

Related AI Classes

CS229 covered a broad swath of topics in machine learning, compressed into a single quarter. Machine learning is a hugely inter-disciplinary 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. Usually taught by Professor Andrew Ng.

Robotics

- CS223A (Win): Robotics from the perspective of building the robot and controlling it; focus on manipulation. Taught by Professor Oussama Khatib (who builds the big robots in the Robotics 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).
- CS226 (Win): Statistical techniques in robotics. Algorithms for mobile robots; emphasis on robotic perception (localization and mapping). Taught by Professor Sebastian Thrun, who works on autonomous cars and led the winning DARPA Grand Challenge team.
- 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, robotic surgery, and more.

Knowledge Representation & Reasoning

- CS222 (Win): Rational agency and intelligence interaction (formerly logical KR and reasoning). Taught by Professor Eric Pacuit, Professor Yoav Shoham and Professor Johan van Benthem.
- CS227 (Spr): Reasoning methods in AI. Algorithmic methods such as search, CSP, planning. Taught by Dr. Neil Yorke-Smith (SRI).

Probabilistic Methods

- CS228/CS228T (Win): 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, Bayes nets, learning, computational game theory, and more.

Perception & Understanding

- CS223B (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.
- CS224S (TBD): Speech recognition and synthesis. Algorithms for large vocabulary continuous speech recognition, text-to-speech, conversational dialogue agents. Taught by Professor Dan Jurafsky, who co-authored one of the two most-used textbooks on NLP.
- CS224N (Spr): Natural language processing, including parsing, part of speech tagging, information extraction from text, and more. Taught by Professor Chris Manning, who co-authored the other of the two most-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 and Professor Chris Manning.
- CS276 (Aut): Text information retrieval. Representations for text, probabilistic retrieval models, web search algorithms, document clustering and classification, and text mining. Taught by Professor Manning and Professor Prabhakar Raghavan.

Multi-agent systems

- CS224M (Aut): Multi-agent systems, including game theoretic foundations, designing systems that induce agents to coordinate, and multi-agent learning. Taught by Professor Yoav Shoham, who works on economic models of multi-agent interactions.
- 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.

Convex Optimization

- EE364A (Spr): 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.

AI Project courses

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