CS 622 – Introduction to Machine Learning
UNIVERSITY OF NEVADA LAS VEGAS
Department of Computer Science

Time: asynchronous
Class Location: TBA
Office Location: TBA
Office Hours: TBA
Phone: 702 895 4884
WebCampus: https://webcampus.unlv.edu
Email:

Note: The instructor reserves the right to change the syllabus as it relates to how the course is administered.

Course Description

Explores various machine learning algorithms for regression, classification, clustering and ensemble learning, including application of machine learning techniques to solve challenging problems in various fields. 3 credits

Course Prerequisite(s):

CS 302 for CS 422

In-depth familiarity with areas of machine learning.

Course Competencies

Introduction to Machine Learning
- Learning theory
- Data representation and processing
- Visualization

Supervised learning
- K-Nearest Neighbor
- Linear regression/classifier
- Logistic regression
- Perceptron
- Support Vector Machine
- Kernels
- Feedforward Artificial Neural Networks
- Convolutional Neural Networks
- Deep Learning
- Decision Trees
- Linear Discriminant Analysis
- Ensemble Learning

Unsupervised learning
- Principal Component Analysis
- K-mean clustering

Learning Outcomes/Course Objectives

At the end of the course students will be able to:

1. Explain how machine learning algorithm works

2. Apply proper machine learning techniques to solve challenging problems

3. Design and implement a wide range of analytics algorithms

Required Text

Not mandatory, but a reference – Deep Learning, Vol. 1 and 2: From Basics to Practice by Andrew Glassner, Amazon Digital Services LLC, 2018. Homework assignments, lecture slides, and other materials will be posted on the course webpage or webcampus.

Evaluation Methods

Grades will be based on following:

Quizzes   5%

Homework	30%
Midterm	25%
Final	25%
Project	10%
Presentation	5%

Academic Dishonesty

Details are in section "University Policies". Use of sites such as Chegg and Course Hero is considered academic misconduct.

Grading Scale

A   > 89

Academic integrity is a legitimate concern for every member of the University community. We all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility, and professionalism. By choosing to join the UNLV community, students accept the expectations of the Student Academic Misconduct Policy, and are encouraged to always take the ethical path whenever faced with choices. Students enrolling at UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's educational mission. An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another person, from the Internet or any other source without proper citation of the source(s). See the Student Conduct Code, https://www.unlv.edu/studentconduct/student-conduct.

Auditing a Course

Auditing a course allows a student to continue attending the lectures and/or laboratories and discussion sessions associated with the course, but the student will not earn a grade for any component of the course. Students who audit a course receive the same educational experience as students taking the course for a grade, but will be excused from exams, assessments, and other evaluative measures that serve the primary purpose of assigning a grade.

Classroom Conduct

Students have a responsibility to conduct themselves in class and in the libraries in ways that do not interfere with the rights of other students to learn, or of instructors to teach. Use of devices such as cellular phones and pagers, or other potentially disruptive activities are only permitted with the prior explicit consent of the instructor. Students are specifically prohibited to record classes without instructor authorization, including online/remote classes (either audio only, or video and audio). The instructor may rescind permission at any time during the class. If a student does not comply with established requirements or obstructs the functioning of the class, the instructor may initiate an administrative withdrawal of the student from the course.

Since the COVID-19 pandemic forced some instruction to be delivered remotely starting in Spring 2020, numerous students have asked instructors to record their synchronous classes, so that they can access them at their convenience. Instructors who agree to record their classes (audio only, or video and audio) should inform students in advance. Recorded lectures may not be broadly released to anyone, but made available exclusively to those students enrolled in the class during the particular academic term. Recorded lectures must be stored securely, and are subject to the Nevada System of Higher Education's Records Retention Policy, meaning that the recordings can only be deleted 120 days after the end of class (i.e., after grades are posted). Once this requirement is met, the recordings should be deleted. Class recordings are protected from disclosure, as they are deemed part of an educational record under the Family Educational Rights and Privacy Act (FERPA).

Copyright

The University requires all members of the University Community to familiarize themselves with, and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The University will neither protect nor

This policy will not apply in the event that completing the assignment or administering the examination at an alternate time would impose an undue hardship on the instructor or the University that could be reasonably avoided. There should be a good faith effort by both the instructor and the student to agree to a reasonable resolution. When disagreements regarding this policy arise, decisions can be appealed to the Department Chair/School Director, College/School Dean, and/or the Faculty Senate Academic Standards Committee.

For purposes of definition, extracurricular activities may include, but are not limited to academic recruitment activities, competitive intercollegiate athletics, fine arts activities, liberal arts competitions, science and engineering competitions, and any other event or activity sanctioned by a College/School Dean, and/or by the Executive Vice President and Provost.

Rebelmail

CS 622 Syllabus