DAI
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.

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
- Algorithms
- AI Applications in Design
- Product Design Studio
- Applied Machine Learning
- Human Computer Interaction and Design
- Service Design Studio
- Design Entrepreneurship
- Spatial 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, you have the flexibility to vary your concentration in Design/Al/Business.

DAI Curriculum

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<td>TERM 1</td>
<td>Modelling &amp; Analysis</td>
<td>Physical World</td>
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<td>Computational Thinking for Design</td>
<td>World Texts &amp; Interpretations (HASS)</td>
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<td>Theorising Society, Self &amp; Culture (HASS)</td>
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*Term 3 Electives: Science and Technology for Healthcare, Data Driven World, Designing Energy Systems, Spatial Design World

Minor Programmes
DAI students will have the option to read a Minor, equipping you with additional knowledge and greater flexibility in pursuing broader interests. Some relevant Minor Programmes for DAI students include Minor in Digital Humanities (DH) and Minor in Engineering Systems (ES).

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

Economist and informatician Ian Kluitenberg and communications designer Karen Khoo blog on why design plays a critical role in the digital age.

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 Ursworth, 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 Ursworth.

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...
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

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

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 Bioimagination Interdisciplinary 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 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 Ben Israel, 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.
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

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
EXAMPLES OF BETTER DESIGN WITH AI

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.