



# National Programme MSc in Artificial Intelligence

An exciting new two-year part-time programme to give current and potential AI engineers the skills, theory and recognition they need to develop in their role. Candidates can gain a full MSc degree in this specialist area through a mixed learning process with an emphasis on practical application in the workplace.

## Programme Aim

The programme will equip participants with a knowledge-base and an advanced skillset to enable them to become highly capable experts for this strategically important sector which will in turn have a positive impact on the Irish economy. The programme is industry-led and is being developed with the support of a range of companies working in this field in Ireland. Skillnet Ireland is funding most of the development costs and the delivery costs will be part-funded both by Skillnet Ireland and the participating companies.

## Programme Outline

The programme will run for two-years part-time, delivered primarily via on-line lectures, supported with tutorials, assignments and some on-campus workshops. Assessment is largely based on assignments and project work with a practical rather than theoretical focus. Modules will be delivered as discrete entities with associated assessment of mastery so that Semester by Semester there is a confirmed and measurable achievement of learning objectives that can be transferred directly and immediately to the workplace.

Participants must complete the preparatory Certificate course, to the equivalent of a 2<sup>nd</sup> class honours level, for eligibility to entry the Masters regardless of their prior qualifications or experience. Successful completion of the preparatory Course will lead to the award of a Certificate in Artificial Intelligence by UL. The Masters is a major award at Level 9 of the NFQ with 90 ECTS credits (60 taught and 30 project).

| Certificate in Artificial Intelligence   | Masters in Artificial Intelligence  |  |
|--|---|--|
| <p><b>Year 1</b></p> <p>14 weeks (Sep-Dec)</p> <ul style="list-style-type: none"> <li>• Introduction to Scientific Computing For AI</li> <li>• Introduction to Deep Learning and Frameworks</li> </ul> | <p><b>Year 1</b></p> <p><b>SEMESTER 1 15 Weeks (Jan-May)</b></p> <ul style="list-style-type: none"> <li>• Artificial Intelligence and Machine Learning</li> <li>• Data Analytics</li> <li>• Advanced Topic Seminars and Project Identification</li> </ul> <p><b>SEMESTER 2 6 Weeks (May-Jun)</b></p> <ul style="list-style-type: none"> <li>• Research Methods and Project Specification</li> <li>• Risk, Ethics, Governance and Artificial Intelligence</li> </ul> | <p><b>Year 2</b></p> <p><b>SEMESTER 3 15 Weeks (Sep-Dec)</b></p> <ul style="list-style-type: none"> <li>• Machine Vision</li> <li>• Machine Learning Applications</li> </ul> <p><b>SEMESTER 4 15 Weeks (Jan-May)</b></p> <ul style="list-style-type: none"> <li>• Deep Learning</li> <li>• Data Science</li> <li>• Theory and Practice of Advanced AI Ecosystems</li> </ul> <p><b>SEMESTER 5 6 Weeks (May-Jun)</b></p> <ul style="list-style-type: none"> <li>• Project and Dissertation – AI</li> </ul> |

## Programme Partners

The **University of Limerick** (UL) won the tender to develop and deliver this new national MSc in Artificial Intelligence (AI) and the first intake commenced in September 2018. The programme is delivered predominantly online with some intensive workshops delivered in group sessions at sites designated by the College. In addition to the Masters course a short intensive 14 week fast-track Certificate in AI course has been developed and delivered by UL in collaboration with the Irish Centre for High-End Computing (ICHEC), Ireland's national centre for High Performance Computing.

## Origination

This initiative has emerged from needs expressed by member companies of Technology Ireland ICT Skillnet augmented by research and data from IDA Ireland, Enterprise Ireland, Science Foundation Ireland and others. AI is already at the heart of many transformational business and technical applications, typically employing a combination of data analytics and machine learning. AI applications using massive datasets, powerful computing architectures and advanced learning algorithms are contributing to business growth and societal benefit in fields such as Health, Education, Finance, Telecommunications, Leisure and Transport. New AI-enhanced services for communication, information, entertainment and social convenience are fundamentally altering the way in which society functions. This trend is set to continue and accelerate.

Companies that have supported the content development of this course include: Accenture, Advanced Metadata, Analog Devices, Citibank, Dell EMC, Emdalo Technologies, Ericsson, IBM, iMage Vision, Jaguar Land Rover, Movidius an Intel Company, Microsoft, Nokia Bell Labs, Soapbox Labs, and Valeo Vision Systems.

## Entry Requirements

The programme is aimed at existing information technology professionals, and those migrating from associated disciplines with the necessary computing and mathematics competencies.

The principal entry requirement for both the Masters course and the Certificate Course is a Level 8 honours degree, at minimum second class honours (NFQ or other internationally recognised equivalent), in a relevant engineering, computing, mathematics, science or technology discipline. Applicants from other disciplines who have a significant mathematics or computing (i.e. programming) element in their primary degree will also be considered.

Applicants who possess an honours undergraduate degree, at minimum second-class honours, or equivalent in a non-numerate discipline and have a minimum of three years experiential learning in an appropriate computing discipline (with a high level of either mathematics or programming) may also apply. Their admission to the program will be determined by the University of Limerick.

Applicants who do not meet the requirements above may be considered under the University of Limerick policy that allows for the recognition of Prior Learning, both formal and informal/experiential learning; nonaccredited personal and professional education; and work based training. As this is a highly technical Masters course such applicants must have sufficient competence in mathematics and computer programming to be able to participate. The University of Limerick has sole discretion and is the final arbiter of entrants.

## Applying and Further Information

**The closing date for 2019 entrants is the 28<sup>th</sup> June 2019.**

Full details of the application process, eligibility, etc. are available at:

<https://www.ictskillnet.ie/training/launch-national-msc-artificial-intelligence/>

Please email any queries to Technology Ireland ICT Skillnet at [info@ictskillnet.ie](mailto:info@ictskillnet.ie)

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An Roinn Oideachais agus Scileanna  
Department of Education and Skills

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