The Machine Learning MSc at UCL is a truly unique programme and provides an excellent environment to study the subject. It introduces the computational, mathematical and business views of machine learning to those who want to upgrade their expertise and portfolio of skills in this domain.

**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.

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

**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), five to six optional modules (75 to 90 credits), one to two elective modules (15 to 30 credits), and a research project (60 credits).

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)

### 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 Deep Learning and Reinforcement Learning (15 credits)
- 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)
- Information Retrieval and Data Mining (15 credits)
- Introduction to Deep Learning (15 credits)
- Machine Vision (15 credits)
- Probabilistic and Unsupervised Learning (15 credits)
- Statistical Natural Language Processing (15 credits)
- Electives (choose 15 to 30 credits)
- Computational Modelling for Biomedical Imaging (15 credits)

Please note: the availability and delivery of optional modules may vary, depending on your selection.

### 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.
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 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: Good.

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

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 £75 for online applications and £100 for paper applications. Further information can be found at:
www.ucl.ac.uk/prospective-students/graduate/taught/application.