Proposed Change to DRPS entry for Machine Learning Practical (INFR11132)
http://www.drps.ed.ac.uk/17-18/dpt/cxinfr11132.htm

The following changes are proposed to the DRPS entry for MLP

(1) Assessment. Coursework 3, which can viewed as an interim report/plan for the semester 2 mini-project becomes formative and non-assessed. The proportion of marks previous allocated to coursework 3 is transferred to courseworks 2 and 4. These changes are reflected in updates to Additional Information (Assessment) and to Feedback.

(2) Updates and clarifications to Course Description, Reading List, Keywords.

Updated text for the DRPS entry is proposed below.

COURSE DESCRIPTION

The course will cover practical aspects of machine learning, and will focus on practical and experimental issues for a particular theme. The current focus of the course is soon deep learning and neural networks, and topics that are covered include:

* Feed-forward network architectures
* Optimisation of neural networks (stochastic gradient descent)
* Regularization
* Neural networks for classification
* Autoencoders
* Convolutional Neural Networks
* Recurrent Neural Networks

MLP will be coursework-based, with lectures to support the additional material required to carry out the practical. Students who do this course will have experience in the design, implementation, training, and evaluation of machine learning systems.

MLP is a two-semester course. During semester 1 the course will focus on developing a deep learning framework based on experiments using the task of classification of handwritten digits using the well-known MNIST dataset. The course uses a Python software framework, and a series of Jupyter notebooks. There is a series of ten weekly lectures in semester 1 to provide the required theoretical support to the practical work.

Semester 2 will be project-based, with a focus on using deep neural networks within the context of a miniproject, using an open source toolkit such as TensorFlow or PyTorch. Lectures in semester 2 will support the coursework, and also provide insights to the current state of the art in this very fast moving area.

ADDITIONAL INFORMATION (ASSESSMENT):

100% coursework
Coursework 1 (semester 1), 10%
Coursework 2 (semester 1), 40%
Coursework 3 (semester 2), formative - not assessed
Coursework 4 (semester 2), 50%

FEEDBACK

Summative feedback will provided through marking of, and comments on, three pieces of assessed coursework. Detailed feedback from the first assessed coursework will be provided before the submission deadline for the second coursework. Formative feedback will be provided for the third, non-assessed coursework, as well being provided via the lab sessions through discussion with the course lecturers, TAs, and demonstrators.

READING LIST:

Ian Goodfellow, Yoshua Bengio, and Aaron Courville, Deep Learning, 2016, MIT Press.

Michael Nielsen, Neural Networks and Deep Learning, 2016. Online at http://neuralnetworksanddeeplearning.com

Christopher M Bishop, Neural Networks for Pattern Recognition, 1995, Clarendon Press.

KEYWORDS:

Deep learning, machine learning, neural networks