Unlike most computer science-focused programmes, Design and Artificial Intelligence (DAI) focuses on better design with the help of AI. It dives into the application of AI-driven design across products, systems, services and built environments.

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

DAI students are designers and innovators who harness the power of AI to tackle both present and future challenges, improving design using AI across products, systems, services and the built environment.
DAI Core Subjects
- Applied Machine Learning
- Design Entrepreneurship
- Product Design Studio
- AI Applications in Design
- Human Computer Interaction and Design
- Service Design Studio
- Space Design Studio
- System Design Studio

Learning Outcomes of DAI Core

Multi-disciplinary 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.

Effective AI Deployment
Increases effectiveness in AI deployment.

In-depth Knowledge of Design Theories & Practices
Disrupt economies with your extensive know-how in design theories and practices.

Varying Composition in Design/Al/Business
Depending on the chosen electives, the composition could vary, for example
- AI component from 13% to 25%, or
- Design component from 19% to 31% or
- Business component from 2% to 8%

Design & AI Curriculum Composition (Example)
- AI 19%
- HASS 22%
- Capstone 6%
- Business 5%
- General 26%
- Design 22%

Minor Programmes
Minors offer you more choices and flexibility in pursuing your broader interests, equipping you with additional knowledge.

- Minor in Artificial Intelligence (AI)
- Minor in Design Innovation, Ventures and Entrepreneurship (DIVE)
- Minor in Healthcare Informatics (HI)
- Minor in Engineering Product (EP)
- Minor in Engineering Systems (ES)
- Minor in Information Systems (IS)
- Minor in Digital Humanities (DH)
- Minor in Design, Technology and Society (DTS)

Minor Electives:
- Science and Technology for Healthcare
- Data Driven World
- Designing Energy Systems
- Spatial Design World

TERM 1
- Modelling & Analysis
- Physical World
- Computational Thinking for Design
- World Texts & Interpretations (HASS)

TERM 2
- Modelling Space & Systems
- Technological World
- Science for a Sustainable World
- Design Thinking & Innovation

TERM 3
- VACATION/ SUMMER PROGRAMME
- Modelling Uncertainty
- Theorising Society, Self & Culture (HASS)
- Any Two Electives*

TERM 4
- VACATION/ INTERNSHIP/ EXCHANGE
- Applied Machine Learning
- AI Applications in Design
- Human Computer Interaction and Design

TERM 5
- Space Design Studio
- System Design Studio

TERM 6
- AI/DI/Business Elective
- VACATION/INTERNSHIP/SUMMER PROGRAMME
- Capstone

TERM 7
- AI/DI/Business Elective
- Capstone

TERM 8
- Freshmore Subject
- Core Subject
- Capstone
- Elective
- Humanities, Arts & Social Sciences (HASS) Subject
- Artificial Intelligence (AI)
- Design Innovation (DI)
- Business

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

DRIVES BUSINESS INNOVATION AND GROWTH

The design innovation process improves operational efficiency, adds value and encourages competition as businesses strive to be relevant to market demands.

IMPROVE LIVES

Design is a user-centred innovation process that transforms products, services and experiences, improving lives.

ECONOMY

Why Design?

Design plays a critical role in the global paradigm shift from an industrial economy to an experience and knowledge-based economy...design actually helps improve lives.

Singapore Design 2025 Masterplan

WHY AI?

IN-DEMAND SECTOR

With 10,000 tech-related jobs expected to be created in the next three years and a new National AI Office to set the agenda for AI, be equipped with future-ready career skills to be highly sought after.

Strategy will position S’pore to

Hariz Baharudin

Singapore’s national plan to harness artificial intelligence (AI) technologies for social and economic benefits will position it to be a regional and global leader in AI, experts told The Straits Times.

They said Singapore’s new national AI strategy, announced yesterday by Deputy Prime Minister Heng Swee Keat, plays to the country’s strengths, such as its state-of-the-art infrastructure, effective governance and good education system.

Mr Greg Ursaworth, digital business leader at PwC Singapore, said the strategy shows Singapore is "clearly stepping up" in terms of building its reputation as a trusted regional digital hub, to develop impactful AI solutions that address economic and societal challenges.

"The effective and responsible adoption of AI as part of such a comprehensive framework, through practical sector-based initiatives, will bring real demonstrable benefits to Singapore and encourage the next phase of innovation," said Mr Ursaworth.

Echoing his point, Mr Andreas Ebert, Microsoft Corporation’s worldwide national technology officer, added that Singapore is already playing a global leading role in AI ethics and governance.

"The publication of the national AI strategy is evidence that Singapore is taking a holistic and inclusive approach (towards being) a fast adopter of best-in-class technology that is empowered by a focus on building national capabilities," he said.

As part of its nationwide strategy, the Government has announced national AI projects in five key areas: transport and logistics, smart cities and estates, healthcare, education, and safety and security.

The projects were chosen as they can deliver quick results, and have
DAI focuses on using AI to “better design” with an emphasis on application-based courses and design studios. By graduation, you would have a comprehensive portfolio of industry-inspired projects.

**AI DESIGN INNOVATION STUDIOS**
- Make connections between AI and design thinking methodologies
- Diverse exposure to industry sectors, working on real-world data via company-sponsored projects

**BUSINESS SUBJECTS**
- Understand commercial needs and the importance of value-creation

**HUMANITIES, ARTS AND SOCIAL SCIENCES (HASS)**
- Drive the understanding for ethics and social responsibility

**FLEXIBLE, CUSTOMISABLE CURRICULUM**
- Depending on the chosen electives, you will have a varying concentration in Design/AI/Business

**UNIQUE FEATURES OF DAI**

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Alibaba Group chief technology officer Jeff Zhang said Singapore’s national AI strategy and its ability to plan and meet national targets have affirmed the e-commerce giant’s decision to work closely with the nation.

Mr Zhang, who is also president of Alibaba Cloud Intelligence, said: “Singapore has consistently demonstrated its foresight and tenacity to fulfill (its) objectives, as demonstrated in its strong talent base and world-leading research institutions.” These factors, along with its good education system and effective government, stand Singapore in good stead to succeed in the AI space, experts said.

Professor Isaac Ben Israel, director of the Biovumk Interdisciplinary Cyber Research Centre in Tel Aviv University, said the national strategy will significantly improve the lives of all Singaporeans.

“With the right strategy, AI can transform national-level planning and significantly raise the quality of public goods like transport, education and healthcare, raise productivity, and enable the creation of valuable products and solutions for the Singapore market and beyond,” said Prof Ben Israel, who is also co-chair of the Israel National Task Force for AI.

What is unique about Singapore’s national AI strategy is that it is grounded in the “human element” that addresses the needs of the country and its people, according to Mr Benjamin Chiang, government and public sector leader at EY Singapore.

“Ultimately, the focus is on improving the lives of citizens and residents through creating value-added jobs and providing quality services that deliver better outcomes and experiences,” he said.

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Jolene Ang

Artificial intelligence (AI) technologies can benefit designers, if they know how to harness them. Statistical data can be used to predict an outcome—a method known as predictive modelling. In urban planning, for example, demand for public transport can be forecast in order to create more efficient public transport deployment plans.

To equip students with such skills, the Singapore University of Technology and Design (SUTD) has launched a new undergraduate degree in design and AI.

The three-year programme—the first of its kind in Singapore—will take in students in the academic year starting in May. SUTD said yesterday.

Students will be exposed to areas of design such as user interface/user experience, product, systems, built environment and data-driven design. Graduates from the programme will be able to work as data scientists and data visualisation specialists, in industries such as urban planning, product design and telecommunications, the university said.

SUTD president Chong Tow Chong said: “The recent announcements from Deputy Prime Minister Heng Swee Keat on the next steps in Singapore’s Smart Nation journey underscore the importance of artificial intelligence and the role it will play in bringing about social and economic benefits. “The main goal of the design and AI programme is to equip students with the ability to create human-centred design using data analysis and machine learning, which is AI-driven.”

Established in 2009, SUTD is the fourth autonomous university in Singapore and focuses on engineering, innovation and design.

In terms of entry requirements, students should generally be competent in mathematics and the sciences. Of the A level students who were offered places last year, nearly all had taken mathematics at the H2 level, and eight in 10 scored at least a B. Nearly all had also taken either physics or chemistry, or both, at the H2 level, and nearly seven in 10 scored at least a B for either of both subjects.

Hong Pioneer Junior College graduate Michael Hoon, 18, who read H2 maths, further maths and physics, and also took an H3 physics module offered by Nanyang Technological University, is interested in the new programme.

“I’ve always been interested in maths and science since I was young, for the most part because of exposure from school teachers and research on a lot of information online,” he said.

“Both subjects are visibly all around us and pretty much serve as the foundation of our survival and development, and being able to apply and integrate the theoretical modelling we have learnt in our daily lives is pretty interesting too.”

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SUTD’s new DAI programme has a unique course structure that focuses on the design and application of the latest AI technologies to solve problems and improve quality of life. With Singapore’s goal of becoming a Smart Nation, design and AI would be an important asset to achieve that goal, especially in digitisation.

Michael Hoon
Jurong Pioneer Junior College Alumnus

SUTD’s new programme will equip students with much needed complementary skills in design and AI. This gives them an edge to impact the world.

Dr Terence Hung
Chief of Future Intelligence Technologies, Rolls-Royce

The DAI looks to me an excellent programme to generate the future AI talent for business and consultancy.

Mr Hong Cao
Head of Data Science, Ernst & Young LLP

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.

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

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

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

Examples of DAI graduates’ job titles:

- AI solutions architects
- Product/system/service manager
- Product/system/service designer
- User-experience (UX) or user-interface (UI) designer
- Data visualisation specialist
- Business intelligence developer
- Business analyst
- AI engineer

DAI is the first university course that combines design and AI. Its versatility creates opportunities to cater to the needs of all sorts of industries in Singapore. Plus, DAI will help us to be proficient with the skills needed to shape and grow the future of these industries.

Soh Yao Hui
Nanyang Polytechnic Alumnus

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 BETTER DESIGN WITH AI
by SUTD faculty and students

Prediction of Vehicle Activities

Machine learning is used to improve an existing survey to collect mobility data for commercial vehicles. Various temporal, sequential, contextual and environmental features are used for activity prediction.

AI Driven Car Design

The “Flintstone Car” is developed in Fusion 360, a combination of both Computer-Aided Design (CAD) and Computer-Aided Styling (CAS). Evaluate the design from every possible angle, explore possible prototyping options and optimise the design for final fabrication.

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.