Overview

Artificial Intelligence (AI), once simply a branch of computing research, has over the last decade moved into the mainstream of computational problem solving techniques. Many systems, from search engines to financial systems and health systems employ AI techniques such as machine learning. While true 'intelligence' via computers is still remote, AI techniques are increasingly being used to enhance the performance of a vast range of existing systems, and to enable new applications, especially those involving large amounts of data.

In many applications (e.g. driverless vehicles), AI allows existing systems to work with less and less manual intervention. As autonomous devices become more common, potential employers include companies that can make ready use of automation. This includes companies concerned with home and office automation, entertainment companies and autonomous systems research and development. Autonomous systems and the sophisticated sensors they employ are also adopted in many industries to enhance production and to improve safety (e.g. mining, manufacturing, transport).

This stream introduces students to the foundations of artificial intelligence and the core technologies (machine learning, knowledge representation) that are required to apply AI in the real world.
Faculty
Faculty of Engineering

School
School of Computer Science and Engineering

Study Level
Undergraduate

Minimum Units of Credit
96

Specialisation Type
Major
Available in Program(s)

Program(s) in which this major is available

Bachelor of Science - BSc
3778 Computer Science
Faculty: Faculty of Engineering
Campus: Kensington
Units of Credit: 144
Typical Duration: 3 Years
### Specialisation Structure

Students must complete 96 UOC.

### Core Courses

Students must take 72 UOC of the following courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>UOC</th>
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<tbody>
<tr>
<td>COMP1511</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Programming Fundamentals</td>
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<tr>
<td>COMP1521</td>
<td>6</td>
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<tr>
<td></td>
<td>Computer Systems Fundamentals</td>
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<tr>
<td>COMP1531</td>
<td>6</td>
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<tr>
<td></td>
<td>Software Engineering Fundamentals</td>
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<tr>
<td>COMP2511</td>
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<tr>
<td></td>
<td>Object-Oriented Design &amp; Programming</td>
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<tr>
<td>COMP2521</td>
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<tr>
<td></td>
<td>Data Structures and Algorithms</td>
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<tr>
<td>COMP3411</td>
<td>6</td>
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<td></td>
<td>Artificial Intelligence</td>
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<tr>
<td>COMP3900</td>
<td>6</td>
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<td>Computer Science Project</td>
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<td>COMP4920</td>
<td>6</td>
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<td></td>
<td>Management and Ethics</td>
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<thead>
<tr>
<th>Course</th>
<th>UOC</th>
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</thead>
<tbody>
<tr>
<td>MATH1081</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Discrete Mathematics</td>
</tr>
</tbody>
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One of the following:
MATH1131 | 6 UOC
Mathematics 1A

MATH1141 | 6 UOC
Higher Mathematics 1A

One of the following:
MATH1231 | 6 UOC
Mathematics 1B

MATH1241 | 6 UOC
Higher Mathematics 1B

One of the following:
COMP3121 | 6 UOC
Algorithms and Programming Techniques

COMP3821 | 6 UOC
Extended Algorithms and Programming Techniques

**Artificial Intelligence Prescribed Electives**

Students must take at least 18 UOC of the following courses.

COMP3431 | 6 UOC
Robotic Software Architecture

COMP4418 | 6 UOC
Knowledge Representation and Reasoning

COMP9318 | 6 UOC
Data Warehousing and Data Mining

COMP9417 | 6 UOC
Machine Learning and Data Mining

COMP9418 | 6 UOC
Advanced Topics in Statistical Machine Learning
Computing Electives

Students must complete 6 UOC of Computing courses (COMP3xxx or higher).

any level 3 Computer Science course

any level 4 Computer Science course

any level 6 Computer Science course

any level 9 Computer Science course

Enrolment Disclaimer

Unless advised otherwise by your program authority, you should follow the rules for the handbook for the year you commenced your program. You are also responsible for ensuring you enrol in courses according to your program requirements. myUNSW enrolment checks that you have met enrolment requirements such as pre-requisites for individual courses but not that a course will count towards your program requirements.
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Pre-2019 Handbook Editions