DESIGN AND ARTIFICIAL INTELLIGENCE
Forging a new concept in design innovation with AI technologies, the Design and Artificial Intelligence (DAI) programme focuses on better design with the help of AI and aims to nurture a new breed of talents with these specific skills. A major focus is on 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.

**OVERVIEW**

Design goes beyond aesthetics – it transforms the way we live. The power of design is deeply rooted in understanding the human experience and needs, and then creating innovative products, services and systems to meet and improve them. That’s why forward-thinking companies and nations are investing heavily in design to drive innovation and growth.

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.

Graduate with a Bachelor of Science in Design and Artificial Intelligence.
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.

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.

Specialisations
Choosing a specialisation is optional and gives you further flexibility to customise your DAI curriculum according to your interests and aspirations. You are expected to discuss your elective choices with faculty members. Your specialisation will be reflected on your transcript so that future employers can recognise this expertise.

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.

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.

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

- 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 Computer Science (CS)
- Minor in Digital Humanities (DH)
- Minor in Design, Technology and Society (DTS)

Curriculum including specialisations offered are subject to change. Visit dai.sutd.edu.sg for updates.
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?

Strategy will position S’pore to...

The projects were chosen as they can deliver quick results, and have

The Straits Times | Friday, November 2, 2018

The Straits Times | Thursday, November 14, 2019
UNIQUE FEATURES OF DAI

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

Example of a Service Design Studio Project with dnata:
Creating a data analytics dashboard with the use of Machine Learning models that forecasts carrier loads, along with a food calculator that forecasts the amount required and estimates total cost.

be a global leader in AI: Experts

high social and economic impact. 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 Blavatnik Interdisciplinary Cyber Research Centre at 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 Singaporean 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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SUTD launches new degree in AI and design

Joelene 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 3½-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 this 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 subject.

SINGAPORE Polytechnic graduate Michael Hoon, 18, who took 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 to school teachers and research on a lot of information online,” he said.

“Both subjects are visible 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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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:
- Design innovator
- Innovation strategist
- Product/system/service designer
- Business intelligence developer
- Data visualisation specialist
- Data scientist
- Applied machine learning engineer
- User experience (UX) designer
- User interface (UI) designer

INDUSTRY ENDORSEMENT

The students were proactive and were able to find and create solutions on their own. They worked well together, understood the brief and came out with a good product!

Monstyr Pte 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!

DBS Bank Ltd

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

P&G Singapore

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.

dnata Singapore Pte Ltd

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 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.