COMP/EECE 4741/6741
Intro to Neural Networks

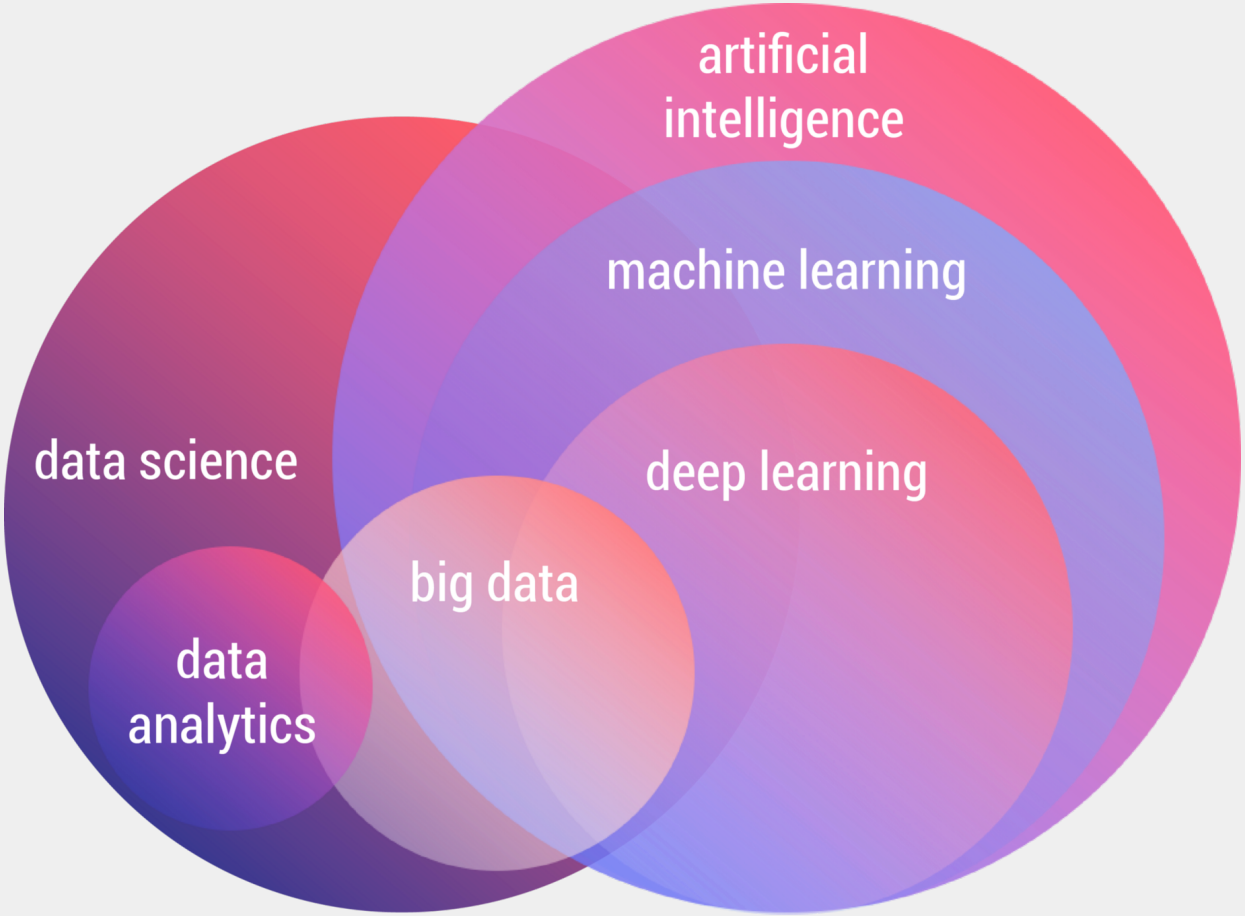
Weizi Li

Department of Computer Science
University of Memphis

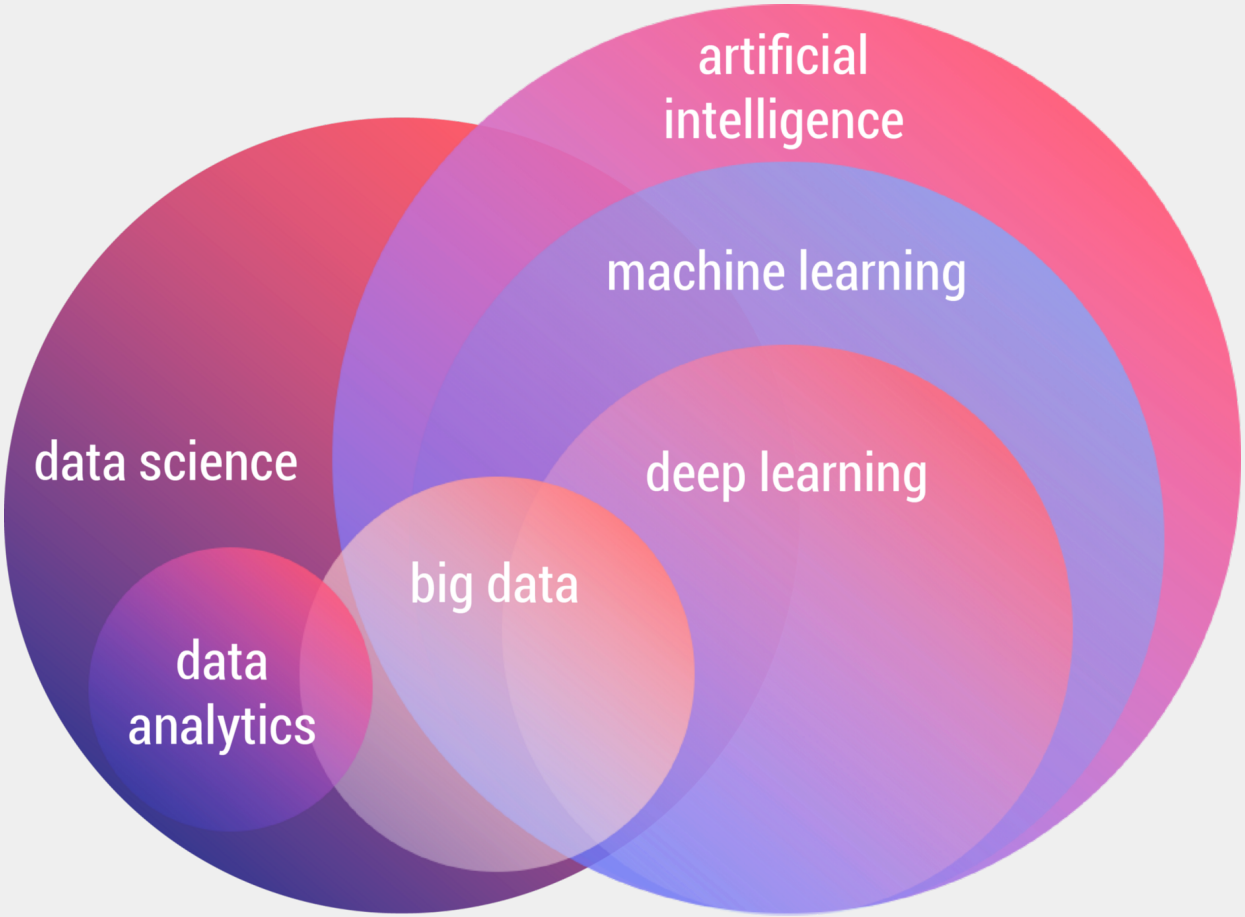
Basic Information

- Course website has everything (nothing on Canvas)
- E-mail for updates, notifications, submissions
- Prerequisites
  - Math: basic Linear Algebra, Calculus, and Probability Theory
  - Programming: proficient with Python
- Course material
  - No required textbook
  - Suggested reading (optional, very theoretical)
  - Slides ($\sim 80\%$) + whiteboard ($\sim 20\%$)
- Assignments
  - 8 programming tasks
  - In-class activity (lab) and after-class activity
- Course Project
- Grading Rubric

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



- COMP 4151 Intro to Data Science
- COMP 4745 Intro to Machine Learning



- Unit 1: Foundations
  - Machine Learning Basics
  - Linear Models
  - Non-linear Models
- Unit 2: Supervised Learning
  - Neural Networks Basics
  - Convolutional Neural Networks
  - Recurrent Neural Networks
  - Transformers

- Unit 3: Unsupervised Learning
  - Autoencoders
  - Information Theory Basics
  - Variational Autoencoders
  - Generative Adversarial Networks
- Unit 4: Reinforcement Learning
  - Reinforcement Learning Basics
  - Markov Decision Process
  - Q-Learning
  - Deep Reinforcement Learning