

ICT5357 Problem-Solving and Decision-Making with Machine Learning

Unit Description

Problem-Solving and Decision-Making with Machine Learning equips students with the knowledge and skills to tackle complex problems using machine learning techniques.

Students will gain a deep understanding of various machine learning algorithms and their applications in regression, classification, clustering, and dimensionality reduction. They will explore problem-solving opportunities in forecasting, fraud detection, recommendation systems, time series analysis and more. Additionally, students will delve into advanced topics such as convolutional neural networks (CNNs), object detection, and image segmentation for visual data analysis. The unit also covers automated machine learning (AutoML) and showcases real-world applications across domains like healthcare and natural language processing.

By the end of the unit, students will be proficient in leveraging machine learning to make data-driven decisions and solve complex problems effectively.

Credit Points	8 credit points
Duration	12 weeks (10 teaching weeks and 2 revision and assessment weeks)

Unit Learning Outcomes

On successful completion of this unit, students will be able to:

1. Apply strategic problem-solving to achieve goals, complete tasks, make decisions with data.
2. Research supervised learning and unsupervised learning techniques and apply appropriate techniques to solve problems that involve classifying or clustering data.
3. Innovate applications of data visualisation and dimensionality reduction.
4. Plan, design and create machine learning models to solve a variety of problems, using automated machine learning (AutoML).