or your own entrepreneurial project to solve a real-world challenge. Upon graduation, you'll possess an extensive portfolio of industry-inspired projects, well-prepared for your career journey.

TRAILBLAZING A BETTER WORLD BY DESIGN.

DAI CORE SUBJECTS

- AI Applications in Design
- Algorithms
- Applied Deep Learning
- Human Computer Interaction and AI
- Machine Learning
- Product Design Studio
- Service Design Studio
- Spatial Design Studio
- Systems Design Studio

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**Dr. Peh Chin Hwee
Vice President,
Head of Intelligent Systems
(Robotics & Autonomous, Systems),
ST Engineering**

AI is a new area. Designing AI into a traditional engineering system is often an afterthought. An AI-capable system should incorporate AI into its design at the onset. **It will benefit the industry if AI & DI can be fused seamlessly into all AI product designs.**

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**Mr Johnson Poh
Executive Director &
Head Enterprise AI,
United Overseas Bank**

SUTD's DAI degree is relevant in building a pipeline of **multi-disciplinary data scientists and AI engineers.**

LEARNING OUTCOMES OF DAI CORE
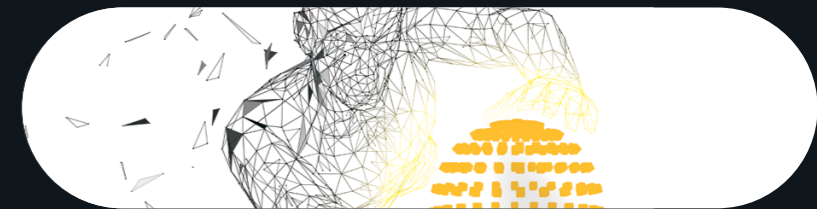
INTERDISCIPLINARY EXPERTISE

Combine technical expertise in AI with design innovation skills to apply across a range of disciplines, e.g., engineering, healthcare, media, built environment and more.

IN-DEPTH KNOWLEDGE OF DESIGN THEORIES & PRACTICES

Disrupt economies with your extensive know-how in design theories and practices.

EFFECTIVE AI DEPLOYMENT

Increases effectiveness in AI deployment.

DAI CURRICULUM

JAN-APR	MAY-AUG	SEP-DEC

Legend:
- ⬤ Freshmore Subject
- ⬤ Core Subject
- ⬤ Humanities, Arts and Social Sciences (HASS) Subject
- ⬤ Elective
- ⬤ Capstone

- ▶ Y1
- ▶ Y2
- ▶ Y3
- ▶ Y4

TERM 1
Modelling & Analysis
Physical World
Computational Thinking for Design
Social Science: Understanding Behaviour, Culture & Society (HASS)

TERM 2	TERM 3	
Modelling Space & Systems	Modelling Uncertainty	
Technological World	Global Humanities: Literature, Philosophy, and Ethics (HASS)	**VACATION**
Science for a Sustainable World	Any Two Electives*	
Design Thinking & Innovation		

TERM 4	TERM 5	
Algorithms	Machine Learning	
AI Applications in Design	Human Computer Interaction and AI	VACATION/ INTERNSHIP/ EXCHANGE
Product Design Studio	Service Design Studio	
HASS	HASS	

TERM 6		TERM 7
Applied Deep Learning		Capstone
Elective	VACATION/ INTERNSHIP/ SUMMER PROGRAMME	Elective
Systems Design Studio		Spatial Design Studio
HASS		HASS

TERM 8
Capstone
Elective
Elective
HASS

*Term 3 Electives: Science and Technology for Healthcare
Data Driven World
Designing Energy Systems
Spatial Design World

- In addition to all subjects in Term 1 being grade-free (Pass/No Record), students can choose up to four more subjects from Terms 2 and 3 to be grade-free.
- Students will declare their choice of major in Term 3.

MINOR PROGRAMMES

Our range of minors offers you more choices and flexibility in pursuing your broader interests.

- **Minor in Analytics***
- **Minor in Computer Science (CS)**
- **Minor in Design Innovation, Ventures and Entrepreneurship (DIVE)**
- **Minor in Design, Technology and Society (DTS)**
- **Minor in Digital Humanities (DH)**
- **Minor in Engineering Systems (ES)^**
- **Minor in Engineering Product (EP)**
- **Minor in Healthcare Informatics (HI)**
- **Minor in Sustainability by Design (SD)**

*For students enrolled from AY2022 onwards.
^For students enrolled before AY2022.

Students will indicate their choice of minor before the start of Term 4.
Information is subject to change. Visit sutd.edu.sg/minors for latest updates.

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DBS Bank Ltd

It's been an amazing experience working with the students. They **showed professionalism in both technical and project management aspects** which are essential skills in today's design and tech industry. It is always an eye opener to hear fresh perspectives from them and the management is impressed with the quality of ideas. Look forward to more opportunities to work with them!

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AMD

The students' independence and resourcefulness in finding innovative solutions were remarkable. They confidently approached problem-solving with **a unique and fresh perspective, reflecting their innate creativity and passion for their work.**

Information is subject to change. Visit dai.sutd.edu.sg for latest updates.

FUTURE POSSIBILITIES

🤝 CAREERS

DAI graduates are prepared for a wide range of AI-driven design careers. Your skills in technology and design thinking prepare you for both the private and public sectors, including banking and finance, UI/UX agencies, high-tech firms and more.

EXAMPLES OF DAI GRADUATES' JOB TITLES:

- Applied machine learning engineer
- Business intelligence developer
- Data scientist
- Data visualisation specialist
- Design innovator
- Innovation strategist
- Product/System/Service designer
- User experience (UX) designer
- User interface (UI) designer

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P&G Singapore

We are **very happy with the idea that the team has came up** with and with what they have learned and achieved in such a short period of time.
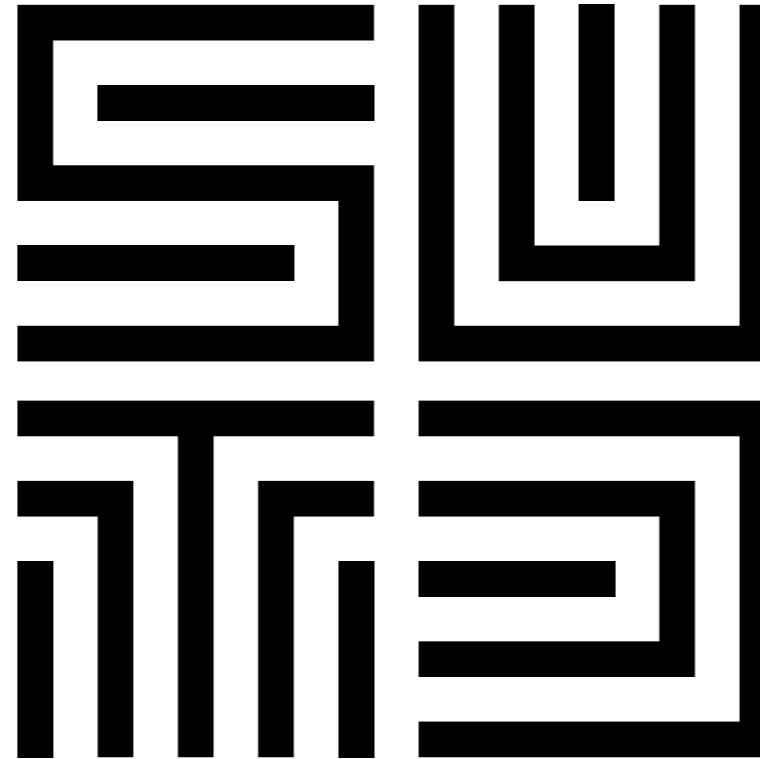
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dnata Singapore Pte Ltd

We are especially pleased with the team's presentation. I would like to **commend their efforts and am greatly impressed to see the team's prototype** and their ability to promptly come up with an improved design following our trial.
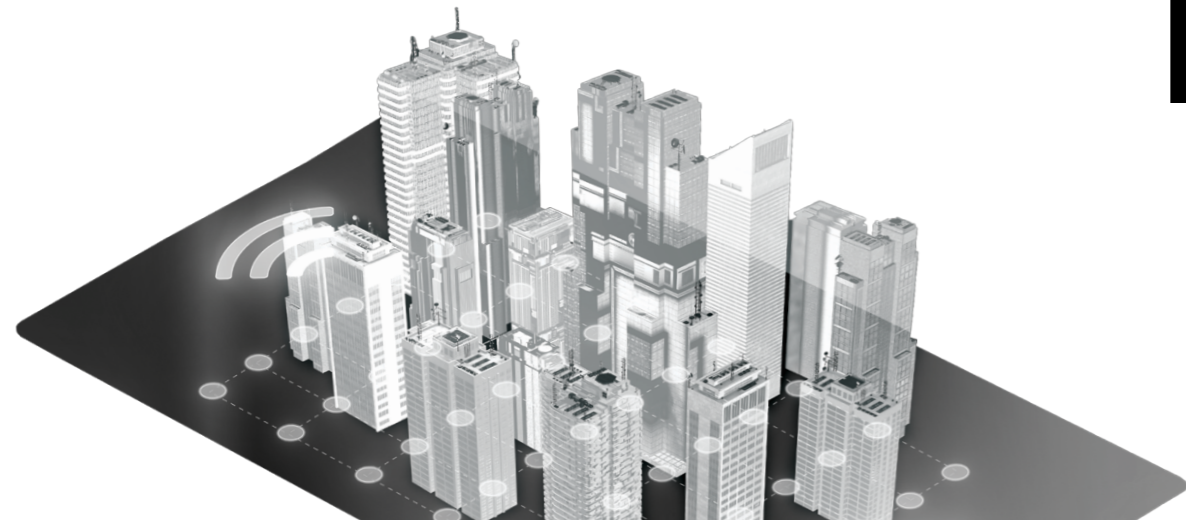
## TRAILBLAZING A BETTER WORLD BY DESIGN.

TRANSFORMING THE WAY WE LIVE: BETTER DESIGN WITH AI BY SUTD FACULTY AND STUDENTS

PREDICTION OF PASSENGER LOAD TO REDUCE FOOD CATERING WASTAGE

Creating a data analytics dashboard with the use of Machine Learning models that forecast passenger loads, along with a food calculator that forecasts the amount required and estimates total cost.
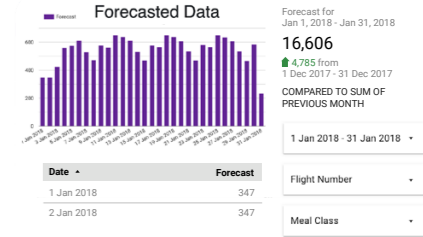
AI-DRIVEN ELECTRIC RACE CAR DESIGN

Meticulously designed and developed in Fusion 360 – a fusion of both Computer-Aided Design and Generative Design – this electric race car design is the culmination of extensive research, thorough scrutiny from every conceivable angle, and numerous iterations. Its final form has been fine-tuned and optimised, resulting in a sleek, powerful, and seamless appearance.
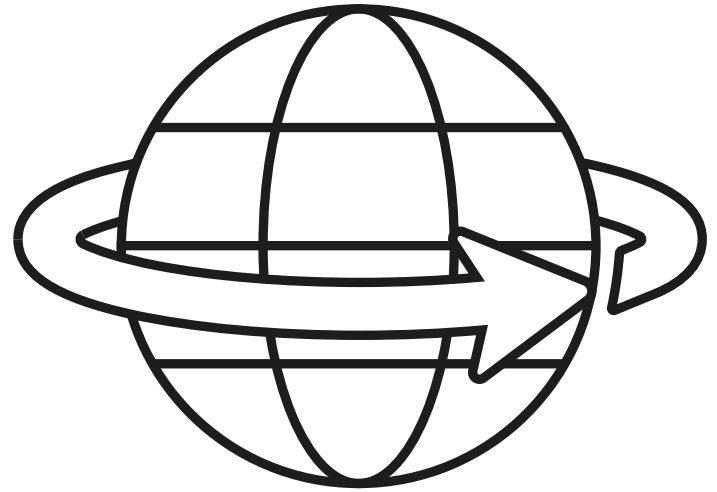
MODELLING OF CITY PLAN DESIGNS

Statistical data can be used to predict an outcome – a method known as predictive modelling. In urban planning, for example, demand for public trains can be forecast in order to create more efficient public transport deployment plans.
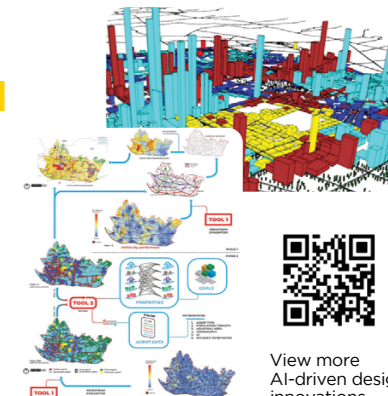
View more AI-driven design innovations

PREPARE TO TAKE ON THE WORLD

2 SPECIALISATIONS

HAVE THE FLEXIBILITY TO CUSTOMISE YOUR CURRICULUM WITH ONE OR MORE SPECIALISATIONS*. YOUR SPECIALISATION WILL BE REFLECTED ON YOUR TRANSCRIPT SO THAT EMPLOYERS RECOGNISE YOUR ADDITIONAL EXPERTISE. FIND OUT MORE AT DAI.SUTD.EDU.SG/SPECIALISATIONS

*Specialisations offered in a given year are subject to change. Choosing a specialisation is optional.

ENTERPRISE DESIGN

Gain skills and knowledge on design, manufacturing, sustainable engineering and business subjects which are required to make an enterprise successful in our fast-evolving world.

Ideal for those who wish to lead transformational innovations within organisations.

HEALTHCARE DESIGN

Discover how to design healthcare products and services with artificial intelligence and be equipped with fundamental knowledge in medical technologies to develop the next generation of healthcare solutions.

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