



Graduate Open **Events**

Machine Learning MSc

**Computational Statistics and Machine Learning
MSc**

Data Science and Machine Learning MSc

**Dr Dmitry Adamskiy, Programme Director, and
Andreas Argyriou, ML alumnus**



Schedule

- **Welcome**
- **Overview from Dr Dmitry Adamskiy, Programme Director (DSML)**
 - Why you should study these programmes
 - Who the programmes are designed for
 - Overview of modules, types of projects
 - Career outcomes
- **Reflections from alumnus, Andreas Argyriou**
- **Q&A**
- ***Please be aware this session is being recorded***

Overview of ML programmes (CSML, DSML, ML)

- Intensive programmes covering material related to foundational and applied **Machine Learning** and **Data Science**
- Emphasis of each programme is slightly different, depending on the module diet ¹
- All programmes contain a **research project** component
- MSc CSML is taught jointly with the Statistics Department and emphasises study of **Statistics** modules more heavily

¹ Availability and delivery of course diets may vary, depending on year and on your selection.

Overview of ML programmes (CSML, DSML, ML)

Requirements:

- Strong mathematical background, particularly in: Linear Algebra, Calculus, Probability & Statistics
- Strong desire to study Machine Learning related areas
- Basic coding proficiency (in a language such as Python, MATLAB, etc.)

Who is the MSc ML programme designed for?

- The Machine Learning MSc is very similar to the CSML MSc, except that it does not have the compulsory Statistics requirements. Students therefore have more flexibility to take CS modules in their areas of interest. Students may come from a variety of numerate backgrounds, for example computer science or physics, but all will be required to display a high degree of training (equivalent to roughly first year undergraduate) in university level mathematics.
- This MSc is ideal for students that may wish to continue in higher academic training, for example a PhD programme.

Who is the MSc CSML programme designed for?

- The CSML MSc provides students with a rigorous training in both the computational and statistical aspects of modern machine learning. The course is intended to take students with well-established backgrounds in core aspects of mathematics and statistics, with a proven record of training in these areas. Students may come from a variety of numerate backgrounds, for example computer science or physics, but all will be required to display a high degree of training (equivalent to roughly first year undergraduate) in university level mathematics, with at least one or ideally two additional modules in statistics.
- This MSc is ideal for students that may wish to continue in higher academic training, for example a PhD programme.

Who is the MSc DSML programme designed for?

- The DSML MSc has large similarities with the CSML MSc. However, the entrance requirements in terms of formal mathematics and statistics training is lower. Whilst students are expected to be mathematically competent, they are not expected to have a strong background in statistics. For example, students that have a strong computer science background (or may be currently working as developers) and wish to retrain as data scientists would find this an idea route.
- This MSc is ideal for students that would typically expect to take employment after graduating.

Overview of modules

- [Machine Learning MSc | Prospective Students Graduate \(ucl.ac.uk\)](#)
- [Computational Statistics and Machine Learning MSc | Prospective Students Graduate \(ucl.ac.uk\)](#)
- [Data Science and Machine Learning MSc | Prospective Students Graduate \(ucl.ac.uk\)](#)
- 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 are subject to change. Modules that are in use for the current academic year are linked for further information. Where no link is present, further information is not yet available.
- [Module catalogue | UCL Module Catalogue - UCL – University College London](#)

Course structure

MSc CSML/DSML/ML

- **8 Modules (x Core + (8-x) Optional)**
- Taught during Term 1 & Term 2
- Each worth 15 credits (120 credits in total)
- **Dissertation**
- (June), July, August, (September)
- Worth 60 credits

Terms 1 & 2

- Intense Teaching & Learning
- Multiple Group and Individual Coursework Assignments

Term 3

- Exams
- Followed by dissertation period

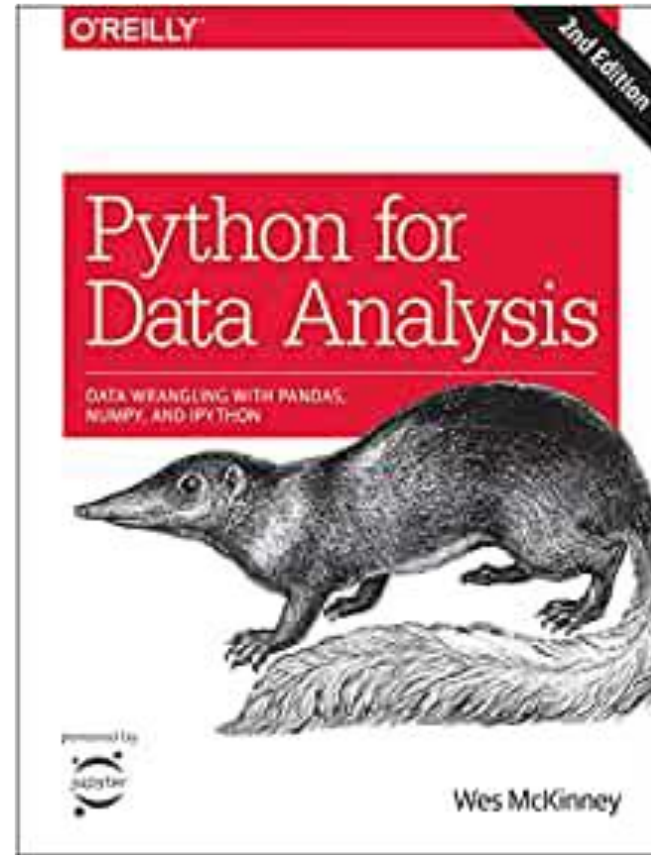
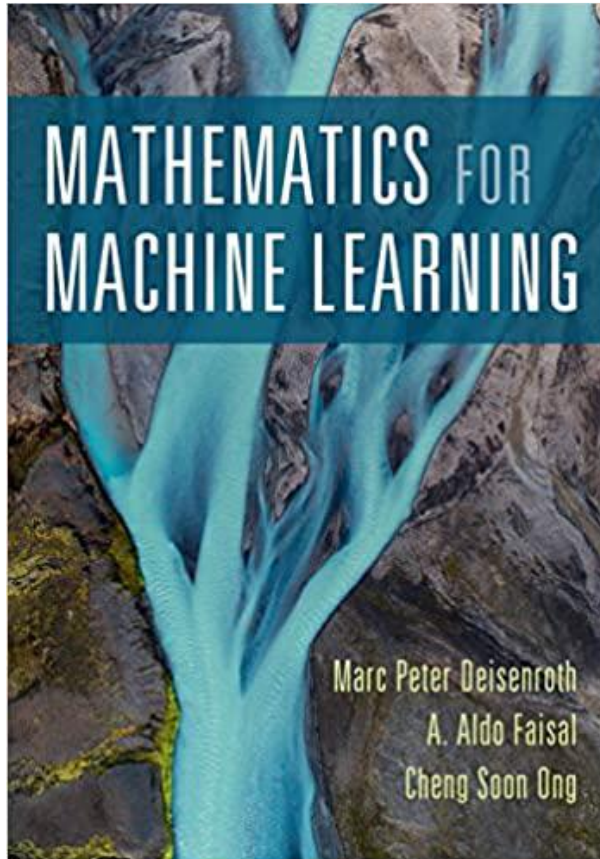
Overview of projects

- Opportunity to explore a possible ML-related future in industry and/or research
 - **Industry Projects**
 - Good experience, possible job potential
 - Academic supervisory input is typically less
 - Project suggestions supplied by potential supervisors
 - **Academic Projects**
 - Opportunity to work with an academic on a topic aligned to academic's interests
 - Project suggestions supplied by potential supervisors and students
 - **Schedule**
 - Project Day in January
 - Projects selected during January and February
 - Work formally begins in June/July
 - Hand-in at the beginning of September

Career outcomes

- Alumni from the department's machine learning programmes have been employed at major tech and finance companies including, Google Deepmind, Microsoft Research, Dunnhumby, Index Ventures, Cisco, Deutsche Bank, IBM, and Morgan Stanley. Others have gone on to pursue further study or a career in academia.

Further reading



[Mathematics for Machine Learning | Companion webpage to the book "Mathematics for Machine Learning". Copyright 2020 by Marc Peter Deisenroth, A. Aldo Faisal, and Cheng Soon Ong. Published by Cambridge University Press. \(mml-book.github.io\)](#)

[Python for Data Analysis, 2nd Edition \[Book\] \(oreilly.com\)](#)

Reflections from alumnus, Andreas Argyriou

- **How did you find the course?** The quality of the course was excellent overall and it is a good qualification for a subsequent career in machine learning or data science.
- **What did you do your project on?** Implementing and evaluating certain numerical methods applied to semi-supervised learning.
- **Why would you recommend the programme?** The course gives a thorough survey of the methods in machine learning at that time. It was taught by world class experts, who are active in research in the field.
- **What you learnt / found helpful to take into career.** Most of the learnings about fundamentals have been useful in my everyday practice in both research and applied data science.
- **How did you get your current role?** I went to do a PhD and research for several years after the MSc and then I moved to data science in the industry.
- **Any tips?** It helps a lot to refresh / learn your knowledge in maths, esp. probability and linear algebra, since the courses can be quite theoretical from the beginning.

Any questions?

- Please raise your hand to speak or type your question in the chat

Useful links

Admissions

- [Frequently Asked Questions for applicants](#)
- (Video) [UCL Computer Science MSc Application Process](#)

Scholarships

- [UCL Scholarships and funding](#)
- [Computer Science Scholarships](#)

Contacts

- PGT Admissions at Computer Science: cs.pgt-admissions@ucl.ac.uk
- [Contact Graduate and Teacher Training Admissions](#)
- General student funding enquiries: studentfunding@ucl.ac.uk