Course Description

Machine learning techniques are introduced including algorithms for implementing various stages of a machine learning system. Various stages include preprocessing, classification, clustering, regression analysis, and post processing. These stages can be implemented using statistical methods, non-parametric methods, neural networks, fuzzy inference systems, fuzzy neural systems.

Class Time

This class is offered asynchronously online. While you control when you watch videos and work on assignments, be aware of course pacing and specific deadlines.

Instructor Information

Dr. Robert P. Schumaker
Professor, Computer Science Dept.
rschumaker@uttyler.edu

Office Hours

DM through Slack (preferred), Zoom, email
      If your inquiry is grade-related, please make a Zoom or physical appointment
No appointments needed for Tuesdays and Thursdays 12:30pm – 2:00pm in COB 315.05

Textbook Information

Machine Learning (Mitchell)
www.cs.cmu.edu/~tom/mlbook.html

Course Objective

This course is designed with the following goals:
- Identify methods for data cleaning, replacing missing data, and normalization
- Develop models for supervised classification using discriminant functions, neural networks and fuzzy logic systems
- Develop clustering models using K-means clustering, neural networks and fuzzy logic systems
- Develop software to analyze data using decision trees

Computer Account Access

Students will need a Patriot account and password for computer access. This information can be found at https://www.uttyler.edu/ccs

Course Documents and Slides

This class will use Canvas for course documents, slides, quizzes and other class-related materials. Students are encouraged to check the website frequently during the course of the semester to keep up to date about course activity.

Course Grading
Course evaluation will be based on the following:

Quizzes (6 @ 20 points each, drop 1)	100
Total Points	100

Grading Scale

A	85.0 points or more
B	70.0 to 84.999 points
C	55.0 to 69.999 points
D	40.0 to 54.999 points
F	39.999 points or less

Course Policies

1. Quizzes – Quizzes will be given throughout the course and will test the student's mastery of the material. Missed quizzes cannot be made up without acceptable emergency-related documentation. The lowest quiz will be dropped.

Tentative Course Schedule and Assignments

Date	Concept	Quizzes
Jan 9-15	YOLO	
	Straight trippin	Q1
Jan 16-22	Introduction to Machine Learning	
Jan 23-29	Introduction to R	
	Clean & Analyze Data	Q2
Jan 30-Feb 5	Clustering and kNN	
	Decision Trees	Q3
Feb 6-12	Naive Bayes	
	Genetic Algorithms	Q4
Feb 13-19	Neural Networks	
	Support Vector Machines	Q5
Feb 20-25	Machine Learning Exercises	
	Text Analytics	Q6