COMP 7745 Machine Learning

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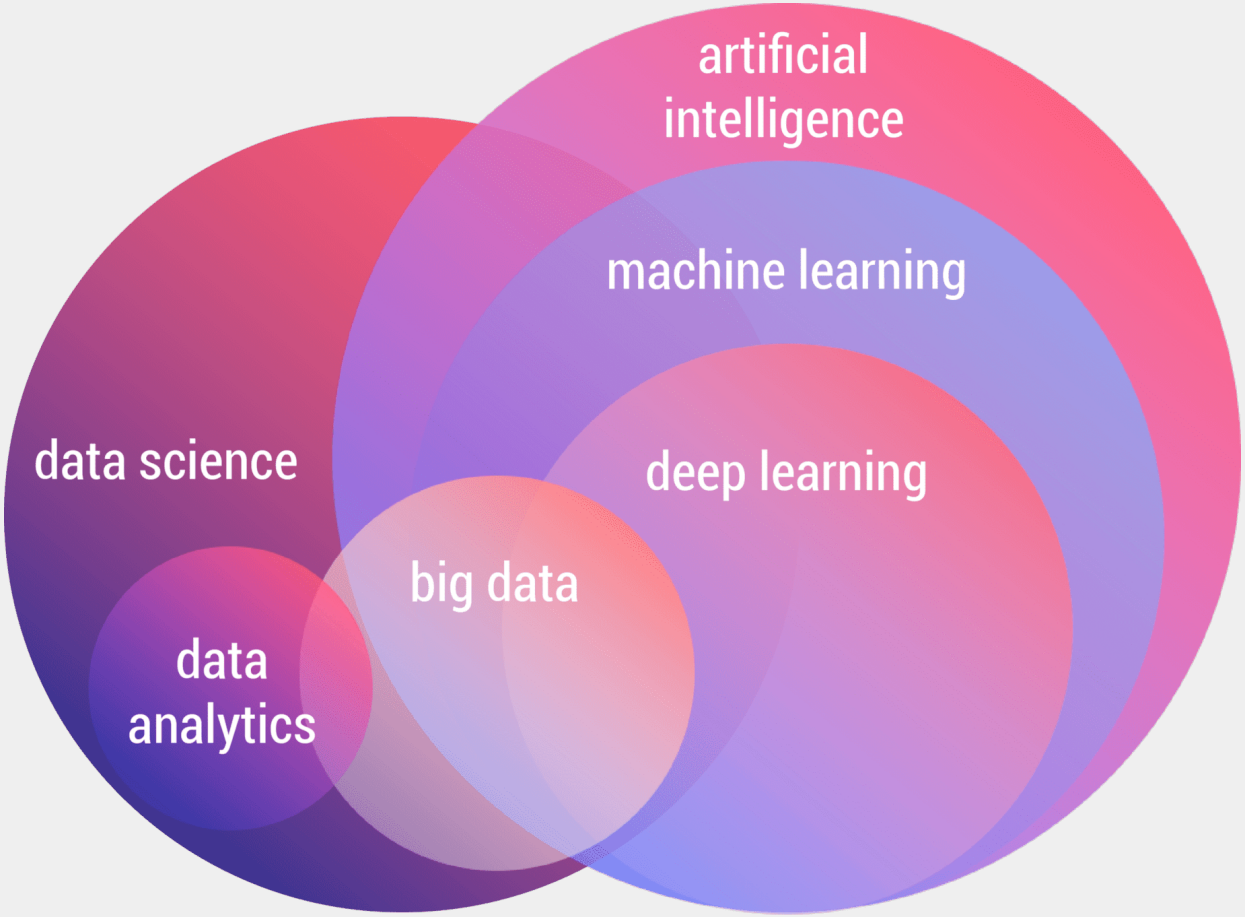
- Course website will host all course materials
- Canvas will be used only for assignment submissions
- E-mail will be used for any updates and notifications

- Prerequisites
  - Math: basic Linear Algebra, Calculus, and Probability Theory
  - Programming: proficient with Python
- Course materials
  - No required textbook
  - Slides ($\sim 80\%$)
  - Whiteboard ($\sim 20\%$)

- Modern AI and deep learning (not exactly the topics found in Syllabi)



- Unit 1. Foundations
- Unit 2. Supervised Learning
- Unit 3. Unsupervised Learning
- Unit 4. Reinforcement Learning

- Machine Learning Basics
- Linear Models
- Non-linear Models

- Neural Networks Basics
- Convolutional Neural Networks
- Recurrent Neural Networks
- Optimization and Stochastic Gradient Descent
- Transformers

- Autoencoders
- Variational Autoencoder
- Generative Adversarial Networks
- Contrastive Learning

- Intro to Reinforcement Learning
- Markov Decision Process
- Deep Reinforcement Learning

- Grading Rubric
- Assignments
- Course Project
- Details are in course website

- Don't cheat!
- Following instructions about assignments and course project on course website exactly
- Put in efforts