THE UNIVERSITY *of*
NEW ORLEANS

DEPARTMENT OF COMPUTER SCIENCE

Syllabus, Spring 2023

CSCI 4588/5588: Machine Learning II

Lecture: Mon, Wed, and Friday: 12:00 PM to 12:50 PM. **Location**: Math 209 + Internet/Zoom.

Zoom Link and Passcode to attend the class –
Zoom ID: 85738643900; **Passcode**: 469299

Instructor: Md Tamjidul Hoque
Email: thoque@uno.edu
Phone: 504-280-2406
Office Hours: **Mon, Wed, Thursdays**: 12:50 PM to 2:30 PM || Math 333 + Internet/Zoom.

Online Office Hours: https://uno.zoom.us/meeting/register/tZwkceqtqDorHN1Nzlq-AK6TFUEHTwl1VY3i

Prerequisites: CSCI 2125 or CSCI 3220 or consent of the department.

Textbooks:

[1] The Elements of Statistical Learning, 2nd Ed^{n}, by Trevor Hastie, Robert Tibshirani, and Jerome Friedman. Springer, 2009, ISBN: 978-0387848570. The book is available online, https://web.stanford.edu/~hastie/ElemStatLearn/

[2] An Introduction to Statistical Learning: With Applications in R, by Gareth James, Daniela Witten, Trevor Hastie, and Robert Tibshirani. Springer, ISBN 978-1-4614-7138-7 (eBook). The book is available online for free: https://www.statlearning.com

[3] Géron, A., 2019. Hands-on Machine Learning with Scikit-Learn, Keras, and TensorFlow, 2nd ed. O'Reilly.

Course Content: Topics include machine learning models, such as:

- Evolutionary Computation / Genetic Algorithm,
- Regression/Classification
- Neural Networks,
- Support Vector Machines,
- Boosting,
- Decision Tree,
- Random Forest, and
- Deep/Belief Nets.

Learning Outcomes: A programmer with Machine Learning (ML) knowledge can 'generate' solution code for a complex problem by clicking a few buttons after setting up appropriate parameters. A programmer may have to spend years without ML knowledge to have a stable version of the program code, and for complex problems, the developed solution may perform very poorly. Thus, the programmer with ML knowledge can have a significant advantage over a programmer without ML knowledge in terms of faster and better-performing program-code generation. In this course, the students will have opportunities to learn state-of-the-art machine learning algorithms, their implementations, and applications for solving real-world problems

through programming projects and assignments. The target techniques are instrumental in higher dimensional and complex data space, whereas the available deterministic approaches are often hard to apply. ML has a broad spectrum of applications, especially for complex domains like search engines, stock-market analysis, game playing, medical diagnosis, robotics, automation, and bioinformatics.

Online Materials: Essential course material, assignments, announcements, etc., will be posted to this course page on Moodle, http://www.uno.edu/moodle. Make sure to check your @uno.edu email frequently.

Attendance: Your attendance in class is needed and essential for you to meet course requirements. A 5% mark is allocated for your attendance.

Grading:

Assignments (Programming + Homework)	(4) × 11% →	44%
Class Test	(3) × 11% →	33%
Best 6 out of 7	(6) × 11% →	66%
Final Examination	→	29% [**Must attend to pass**]
Attendance:	→	5%

%5: [90-100%], 4%: [85-90), 3%: [80-85), 2%: [75-80), 1%: [70-75), 0%: <70.

Grading scale: A: 90+%, B: 80-89%, C: 70-79%, D: 60-69%, F: < 60%.

Bonus: A student who can produce any publishable work (approved based on superior results, recognized by the instructor during the course period) related to any given assignment(s) or the topics covered in the class will be given 10% bonus marks.

Exams: Tests 1, 2, and 3 are scheduled tentatively on Feb 22nd, Mar 22nd, and April 28th, respectively.
Last Class: May/10/2023 (Wednesday).
Final Exam: **May 12 (Friday), 12:30 PM to 2:30 PM**.

Due Dates: You are responsible for handing in your assignment on time. Late submissions will be assessed at the following rates: 85% for 1-48 hours late, 65% for 49-96 hours late, 45% for 97-144 hours late, and 25% for 145-168 hours late. Assignments that are over a week late will receive no credit. For online submission, use Moodle. However, if Moodle is not working for some technical reason, email me (thoque@uno.edu) the assignment. If you cannot act according to the deadlines due to exceptional circumstances, you must inform me long before the deadline or provide evidence.

You may be interested in:

- Undergraduate Machine Learning (ML) and AI Concentration, click here for the details.
- Graduate Certificate in ML & AI, click here for the details.
- CSCI 4587/5587 ML I (offered in **Fall** semester), click here for a sample syllabus.
- CSCI 6521 Advanced ML I (offered in **Spring** semester), click here for a sample syllabus.
- CSCI 6522 Advanced ML II (offered in **Fall** semester), click here for a sample syllabus.

Conducts:
(1) **All submitted works must be your own**. Any academic dishonesty, including cheating, plagiarism, and conspiracy, will result in zero marks and will be reported to the appropriate authority in the university (http://www.studentaffairs.uno.edu/pdfs/StudentCodeofConduct.pdf).
(2) Please be on time for the class. Late coming into the class is heavily discouraged.
(3) Please avoid disruptive and noisy classroom activities and be respectful to others.
(4) **Masks are recommended in the physical classroom**.

Syllabus Attachment
Spring 2023

Spring 2023 Semester Important Dates*

Courses made visible in Moodle..... 01/18
Last day to adjust schedule w/o fee,
or withdraw with 100% refund..... 01/22
Semester Classes Begin..... 01/23
Last day to adjust schedule with fee 01/26
Last day to withdraw or resign with 50% refund..... 02/06
Last day to apply for Spring commencement..... 03/01
Mid-Term grades due..... 03/19
Final day to drop a course or resign 05/11
Last Day of Classes 05/11
Final examinations..... 05/12-05/18
Commencement..... 05/19
Degree conferral 05/26
Note: check Registrar's website for items not listed here.

Winter Intersession 2023 Important Dates*

Last day to adjust schedule w/out fee,
or withdraw with 100% refund..... 01/01
Semester Classes Begin..... 01/03
Last day to withdraw w/fee 01/05
Martin Luther King Jr.'s Birthday Holiday 01/16
Final day to drop a course or resign 01/19
Last Day of Classes 01/19
Final examinations 01/20
Commencement..... 05/19
**Note: check Registrar's website for items not listed here.*

Session "B" Important Dates*

Last day to apply for Spring commencement..... 03/01
Last day to adjust schedule w/out fee,
or withdraw with 100% refund..... 03/20
Semester Classes Begin..... 03/21
Last day to adjust schedule w/fee 03/24
Last day to withdraw or resign with 50% refund..... 03/28
Mid-Term grades due..... 04/06
Final day to drop a course or resign 05/11
Last Day of Classes 05/11
Final examinations..... 05/12-05/18
Commencement..... 05/19
Degree conferral 05/26
**Note: check Registrar's website for items not listed here.*

Spring Semester Holidays

Mardi Gras/ Spring Break 02/20-02/24
Good Friday Holiday 04/07-04/08

Withdrawal Policy

Students are responsible for initiating action to resign from the University (withdraw from all courses) or from a course on or before dates indicated in the current Important Dates calendar. Students who fail to resign by the published final date for such action will be retained on the class rolls even though they may be absent for the remainder of the semester and be graded as if they were in attendance. Failure to attend classes does not constitute a resignation. Check the dates and charges associated on the Registrar's website.

Incomplete Policy

A grade of I is assigned when, due to extenuating circumstances beyond their control, students engaged in passing course work are unable to complete class assignments within the time frame of the course's session. Before agreeing to the use of an incomplete grade in any course, an Incomplete Grade Agreement Form must be completed. Details regarding deadlines for completing the I grade, when the incomplete converts to a grade of F, and a link to the form are on the Academic Affairs website.

Repeat Policy

When a student is permitted to repeat a course for credit, the last grade earned shall be the one which determines course acceptability for degree credit. A student who has earned a C or better in a course may not repeat that course unless, (1) the catalog description indicates that the course may be repeated for credit, or (2) the student's Dean gives prior approval for documented extenuating circumstances.

Graduate Policies

Graduate policies often vary from undergraduate policies. To view the applicable policies for graduate students, see the Graduate Student Handbook.

Academic Misconduct Policy

Information about academic conduct is in UNO's Code of Conduct.

Safety Awareness Facts and Education

Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the appropriate Title IX resources here.

UNO Counseling Services and UNO Cares

UNO offers care and support for students in any type of distress. Counseling Services assist students in addressing mental health concerns through assessment, short-term counseling, and career testing and counseling. First-year students often have unique concerns, and UNO Cares is designed to address those students' needs. Contact UNO Cares.

Emergency Procedures

Sign up for emergency notifications via text and/or email at E2Campus Notification. All emergency and safety procedures are explained at the Emergency Health and Safety Office.

Diversity at UNO

As the most diverse public university in the state, UNO maintains a Diversity Affairs division to support the university's efforts towards creating an environment of healthy respect, tolerance, and appreciation for all people, and the expression of intellectual point of view and personal lifestyle. The Office of Diversity Affairs promotes these values through a wide range of programming and activities.

Learning and Support Services

Help is within reach in the form of learning support services, including tutoring in writing and math and other supplemental instruction. Visit the Learning Resource Center in LIB 126.

Peer Study Support App

UNO partners with CircleIn to provide an all-in-one studying application that equips students with tools for academic success while earning points for rewards. Get the app from the CircleIn website, or download the iOS CircleIn App or Android CircleIn App directly.

Affirmative Action and Equal Opportunity

UNO is an equal opportunity employer. The Human Resource Management department has more information on UNO's compliance with federal and state regulations regarding EEOC in its Policies and Resources website.

COVID-19 Health-Related Absences

Students should evaluate their health status regularly, refrain from coming to campus if they are ill, and seek appropriate medical attention for treatment of illness. Students should notify (email) their instructors about their absence as soon as possible, so that accommodations can be made. In the event of COVID-19 illness, students should also complete the Campus Reporting Form. Please note that medical excuse may be required at the discretion of the department chair and/or college dean. Students should stay informed of UNO's COVID-19 policies by using UNO's COVID-19 website.