Applications in Big Data and Machine Learning

Module Information

2022.01, Approved

Summary Information

Module Code	7124COMP
Formal Module Title	Applications in Big Data and Machine Learning
Owning School	Computer Science and Mathematics
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Computer Science and Mathematics

Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	33

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	The aim of this module is to complete the data science "process" by building data products that feedback and influence the real world using the results of that data science process. In doing so, students gain experience in bringing to fruition the data science process.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Design a data application using large scale data storage and machine learning tools
MLO2	2	Construct a data application using large scale data storage and machine learning tools
MLO3	3	Design a machine learning/analytics exercise for a given subject area
MLO4	4	Develop a machine learning/analytics solution for a given subject area

Module Content

Outline Syllabus	Review of large scale data storage platforms and machine learning tools e.g. Hadoop and MahoutRecommendation SystemsIntroduction to recommender systemsRepresenting recommender dataProduction level recommendation systemsDistributing recommender computationsClusteringReview of clusteringRepresenting dataClustering algorithms reviewedEvaluating and improving clustering qualityClustering in productionCase studies in clusteringClassificationIntroduction to classificationTraining a classifierEvaluating and tuning a classifierDeploying a classifierCase studies in classificationEmerging trends in applications of large scale data processing and machine learning
Module Overview	
Additional Information	This module provides both theoretical and practical experience of large scale data storage considerations and the use of tools to support the processing of that data.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Machine Learning Exercise 1	50	0	MLO1, MLO2
Technology	Machine Learning Exercise 2	50	0	MLO3, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Abir Hussain	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings