Machine Learning in Medical Imaging (MPHY0041)

**Description**

Machine learning (ML) or artificial intelligence (AI) is ubiquitous and finds its application in various fields in science and healthcare. In this course we will introduce the basic concepts of machine learning including regularized linear models, tree-based models, neural-networks as well as model assessment. The methods are illustrated and introduced using problems relevant to medical imaging: image reconstruction, image enhancement (noise reduction, super-resolution, image quality transfer), modality transfer, image registration and segmentation, and image-based diagnosis (classification and regression). At the end of course, students will have an overview on relevant methods, their advantages and limitations as well as how to apply them in their field.

A video description can be found at the UCL Media Central.

**Key information**

- **Year**: 2019/20
- **Credit value**: 15 (150 study hours)
- **Delivery**: PGT L7, Campus-based
- **Reading List**: [View on UCL website](#)
- **Tutor**: Dr Andre Altmann
- **Term**: Term 2
- **Timetable**: [View on UCL website](#)

**Assessment**

- Coursework: 50%
- Group project: 50%

**Find out more**

For more information about the department, programmes, relevant open days and to browse other modules, visit [ucl.ac.uk](http://ucl.ac.uk)

---

**Disclaimer**: All information correct as of August 2019. Please note that aspects of the module may be subject to change. UCL will make best efforts to inform applicants of major changes.
Machine Learning in Medical Imaging (MPHY0041)

Description

Machine learning (ML) or artificial intelligence (AI) is ubiquitous and finds its application in various fields in science and healthcare. In this course we will introduce the basic concepts of machine learning including regularized linear models, tree-based models, neural-networks as well as model assessment. The methods are illustrated and introduced using problems relevant to medical imaging: image reconstruction, image enhancement (noise reduction, super-resolution, image quality transfer), modality transfer, image registration and segmentation, and image-based diagnosis (classification and regression). At the end of course, students will have an overview on relevant methods, their advantages and limitations as well as how to apply them in their field.

A video description can be found at the UCL Media Central.

Key information

Year 2019/20
Credit value 15 (150 study hours)
Delivery UGM L7, Campus-based
Reading List View on UCL website
Tutor Dr Andre Altmann
Term Term 2
Timetable View on UCL website

Assessment

- Coursework: 50%
- Group project: 50%

Find out more

For more information about the department, programmes, relevant open days and to browse other modules, visit ucl.ac.uk