NUS ECE empowers you for a career in

Artificial Intelligence (AI) & Data Engineering

Artificial Intelligence (AI) involves machines which are capable of sensing, reasoning, learning and acting on their own. The field has matured to the point where AI is transforming the way things are done in many areas of society and industry. Companies and organisations which can successfully leverage AI in their products and services are expected to gain a significant competitive advantage.

Generally, AI requires the processing of large amounts of data in order to train a variety of models. This is where **data engineering** comes in. Data engineers build tools, infrastructure, frameworks and services which allow them to derive insights from the myriad of data streams being generated. They collect, curate, analyse and visualise data in all its forms for intelligent decision making and sense-making.

NUS ECE has produced award-winning work such as photo-realistic multi-view image generation, 3D face rendering from a single 2D photo and automatic speech recognition for SCDF 995 calls that have been featured in the news.

The **B.Eng.(Electrical Engineering)** programme provides a suite of modules, projects and internship opportunities to prepare you for an exciting and rewarding career in this industry.

Representative Modules and Related Programmes

EE2211 Machine Learning
EE3731C Signal Processing
EE4211 Data Science for the Internet of Things
EE3801 Data Engineering Principles
EE4305 Fuzzy/Neural Systems
EE4704 Computer Vision & Image Processing
EE4212 Computer Vision
EE4802 Learning from Data
EE5907 Pattern Recognition
EE5934 Deep Learning
EE5731 Visual Computing

Specialisation in Internet of Things
Specialisation in Robotics
Minor in Data Engineering
Second Major in Data Analytics
Minor in Artificial Intelligence
Minor in Business Analytics

Students who perform well in selected modules will obtain a **Certificate in Artificial Intelligence & Data Engineering**.

Projects

Students will have the opportunity to work on leading edge projects in the fields of AI and Data Engineering. Examples of current projects are machine learning for healthcare applications, visual localization for UAV using deep learning, behavioural predictions using individual brain responses to naturalistic stimuli, predictive maintenance using reinforcement learning, modelling consumer behaviour through social media posts, sensing through walls using radar and machine learning and deep learning for semi-supervised anomaly detection in videos. These projects are supported by state-of-the-art equipment such as graphics processing unit (GPU) accelerated computers.

Internships

Examples of companies and organisations offering internships in these fields to NUS ECE students are Centre for Strategic Infocomm Technologies (CSIT), Pensees, A*STAR, Defence Science and Technology Agency (DSTA), Micron Semiconductor Asia and Rolls-Royce Singapore. In the future, there will be opportunities at AI Singapore and Yitu. Other than these, students can pursue internships overseas under the NUS Overseas Colleges (NOC) programme.

Job Prospects

Artificial intelligence is one of the most exciting and attractive fields to get into. The global machine learning (ML) market is estimated to grow from $1.9 billion in 2017 to $12.2 billion by 2022. AI is projected to create 2.3 million related jobs by 2020, according to Gartner. A degree from NUS ECE puts you in an excellent position to secure employment after graduation. The starting salaries of our graduates are at the top end of salaries for engineering graduates in Singapore.

Visit NUS ECE website at https://cde.nus.edu.sg/ece/ to find out more