LIVERPOOL JOHN MOORES UNIVERSITY

Machine Learning

Module Information

2022.01, Approved

Summary Information

Module Code	7504BDSA
Formal Module Title	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	45
Practical	30

Module Offering(s)

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

Aims and Outcomes

Aims	The course provides students with a detailed knowledge about artificial learning systems, covering both supervised and unsupervised learning. The course considers various machine learning techniques: Regression and Statistical Models, Classification, Clustering, Decision Trees, Support Vector Machines, Boosting, Neural Networks, Bayesian Networks, Computational Methods, and Simulation Techniques.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Develop theoretical models for machine learning systems.
MLO2	2	Design practical systems related to machine learning.
MLO3	3	Effectively implement various machine learning tools.
MLO4	4	Conduct research in machine learning.
MLO5	5	Critically evaluate various machine learning approaches.

Module Content

Outline Syllabus	Introduction to machine learning systemsNeural networksRegressionDecision trees, Naïve Bayes and KNN (classification), K-means clusteringSupport vector machineReinforcement LearningEvolutionary computing in machine learningParticle Swarm Intelligence techniquesHybrid machine Learning systemsMachine Learning and cloud
Module Overview	
Additional Information	The module contributes to the master's aim to equip the student with the required abilities and skills to perform data science on real-world applications.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Assignments/Exercises	30	0	MLO2, MLO3
Presentation	Report & Presentation	30	0	MLO2, MLO3, MLO4
Exam	Final Examination	40	3	MLO1, MLO2, MLO3, MLO5

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Sandra Ortega Martorell	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings