



Course CS 4375.001 – Introduction to Machine Learning

Professor Anurag Nagar, Ph.D.

Term Fall 2022

Meetings M, W 4:00 PM – 5:15 PM ECSS 2.306

Professor's Contact Information

Office Phone 972-883-6345

Office Location ECSS 4.610

Email Address Anurag.Nagar@utdallas.edu

Office Hours 3:00 PM - 5:00 PM Tuesdays and Thursdays

Other Information Walk-in during office hours is encouraged. At other times, email is the best method of contact.

Exam 1 Wednesday October 5 at the testing center

Exam 2 Wednesday December 7 at the testing center

General Course Information

Pre-requisites, Co-requisites, & other restrictions (CS 3341 or SE 3341 or (Data Science major and STAT 3355)) and (CE 3345 or CS 3345 or SE 3345).

Course Description The main objective of this course is to introduce students to machine learning, the study of computer systems that improve their performance *automatically* through experience. Students will learn the latest machine learning algorithms and models that constitute typical machine learning systems. They will also gain the necessary foundations and background to both build practical machine learning systems and conduct research in machine learning.

Learning Outcomes Ability to understand and apply basic learning algorithms
Ability to understand and apply computational learning theories
Ability to understand and apply advanced learning algorithms

There is no required textbook, but the following books would be helpful:

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| Texts & Materials | <ul style="list-style-type: none"> • Introduction to Machine Learning with Python: A Guide for Data Scientists 1st Edition • Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython 2nd Edition • Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow, 2nd Edition • An Introduction to Statistical Learning • The Elements of Statistical Learning • Machine Learning by Tom Mitchell • Pattern Recognition and Machine Learning by Chris Bishop |
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Assignments & Academic Calendar

Assignments will be through eLearning.

The academic calendar for the class will be posted on eLearning

Course Policies

Grading (credit) Criteria	Homework Assignments: 25% of the course grade Term Project: 10% of the course grade Quizzes and Class Participation: 15% of the course grade Midterm: 25% of the course grade Final: 25% of the course grade
Late Work	Barring extenuating circumstances, such as verified medical emergencies, all problem sets must be turned in on the date specified. Assignments turned in within 24 hours of the due date will receive 90% of its score. Assignments turned in within 48 hours of the due date will receive 80% of its score. Assignments more than 48 hours late will not be accepted.
Covid 19 Information	The most current information about UTD's Covid policy can be viewed at: https://www.utdallas.edu/covid/
Class Materials	The Instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct .

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Classroom Conduct Requirements Related to Public Health Measures	UT Dallas will follow the public health and safety guidelines put forth by the Centers for Disease Control and Prevention (CDC), the Texas Department of State Health Services (DSHS), and local public health agencies that are in effect at that time during the Fall 2021 semester to the extent allowed by state governance. Texas Governor Greg Abbott's Executive Order GA-38 prohibits us from mandating vaccines and face coverings for UT Dallas employees, students, and members of the public on campus. However, we strongly encourage all Comets to get vaccinated and wear face coverings as recommended by the CDC. Check the Comets United: Latest Updates webpage for the latest guidance on the University's public health measures. Comets are expected to carry out Student Safety protocols in adherence to the Comet Commitment. Unvaccinated Comets will be expected to complete the Required Daily Health Screening . Those students who do not comply will be referred to the Office of Community Standards and Conduct for disciplinary action under the Student Code of Conduct – UTSP5003 .
Extra Credit	None
Make-up Exams	No makeup exams at a later/earlier date will be scheduled for any student unless a written medical note is provided.
Classroom Citizenship	Please be considerate of fellow students and the instructor. Please turn off all electronic devices during class hours. Participate actively in classroom and online (through eLearning) discussion.
Field Trip Policies	None
Student Conduct and Discipline	<p>The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations that govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, A to Z Guide, which is provided to all registered students each academic year.</p> <p>The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the <i>Rules and Regulations, Board of Regents, The University of Texas System, Part I, Chapter VI, Section 3</i>, and in Title V, Rules on Student Services and Activities of the university's <i>Handbook of Operating Procedures</i>. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).</p> <p>A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.</p>

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<p>Academic Integrity</p>	<p>The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.</p> <p>Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.</p> <p>Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.</p>
<p>Email Use</p>	<p>The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.</p>
<p>Student Grievance Procedures</p>	<p>Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's <i>Handbook of Operating Procedures</i>.</p> <p>In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.</p> <p>Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.</p>

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Disability Services	<p>The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.</p> <p>The contact information for the Office of Disability Services is: The University of Texas at Dallas, SU 22 PO Box 830688 Richardson, Texas 75083-0688 (972) 883-2098 (voice or TTY)</p> <p>Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note taking, or mobility assistance.</p> <p>It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.</p>

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