

INFO 7001 ADVANCED MACHINE LEARNING

Credit Points 10

Legacy Code 301119

Coordinator Oliver Obst ([https://directory.westernsydney.edu.au/search/name/Oliver Obst/](https://directory.westernsydney.edu.au/search/name/Oliver%20Obst/))

Description Advanced Machine Learning explores modern methods of classification, clustering and regression to make predictions and analyse different forms of data. Issues that face all machine learning methods, such as model evaluation, assessment and generalisation will also be analysed.

School Computer, Data & Math Sciences

Student Contribution Band HECS Band 1 10cp

Level Postgraduate Coursework Level 7 subject

Pre-requisite(s) COMP 7024

Restrictions

Students must be enrolled in a postgraduate program.

Assumed Knowledge

Fundamentals of computer programming and basic linear algebra.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Describe appropriate machine learning methods for given problems.
2. Fit modern machine learning models to data.
3. Make predictions based on a fitted machine learning model.
4. Analyse data based on a fitted machine learning model.
5. Evaluate the utility of a machine learning method for given data.

Subject Content

1. Introduction to Machine Learning
2. Support Vector Machines
3. Neural Networks
4. Reinforcement Learning
5. Manifold/Metric Learning

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Item	Length	Percent	Threshold	Individual/Group Task
Online quizzes	5x60 minutes	20	N	Individual
Project	15 pages	50	N	Individual
Project presentation	15 mins	30	N	Individual

Prescribed Texts

- Sutton, R. S., Barto, A. G. (2018). Reinforcement Learning: An Introduction (2nd ed.). Cambridge, Massachusetts: The MIT Press.

Teaching Periods

Spring

Parramatta - Victoria Rd

Day

Subject Contact Oliver Obst ([https://directory.westernsydney.edu.au/search/name/Oliver Obst/](https://directory.westernsydney.edu.au/search/name/Oliver%20Obst/))

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=INFO7001_22-SPR_PS_D#subjects)