LONDON'S GLOBAL UNIVERSITY

UCL

MACHINE LEARNING MSc / 2021/22 ENTRY

ucl.ac.uk/graduate
The Machine Learning MSc at UCL is a unique programme that provides an excellent environment to study the subject. The programme introduces the computational, mathematical and business views of machine learning.

**Degree summary**

Students develop an understanding of the principles underlying the development and application of new techniques in this area, alongside an awareness of, and ability to analyse the range and scope of algorithms and approaches available, and design, develop and evaluate appropriate algorithms and methods for new problems and applications.

- UCL Computer Science is recognised as a world leader in teaching and research, and our Master’s programmes have some of the highest employment rates and starting salaries.
- We take an experimental approach to our subject, enjoy the challenge and opportunity of entrepreneurial partnerships and place a high value on our extensive range of industrial collaborations.
- This MSc is one of the few leading Master’s programmes entirely dedicated to machine learning. It combines a rigorous theoretical academic framework along with specific knowledge of a variety of application fields to fast-track your commercial career or to prepare for PhD research.

**Degree structure**

**Mode:** Full-time: 1 year  
**Location:** London, Bloomsbury

Students undertake modules to the value of 180 credits. The programme consists of one core module (15 credits), two to seven optional modules (30 to 105 credits), which must include Graphical Models or Probabilistic and Unsupervised Learning, up to five elective modules (0 to 75 credits), and a research project (60 credits).

Upon successful completion of 180 credits, you will be awarded a MSc in Machine Learning.

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**

- Supervised Learning (15 credits)
- MSc Machine Learning Project (60 credits)

**OPTIONAL MODULES**

Students must choose 75 to 90 credits from these optional modules. Students must take either Graphical Models or Probabilistic and Unsupervised Learning.

- Advanced Topics in Machine Learning (15 credits)
- Affective Computing and Human-Robot Interaction (15 credits)
- Applied Machine Learning (15 credits)
- Approximate Inference and Learning in Probabilistic Models (15 credits)
- Bioinformatics (15 credits)
- Graphical Models (15 credits)
- Introduction to Deep Learning (15 credits)
- Machine Learning Seminar (15 credits)
- Machine Vision (15 credits)
- Probabilistic and Unsupervised Learning (15 credits)
- Reinforcement Learning (15 credits)
- Statistical Natural Language Processing (15 credits)
- Electives (choose 15 to 30 credits)
- Computational Modelling for Biomedical Imaging (15 credits)
- Information Retrieval and Data Mining (15 credits)
- Inverse Problems in Imaging (15 credits)
- Multi-agent Artificial Intelligence (15 credits)
- Numerical Optimisation (15 credits)
- Robot Vision and Navigation (15 credits)
- Robotic Control Theory and Systems (15 credits)

**DISSERTATION/REPORT**

All MSc students undertake an independent research project which culminates in a dissertation of 10,000-12,000 words in the form of a project report.
**Teaching and learning**

The programme is delivered through a combination of lectures, seminars, class discussions and project supervision. Student performance is assessed through a combination of unseen written examination, coursework (much of which involves programming and/or data analysis), and the research project.

**Additional costs**

For more information on additional costs for prospective students please go to our estimated cost of essential expenditure at [Accommodation and living costs](#).

Students will require a modern laptop (PC or Mac). The minimum specifications should be 8GB RAM and 500GB SSD storage. The recommended specification is 16GB RAM, 0.5/1TB SSD storage and a dedicated high end graphics card. A laptop with the stated specifications will cost approximately £500-£1000. Some students run Linux on their PCs while others run Window’s with Linux Virtual Machines installed.

**Accessibility**

Details of the accessibility of UCL buildings can be obtained from [AccessAble accessible.co.uk](#). Further information can also be obtained from the UCL Student Support & Wellbeing team.

**Your career**

Graduates from this programme have an excellent employment record. Substantial sectors of UK industry, including leading, large companies already make extensive use of intelligent systems techniques in the course of their business activities, and the UK has a number of very successful developers and suppliers of the technology. Students also benefit from strong corporate and academic connections within the UCL Computer Science alumni network.

Graduates have taken machine learning research degrees in domains as diverse as robotics, music, psychology, and bioinformatics at the Universities of Basel, Cambridge, Edinburgh, Nairobi, Oxford and at UCL. Graduates have also found positions with multinational companies such as BAE Systems and BAE Detica.

**Employability**

Scientific experiments and companies now routinely generate vast databases and machine learning and statistical methodologies are core to their analysis. There is a considerable shortfall in the number of qualified graduates in this area internationally. Machine Learning graduates have been in high demand for PhD positions across the sciences. In London there are many companies looking to understand their customers better who have hired our graduates. Similarly graduates now work in companies in Germany, Iceland, France and the US, amongst other places, in large-scale data analysis. The finance sector has also hired several graduates recently.
Entry requirements

A minimum of an upper second-class UK Bachelor's degree in a highly quantitative subject such as computer science, mathematics, electrical engineering or the physical sciences, or an overseas qualification of an equivalent standard. Relevant work experience may also be taken into account. Additionally, candidates must be comfortable with undergraduate mathematics in areas such as linear algebra and calculus.

English language requirements

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: Good.

Information about the evidence required, acceptable qualifications and test providers is provided at:

[Link]

Your application

Students are advised to apply as early as possible due to competition for places. Those applying for scholarship funding (particularly overseas applicants) should take note of application deadlines.

When we assess your application we would like to learn:

- why you want to study Machine Learning at graduate level
- why you want to study Machine Learning at UCL
- what particularly attracts you to this programme
- how your academic and professional background meets the demands of this programme
- what programming experience you have
- 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.

There is an application processing fee for this programme of £90 for online applications and £115 for paper applications. Further information can be found at:

[Link]

Fees and funding 2021/22 entry

// UK: £16,000 (FT)
// Overseas: £31,200 (FT)

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: ucl.ac.uk/students/fees.

All full-time students are required to pay a fee deposit of £2,000 for this programme. All part-time students are required to pay a fee deposit of £1,000.

For more information about funding opportunities for Department of Computer Science postgraduate programmes, please see the departmental Scholarships page.

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

Application deadline

All applicants: 31 May 2021

Details on how to apply are available on the website at: ucl.ac.uk/prospective-students/graduate/taught-degrees/how-apply-step-step-guide

Contact

Mr Thomas Whitney, Teaching and Learning Administrator

Email: advancedmsc-admissions@cs.ucl.ac.uk

Telephone: +44 (0)20 3108 7148

UK withdrawal from the EU

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