# MATH 3094: MATHEMATICS FOR MACHINE LEARNING
(SPRING 2021)

Machine Learning is a "hot topic" that brings together ideas from computer science, statistics, and mathematics to extract structures from large data sets. As a branch of artificial intelligence, it has applications in building automated systems, identifying patterns and making decisions. Some typical problems in machine learning include image recognition, fraud detection and extracting meaning from text.

Machine Learning uses mathematics as its basic language and main resource of important techniques. In order to exploit the immense possibilities of Machine Learning, a thorough mathematical understanding of many of these techniques is necessary.

In this course we will discuss the mathematical foundations of key algorithms in Machine Learning, and, through lab projects, apply these algorithms to some "real world" data. This course will incorporate computer work in Python. Necessary programming skills will be taught as part of the course.

Prerequisites: Multivariate Calculus (2010), Linear Algebra (2210), and Transition to Advanced Mathematics (2710), or permission of the instructor.
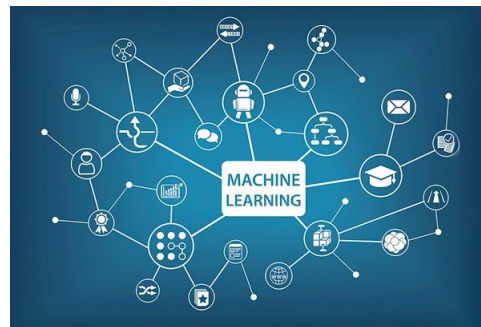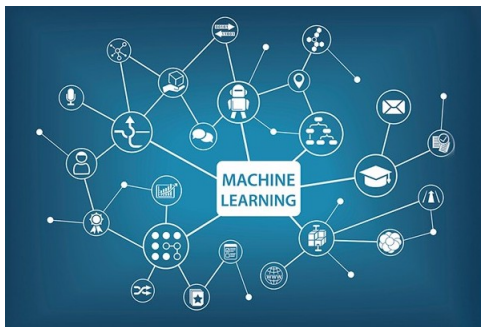
Questions? Email one of the instructors, Jeremy Teitelbaum (teitelbaum@math.uconn.edu) or Kyu-Hwan Lee (khlee@math.uconn.edu).