INTEGRATED MACHINE LEARNING SYSTEMS MSc / 2019/20 ENTRY

www.ucl.ac.uk/graduate/
Integrated Machine Learning Systems MSc /

This MSc Programme teaches how to engineer the machine learning systems that will form the basis of our economies, society and industry in the next few decades. It offers students the know-how necessary to pursue a wide variety of careers in the general field of integrated machine learning systems engineering in start-ups, well-established companies, or indeed research.

Degree summary

Students will learn about the principles of data acquisition including the sensors and devices used to capture the data; the principles of data analysis; machine learning technology; and the infrastructure used to transport, store, secure, and process data. Students will therefore also learn how to put together integrated systems that can acquire, process, and analyse data.

// The MSc programme offers students a holistic view about machine learning technology, encompassing both the principles and practice of data acquisition, data analysis, and the infrastructure used to transport, store, secure and process data.

// This MSc programme also offers students a wide range of hardware, software, and system skills, allowing them to develop upcoming machine learning systems supporting our economies and societies.

// This MSc programme is delivered by world-leading academics in their respective fields, and is supported by state-of-the-art facilities and laboratories at the Electronic and Electrical Engineering Department at UCL.

The programme will be delivered through a combination of formal lectures, seminars, laboratories, workshop sessions, and independent or group work. The MSc programme assesses students in a number of ways including exams, coursework, group work, dedicated exercises and a research dissertation.

Degree structure

Mode: Full-time: 1 year; Part-time: 2 years; Flexible: up to 5 years
Location: London, Bloomsbury
Full-Time Duration: The programme takes one year to complete.
Part-Time Duration: The programme takes two years to complete.
Flexible: The programme takes a maximum of five years to complete.

The programme encompasses 180 credits. Students undertake six compulsory modules, two optional modules, a compulsory dissertation, and a compulsory non-credit bearing Professional Development Skills module. The programme consists of six compulsory modules (90 credits), two optional modules (30 credits) and a compulsory dissertation (60 credits). The programme also encompasses a compulsory non-credit bearing Professional Development Skills module.

Please note that the list of modules given here is indicative. This information is published a long time in advance of enrolment and module content and availability is subject to change.

COMPULSORY MODULES

// Students undertake the following compulsory modules:
// Applied Machine Learning Systems I
// Applied Machine Learning Systems II
// Data Acquisition and Processing Systems
// Cloud, Data Centres and Edge-Computing
// Security and Privacy
// Seminars in ‘Emerging Topics in Integrated Machine Learning Systems’

OPTIONAL MODULES

// Students undertake two out of the four following optional modules:
// Internet of Things
// Internet Multimedia Systems
// Introduction to IP Networks

Optional modules are also complemented by a compulsory non-credit bearing Professional Development Skills module that will deliver students research, writing, and presentation skills.

DISSERTATION/REPORT

// All students undertake an independent research project which culminates in a dissertation of approximately 12,000 words. All students are also due to make a presentation mid-way through their independent research project.

The students are expected to have their own computer/laptop, in order to carry out independent study and programming assignments.
Your career

It is expected that the MSc will deliver professionals in the general field of integrated machine learning systems engineering that can be recruited by the burgeoning industry in the area, such as emerging start-ups or well-established companies that need to recruit engineers with the necessary skills to set-up systems to make sense of data.

It is also expected that the MSc will deliver researchers that are well positioned to continue further doctoral studies.

Employability

Students will acquire a wide range of theoretical and practical knowledge and skills in the general area of integrated machine learning systems, including in data acquisition, data analysis, and the infrastructure used to transport, store, secure and process data.

In particular, students will be exposed both to the principles and practice of machine learning systems, including the hardware, software and network components underpinning such systems.

Students will therefore be well positioned to pursue a wide range of careers in industry or academia upon completion of this programme.
Entry requirements

A minimum of an upper second-class Bachelor’s degree in electronic and electrical engineering, computer science, and related fields from a UK university or an overseas qualification of an equivalent standard.

Basic knowledge (e.g. at UK 2:1 standard in relevant undergraduate-level modules) of programming languages (such as C, C++, Python, Java, or similar) is required. Basic knowledge of mathematics (e.g. at UK 2:1 standard in relevant undergraduate-level modules) is also required in algebra, analysis, probability, or statistics. Applicants must show an interest in developing thinking and problem-solving skills.

English language proficiency level

If your education has not been conducted in the English language, you will be expected to demonstrate evidence of an adequate level of English proficiency.

The level of English language proficiency for this programme is: Standard.

Information about the evidence required, acceptable qualifications and test providers is provided at: www.ucl.ac.uk/graduate/english-requirements

Your application

When we assess your application we would like to learn:

- why you want to study Integrated Machine Learning Systems at graduate level
- why you want to study Integrated Machine Learning Systems at UCL
- what particularly attracts you to the chosen programme
- how your academic and professional background meets the demands of this challenging programme
- where you would like to go professionally with your degree.

Together with essential academic requirements, the personal statement is your opportunity to illustrate whether your reasons for applying to this programme match what the programme will deliver.

The MSc programme is accessible to students with a minimum of an upper second-class Bachelor’s degree in Electronic and Electrical Engineering, Computer Science, Mathematics, Statistics and related fields from a UK university of an overseas qualification of an equivalent standard.

Knowledge in programming languages is required. Basic knowledge in mathematics is required in algebra, analysis, probability or statistics. Standard UCL English Language requirements are also required.

There is an application processing fee for this programme of £75 for online applications and £100 for paper applications. Further information can be found at: www.ucl.ac.uk/prospective-students/graduate/taught/application.

FEES AND FUNDING 2019/20 ENTRY

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<th>Category</th>
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The tuition fees shown are for the year indicated above. Fees for subsequent years may increase or otherwise vary. Further information on fee status, fee increases and the fee schedule can be viewed on the UCL Students website.

Fees for flexible, modular study are charged pro-rata to the appropriate full-time Master's fee taken in an academic session.

The Institution of Engineering and Technology (IET) awards competitive scholarships for postgraduate study, for details visit www.theiet.org

Please visit the UCL Electronic and Electrical Engineering Scholarships website for more information on funding.

Full details of funding opportunities can be found on the UCL Scholarships website: www.ucl.ac.uk/scholarships

APPLICATION DEADLINE

All applicants: 26 July 2019

Details on how to apply are available on the website at: www.ucl.ac.uk/graduate/apply

CONTACT

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EU referendum

For up-to-date information relating to specific key questions following the UK’s decision to leave the EU, please refer to www.ucl.ac.uk/brexit