ENG335 Machine Learning

Level: 3
Credit Units: 5 Credit Units
Language: ENGLISH
Presentation Pattern: EVERY JULY

Synopsis:

ENG335 Machine Learning introduces machine learning, covering both supervised and unsupervised algorithms. Bias-variance trade-off is discussed for selecting the appropriate models. Neural networks and convolutional neural networks are introduced. Students have the opportunity to deploy the algorithms and fine-tune the parameters. Students are required to develop and deploy a machine learning algorithm to solve a real-world challenge.

Topics:

- Introduction to machine learning
- Supervised Learning
- Linear and Logistic Regressions
- Naive Bayes Learning
- Support Vector Machines
- Decision Trees and Random Forests
- Bias-Variance Tradeoff
- Unsupervised Learning
- K-means clustering
- Neural networks and Convolutional neural networks
- Tensorflow for machine learning
- Machine learning in the cloud

Learning Outcome:

- Prepare data for machine learning algorithm
- Construct support vector machines for classification.
- Set up decision trees, random forest for classification.
- Rate the performance of clustering algorithm
- Design neural network based classifiers
- Propose suitable machine learning algorithms
- Estimate the performance metrics of learning algorithms
- Assess the impact of hardware performance on the machine learning algorithms

Assessment Strategies - Regular Semester (Daytime Class):

Components	Description	Weightage Allocation (%)
Overall Continuous Assessment	GROUP BASED ASSIGNMENT 1	15
	GROUP BASED ASSIGNMENT 2	15
Overall Examinable	ECA	70

Components		
Total		**100**

*The information listed is subject to review and change.