Module Details

Module Title	Advanced Machine Learning
Module Code	COS7045-B
Academic Year	2021/2
Credits	20
School	Department of Computer Science
FHEQ Level	FHEQ Level 7

Contact Hours

Type	Hours
Lectures	20
Laboratories	24
Directed Study	156

Availability

Occurrence	Location / Period
BDA	University of Bradford / Semester 2

Module Aims

To develop an understanding of current theoretical and practical approaches, algorithms and techniques used to enable Machine Learning.To develop practical skills in applying Machine Learning techniques in specific contexts.

Outline Syllabus

Background and history of Machine Learning; current approaches and sub-fields including data mining, supervised and unsupervised learning algorithms, deep learning, reinforcement learning; data preparation and processing; software and tools for machine learning including R, KNIME, Weka.

Learning Outcomes

Outcome Number	Description
O1	Demonstrate mastery of applying relevant machine learning techniques to suitable data and/or software environments.
O2	Demonstrate practical skills using suitable software tools for data mining and machine learning.
O3	Conduct research to find, critically analyse and select appropriate techniques and algorithms depending on the context and problem

Learning, Teaching and Assessment Strategy

A combination of online lectures and laboratory sessions make up the contact time for this module. Theoretical concepts delivered in lectures will have strong links to practical skills developed in associated lab sessions. Verbal feedback during practical lab exercises and online support using TEL tools will support student learning throughout the module.

Assessment is in the form of a coursework exercise that requires students to select and solve problems in the fields of data mining and machine learning using both the knowledge gained in the module as well as independent research conducted during the completion of the coursework.

Mode of Assessment

Type	Method	Description	Weighting
Summative	Coursework	An exercise in practical machine learning and data mining including a report and code/scripts demonstrating practical wo	100%

Reading List

To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html