CS470:
Introduction to Artificial Intelligence

Course Description

This is an undergraduate-level introductory course for artificial intelligence. There have been enormous advances in the field of artificial intelligence over the past few decades, but it is not easy to see what frontiers the current AI is facing and what underlying methods are used to enable these advances. This course aims to provide an overview of traditional/emerging topics and applications in AI, and basic skill sets to understand/implement some of the latest AI algorithms. Some (tentative) topics that will be covered in this course include:

1. Visual recognition (image classification, object detection, semantic segmentation).
2. Natural language understanding (machine translation, text summarization).
3. Generative models (image/audio/text synthesis).

To understand each topic, we will learn some basics in deep learning, such as various neural network architectures, loss functions, optimization techniques, etc., together with machine learning libraries to implement these ideas, such as Pytorch or Tensorflow.

This is an introductory class for general topics in AI and deep learning, and we encourage the students who want to learn more on each specific topic to take the advanced courses (e.g. CS484, CS494).

Instructor

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Teaching Assistant

TBD

Textbook

TBD

Prerequisites

Undergraduate-level courses for linear algebra, discrete mathematics, machine learning (optional), statistics (optional)
Students are expected to be familiar with Python programming (we encourage to learn Python if not).

Grading (tentative):

Mid-term: 30%
Assignment: 30%
Final project: 40%