CSC 3730 Machine Learning and Data Analytics
Fall 2020

Time & Place: Tuesday & Thursday 1:30-2:50 pm

Instructor: Prof. Mingxuan Sun
Email: msun@csc.lsu.edu
Office Hours: Tuesday & Thursday 12:30–01:30 pm

Course Objectives: The course will introduce machine learning principles and methods, advanced data analytics, and techniques for optimization and visualization. It will emphasize practical challenges in real world applications and include case studies involving text documents, graph and preference data.

Text: No textbook is required. The following are recommended as references:
Christopher Bishop, "Pattern Recognition and Machine Learning", Springer, 2007
Jure Leskovec, Anand Rajaraman and Jeff Ullman, "Mining of massive datasets", Cambridge University Press, 2011

Topics: Introduction to machine learning and data analytics
Visualization techniques and exploratory data analysis
Regression and classification (e.g., linear and logistic regression, nearest neighbor, decision tree, naïve bayes)
Model selection and optimization
Clustering (k means, hierarchical clustering)
Dimension reduction
Association rule mining
Applications in text mining, recommender system and graph analysis

Grading/Evaluation:

Class participation/In-class exercise	5%	
Homework	20%	
Group Project	10%	
Midterm	25%	(1:30-2:50 pm, Tuesday, Oct. 15)
Final	40%	(3:00-5:00 pm, Monday, Dec. 07)

A+ >= 96.6% A >= 93.3% A- >= 90.0%
B+ >= 86.6% B >= 83.3% B- >= 80.0%
C+ >= 76.6% C >= 73.3% C- >= 70.0%
D+ >= 66.6% D >= 63.3% D- >= 60.0% F < 60.0%

Classroom Policies:

A. **General Policy:** Students are expected to attend classes regularly. Students are

responsible for all announcements made in class, by email, and/or posted to Moodle. All grade appeal must be made within 3 class days following the return of graded work. Grades are recorded on the course Moodle.

B. **Email:** Check email frequently for additional instructions. Questions may be sent to the professor or TA by email. Last minute questions (i.e. sent the night before due date) may not be answered, so tackling problems early is encouraged.

C. **Late Submission:** 10% points off, if submitted within 24 hours after the due date; 25% off, if submitted 24-48 hours after the due date; no credit if submitted two days or more days after the due date unless prior arrangements are made with the instructor with acceptable reasons.

D. **Exams:** There will be no make-ups except under very special circumstances. Any reason for a make-up must be approved by the instructor.

E. **Academic Integrity:** Cheating will not be tolerated. LSU Honor Code http://saa.lsu.edu/code governs all work in this course. Unless indicated otherwise, all submissions must be done only by the individual whose name appears on the submission.