Related AI Classes

CS229 covered a broad swath of topics in machine learning, compressed into a single quarter. Machine learning is a hugely interdisciplinary topic, and there are many other sub-communities of AI working on related topics, or working on applying machine learning to different problems.

Stanford has one of the best and broadest sets of AI courses of pretty much any university. It offers a wide range of classes, covering most of the scope of AI issues. Here are some some classes in which you can learn more about topics related to CS229:

AI Overview

- CS221 (Aut): Artificial Intelligence: Principles and Techniques. Broad overview of AI and applications, including robotics, vision, NLP, search, Bayesian networks, and learning. Taught by Dr. Peter Norvig (Google) and Professor Sebastian Thrun, who works on autonomous cars and led the winning DARPA Grand Challenge team.

Robotics

- CS223A (Win): Robotics from the perspective of building the robot and controlling it; focus on manipulation. Taught by Professor Oussama Khatib, who works on mobile manipulation and many aspects of robotics (and built the big robots in the AI Lab).

- CS225A (Spr): A lab course from the same perspective, taught by Professor Khatib.

- CS225B (Aut): Robot programming lab. A lab course where you get to play around with making mobile robots navigate in the real world. Taught by Dr. Kurt Konolige (Willow Garage).

- CS277 (Spr): Experimental Haptics. Teaches haptics programming and touch feedback in virtual reality. Taught by Dr. Federico Barbagli and by Professor Ken Salisbury, who works on robot design, haptic devices/teleoperation and robotic surgery.

Probabilistic Methods

- CS228/CS228T (Win/Spr): Probabilistic models in AI. Bayesian networks, hidden Markov models, Markov random fields, and planning under uncertainty. Taught by Professor Daphne Koller, who works on computational biology, computer vision, graphical models, learning, and more.

Perception & Understanding

- CS231B (Aut/Win): Introduction to computer vision. Algorithms for processing and interpreting image or camera information. Taught by Professor Fei-Fei Li, who works on computer vision as well as human vision.

- CS224N (Aut): Natural language processing, including parsing, part of speech tagging, information extraction from text, and more. Taught by Professor Chris Manning, who co-authored one of the most widely used textbooks on NLP.

- CS224U (Win): Natural language understanding, including computational semantics and pragmatics, with application to question answering, summarization, and inference. Taught by Professor Dan Jurafsky, who also co-authored one of the most-used textbooks on NLP, and Dr. Bill MacCartney.

- CS276 (Spr): Text information retrieval. Representations for text, probabilistic retrieval models, web search algorithms, document clustering and classification, and text mining. Taught by Dr. Pandu Nayak and Professor Prabhakar Raghavan.

- CS224W (Aut): Social and Information Network Analysis. Learning and other algorithms for reasoning about social and other networks. Taught by Professor Jure Leskovec, who works on social and information networks.

- CS448B (Aut): Data Visualization. Graphic design, psychology, and cognitive science for designing visualizations to help users understand their data. Taught by Professor Jeffrey Heer, who works on visualization.

Large scale algorithms

- EE364A (Win): Convex Optimization. Convexity, duality, convex programs, interior point methods, algorithms. Taught by Professor Stephen Boyd, who works on optimization and its application to engineering problems.

- CS246 (Win): Mining Massive Datasets. Dealing with big datasets, with an emphasis on parallel processing and on web and social network data. Taught by Professor Jure Leskovec.

Multi-agent systems

- CS224M (Spr): Multi-agent systems, including game theoretic foundations, designing systems that induce agents to coordinate, and multi-agent learning. Taught by Professor Yoav Shoham.

- CS227B (Spr): General game playing. Reasoning and learning methods for playing any of a broad class of games. Taught by Professor Michael Genesereth, who works on computational logic, enterprise management and e-commerce.

AI Project courses

- CS294A/CS294W (TBD): Deep Learning and Unsupervised Feature Learning. A research project course in which we'll work on developing new learning algorithms. Focus on developing unsupervised algorithms that can learn rich feature representations from images, audio, text, and other inputs and be applied to classification, object recognition, clustering, etc. Limited enrollment. Taught by Professor Andrew Ng.

- CS294A/CS294W (TBD): Holistic scene understanding. Also a project course. Computer vision algorithms to fully understand a natural scene, including reasoning about its many aspects such as 3D geometry, location (indoors vs. outdoors), category (beach, urban, rural), objects in the scene, and activities. Course will develop a unified model and framework that simultaneously addresses these problems. Taught by Professor Daphne Koller