The Master of Technology in Knowledge Engineering programme has prepared me both in terms of technical capability and business thinking, and it has helped me to kickstart a rewarding and fruitful career in Data Science!

David Low, Singapore
Data Chief Scientist and Co-Founder, Pand.ai Singapore
Master of Technology in Knowledge Engineering (MTech KE)*
Class of 2016

* The MTech in Intelligent Systems is a new programme that replaces the MTech in Knowledge Engineering.

The Institute of Systems Science (NUS-ISS)

Established in 1981, the Institute of Systems Science at the National University of Singapore (NUS-ISS) develops digital talent for the industry through graduate education, professional development programmes, consultancy, applied research and career services. NUS-ISS is widely recognised as a champion of the national SkillsFuture movement, enabling a digital economy that is always learning and always leading.

NUS-ISS has implemented a unique portfolio of multiple learning pathways, with a wide spectrum of programmes in critical industry disciplines such as software development, data science, artificial intelligence, cybersecurity, smart health, digital government and digital innovation.

To date, over 120,000 infosec & business professionals, 6,800 corporate customers and 5,500 post-graduate alumni members have benefitted from NUS-ISS’s suite of services. Its programmes are delivered by ISS staff with an average of more than 20 years of industry experience.
The NUS Master of Technology in Intelligent Systems programme provides you with the concepts, techniques and methods of Artificial Intelligence, and their application to the development of Intelligent Systems applications.

The programme inculcates the essential knowledge and practical skills needed for students to lead the development of Intelligent Systems that provide effective and optimal business solutions for their organisations.

### Programme Delivery

MTech IS candidates must successfully complete 2 mandatory certificates from the fundamental areas, any 2 of 4 certificates from the specialist areas as well as complete a capstone project. Students are evaluated through a combination of course work, project work and examinations.

### Who Should Apply

- Software developers, business analysts, domain experts, scientists, and engineers, who wish to be able to design and build systems that utilise Artificial Intelligence and other Smart Systems techniques.
- Professionals who are in, or are looking to enter, the following careers:
  - Artificial Intelligence Specialist
  - Machine Learning Specialist
  - Intelligent Systems Specialist
  - Robotic Systems Developers
  - Big Data/Internet of Things System Developers
  - Smart City Applications Developers
  - Test Mining/Analytics Specialist
- Autonomous Vehicles Developers
- Vision and Sensor Systems Developers
- A.I. Business System Developers
- Intelligent Process Automation Developers
- Intelligent Healthcare System Developers
- Language System Engineers

### How To Apply

All applicants are required to apply online via the Graduate Admission System (Coursework). Come and find out more about the MTech programmes at our info sessions.

Visit www.is.s.nus.edu.sg/graduate-programmes for more details. We conduct in-country entrance tests and interviews in selected countries.

### Admission Criteria

- Bachelor’s degree preferably in Science or Engineering and a grade point average of at least B
- Proficiency in the English Language (written & spoken)*
- Have passed an entrance test
- Preferably two years relevant working experience
- IT, engineering and scientific professionals preferable
- Candidates with relevant IT degrees, with good academic records and good practical software development knowledge, may be granted a work experience waiver
- Have received a favourable assessment at admissions interview conducted by NUS-ISS

*Applicants whose native tongue and medium of university instruction is not in English should submit their TOEFL or IELTS score as evidence of the proficiency in English.

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<thead>
<tr>
<th>TOEFL</th>
<th>IELTS</th>
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<tbody>
<tr>
<td>Paper-based test (550)</td>
<td>Result of 6.0</td>
</tr>
<tr>
<td>Computer-based test (237)</td>
<td>Internet-based test (85)</td>
</tr>
</tbody>
</table>

### Capstone Project in Artificial Intelligence

Student projects for MTech IS students include 3 months of full-time engagement with the industry for full-time students, and 6-12 months for part-time students. Students are allowed to conduct their project as a team-based internship, if desired. The expected commitment for the project is a minimum 30 man-days per team member.

### Learning Outcomes

- Acquire the skills needed to be part of a team building intelligent systems capable of problem solving across varied business and scientific/engineering domains.

### Job Roles

- Artificial Intelligence Engineers
- Machine Learning System Developers
- Cognitive Systems Developers
- Pattern Recognition System Developers
- Machine Learning Application Specialists
- Deep Learning Application Developers

### Learning Outcomes

- Acquire the skills needed to develop advanced robotics and automation systems required for Industry 4.0. These include designing cooperative robot systems and developing mobile and autonomous systems.

### Job Roles

- System Developers
- Human-Robot Collaboration Specialists
- Robot Personal Assistant Developers

### Learning Outcomes

- Acquire the skills necessary to build intelligent software agents that can act on behalf of humans in commercial and business transactions, as well as automate business processes.

### Job Roles

- Vision System Developers
- Sensor Processing Specialists
- Smart City Application Developers
- A.I. Business System Developers
- Intelligent Process Automation Developers
- Intelligent Personal Assistant Developers

### Learning Outcomes

- Acquire advanced skills in practical language processing. This includes text analysis, text analytics, deep learning techniques and their application in sentiment mining and building chatbots.

### Capstone Project (Part-time, 6-12months)

<table>
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<tr>
<th>Capstone Project (Part-time)</th>
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<tr>
<td>Learning Outcomes:</td>
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<tr>
<td>Produce high quality intelligent systems following industry’s best practices and methodologies</td>
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<tr>
<td>Become proficient in the use of knowledge and data engineering tools and techniques in order to deliver optimal business value</td>
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</tbody>
</table>

Visit www.is.s.nus.edu.sg/stackable-programmes to find out more.

### Stackable Certificate Programme in Artificial Intelligence

The Master of Technology in Intelligent Systems is also available as Stackable Certificate Programme in Artificial Intelligence. With this programme, Professionals, Managers and Executives (PMEs) can attain a series of NUS-ISS graduate certificates over a period of five years without disrupting your careers. You will have the flexibility of studying at your own pace by taking the required modular courses that make up the certificates to meet your needs. PMEs who do not wish to attain a certificate, graduate diploma or degree can continue to attend individual modular courses thus allowing you to gain the skills to meet your career needs.