Machine Learning

Course # COMP 3073

Credits 6

Pre-requisites and Co-requisites: Artificial Intelligence, Statistics I

Course Description

According to Tom Mitchell "The field of Machine Learning is concerned with the question of how to construct computer programmes that automatically improve with experience". This course covers the basic concepts and techniques of Machine Learning from both theoretical and practical perspective. The material includes classical machine learning approaches such as Linear Regression and Decision Trees, more advanced approaches such as recurrent neural network and convolution neural network, etc. The course explains how to build systems that learn and adapt using examples from real-world applications.

Course Learning Outcomes

Upon completion of the course, the students should be able to:

- Explain different machine learning techniques and select appropriate learning techniques to solve a problem.
- Examine the computation complexity of different machine learning algorithms.
- Analyze machine learning algorithms using different performance evaluation metrices.
- Apply the machine learning algorithms to real-world problems.
- Implement machine learning algorithms using computer programing languages.

Course Assessments and Grading

Item	**Weight**
Activities	10%
Assignments/Presentations (10 assignments)	20%
Quizzes (5 quizzes)	15%
Midterm exam (Paper Exam + Project)	25%
Final exam (Paper Exam + Project)	30%