

Fall 2023

DS 644-005: Introduction to Big Data

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Textbooks:

None required

Grading: 20% mid-term, 80% course project

Course Overview: This course is a hands-on introduction to big data methods. We will study machine and deep learning methods for high dimensional data and for large number of samples. We will also look at parallel and distributed methods for big data.

Course plan:

Topic	Date	Notes
Introduction		
Machine learning - linear regression and support vector machines		
Deep learning - neural networks		
Deep learning - running neural networks in Keras		
Dimensionality reduction - feature selection, principal component analysis		
Large number of samples - stochastic gradient descent, mini batch methods		
Parallel and distributed methods - mapreduce, GPUs, multicore CPUs		
Project presentations		