

School of Engineering and Computer Science

Te Kura Mātai Pūkaha, Pūrorohiko



Prescription

This course explores a range of machine learning tools and techniques for analysing data and automatically generating applications. The course will address tools for classification, regression, clustering and text mining, and techniques for preprocessing data and analysing the results of machine learning tools. Students will gain practical experience in applying a range of tools to a range of different data sets from different domains.

Course learning objectives

Students who pass this course will be able to:

1. Describe a range of standard AI problems, algorithms and tools.
2. Classify a particular problem into the appropriate category of AI problem.
3. Choose and apply an appropriate AI algorithm or tool to solve a particular problem, choose appropriate values for the parameters of the algorithm or tool, and be able to evaluate the quality of the solution.
4. Evaluate the input data for a problem and apply the appropriate tools and techniques to prepare the data for an AI tool.

Withdrawal from Course

Withdrawal dates and process:

<https://www.victoria.ac.nz/students/study/course-additions-withdrawals>

Lecturers

Will Browne (Coordinator)

will.browne@vuw.ac.nz 04 4635233 ext 8489

418 Alan MacDiarmid Building, Kelburn

Bing Xue

bing.xue@vuw.ac.nz 04 4635542

352 Cotton, Kelburn

Teaching Format

The course will be taught by a combination of lectures and tutorials (during the lecture slots)..

Laboratories will be introduced if needed to enable students to use the tools and techniques from the lectures and tutorials. The assignments and project will allow students to explore and apply their knowledge to practical data problems, where working at home or in laboratories is permitted.

Student feedback

Student feedback on University courses may be found at:
www.cad.vuw.ac.nz/feedback/feedback_display.php

Dates (trimester, teaching & break dates)

- Teaching: 08 July 2019 - 13 October 2019
- Break: 19 August 2019 - 01 September 2019
- Study period: 14 October 2019 - 17 October 2019
- Exam period: 18 October 2019 - 09 November 2019

Class Times and Room Numbers

08 July 2019 - 18 August 2019

- **Monday** 11:00 - 11:50 – LT323, Hunter, Kelburn
- **Thursday** 11:00 - 11:50 – LT104, Hugh Mackenzie, Kelburn
- **Friday** 12:00 - 12:50 – LT323, Hunter, Kelburn

02 September 2019 - 13 October 2019

- **Monday** 11:00 - 11:50 – LT323, Hunter, Kelburn
- **Thursday** 11:00 - 11:50 – LT104, Hugh Mackenzie, Kelburn
- **Friday** 12:00 - 12:50 – LT323, Hunter, Kelburn

Set Texts and Recommended Readings

Required

There are no required texts for this offering.

Mandatory Course Requirements

In addition to achieving an overall pass mark of at least 50%, students must:

- submit reasonable attempts for at least three of the four assignments, and.
- submit reasonable attempt at the final project.

If you believe that exceptional circumstances may prevent you from meeting the mandatory course requirements, contact the Course Coordinator for advice as soon as possible.

Assessment

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
Assignment 1: Introduction to data mining tools	29/07/2019	CLO: 1,3	16%
Assignment 2: Real-World Data Handling, Modelling and Visualisation	12/08/2019	CLO: 1,2,3,4	16%
Assignment 3: Kaggle Competition	04/09/2019	CLO: 2,3	16%
Assignment 4: Performance Metrics and Optimisation	23/09/2019	CLO: 1,4	16%
Project (5 weeks) (Code, scripts, and report on a solution to a problem)	28/10/2019	CLO: 1,2,3,4	36%

Penalties

The penalty for assignments that are handed in late without prior arrangement is one grade reduction per day. Assignments that are more than one week late will not be marked.

Extensions

Individual extensions will only be granted in exceptional personal circumstances, and should be negotiated with the course coordinator before the deadline whenever possible. Documentation (eg, medical certificate) may be required.

Submission & Return

All work is submitted through the ECS submission system, accessible through the course web pages. Marks and comments will be returned through the ECS marking system, also available through the course web pages.

Workload

Although the workload will vary from week to week, you should expect to spend approximately 10–12 hours per week on the course to give a total of 150 hours study time for the course.

Teaching Plan

See https://ecs.victoria.ac.nz/Courses/COMP309_2019T2/LectureSchedule

Communication of Additional Information

All online material for this course can be accessed at https://ecs.victoria.ac.nz/Courses/COMP309_2019T2/

Links to General Course Information

- Academic Integrity and Plagiarism: <https://www.victoria.ac.nz/students/study/exams/integrity-plagiarism>

- Academic Progress: <https://www.victoria.ac.nz/students/study/progress/academic-progress> (including restrictions and non-engagement)
- Dates and deadlines: <https://www.victoria.ac.nz/students/study/dates>
- Grades: <https://www.victoria.ac.nz/students/study/progress/grades>
- Special passes: Refer to the Assessment Handbook, at <https://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf>
- Statutes and policies, e.g. Student Conduct Statute: <https://www.victoria.ac.nz/about/governance/strategy>
- Student support: <https://www.victoria.ac.nz/students/support>
- Students with disabilities: https://www.victoria.ac.nz/st_services/disability/
- Student Charter: <https://www.victoria.ac.nz/learning-teaching/learning-partnerships/student-charter>
- Terms and Conditions: <https://www.victoria.ac.nz/study/apply-enroll/terms-conditions/student-contract>
- Turnitin: <http://www.cad.vuw.ac.nz/wiki/index.php/Turnitin>
- University structure: <https://www.victoria.ac.nz/about/governance/structure>
- VUWSA: <http://www.vuwsa.org.nz>

Offering CRN: [30098](#)

Points: 15

Prerequisites: COMP 261 or (DATA 201 and DATA 202) or NWEN 241 or SWEN 221

Duration: 08 July 2019 - 10 November 2019

Starts: Trimester 2

Campus: Kelburn