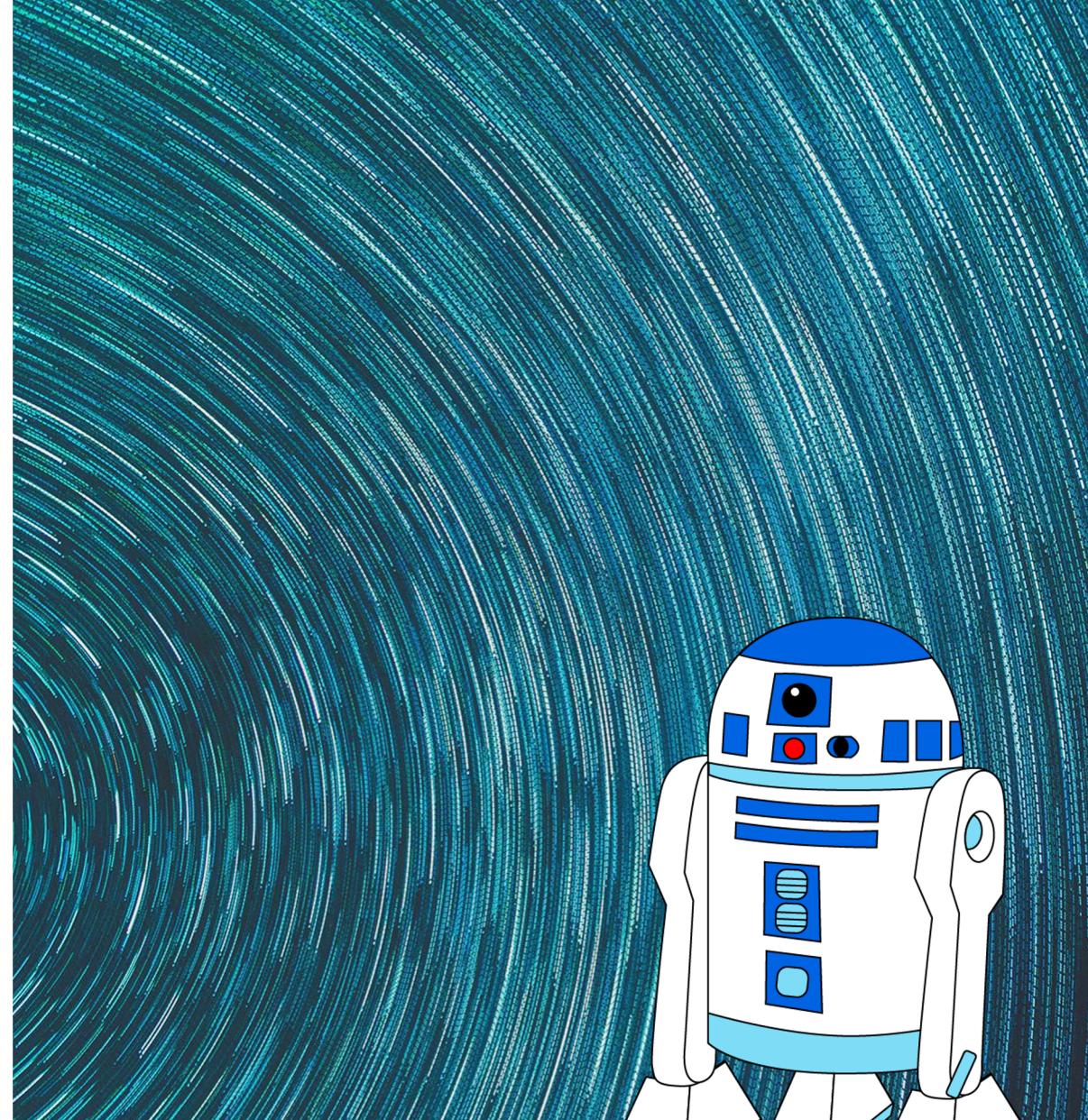


CIS 421/521:  
ARTIFICIAL INTELLIGENCE

Welcome to  
the Course!



# CIS 421/521 Waitlist Update

We reached the max course enrollment of 150 students. There are an additional 300 students still on the waitlist.

I'm going to offer another section of the class on MW from 8:30am-10am, which will **open an additional 200 slots**.

**If you're in the room now and don't have a permit - please leave now and come to Heilmeier auditorium at 8:30am on Wednesday instead.** Or watch the videos online.

If you are a graduate student who is unable to come to Penn this semester, you can also take the course online. I've created a special section for that. Email Lee Dukes to register for it:  
Lee Dukes <[ldukes@seas.upenn.edu](mailto:ldukes@seas.upenn.edu)>

# Welcome to CIS 421/521

Professor Chris Callison-Burch (he/him)

- Office hours are Fridays from 2pm-3pm via Zoom
- Preferred method of contact: Piazza

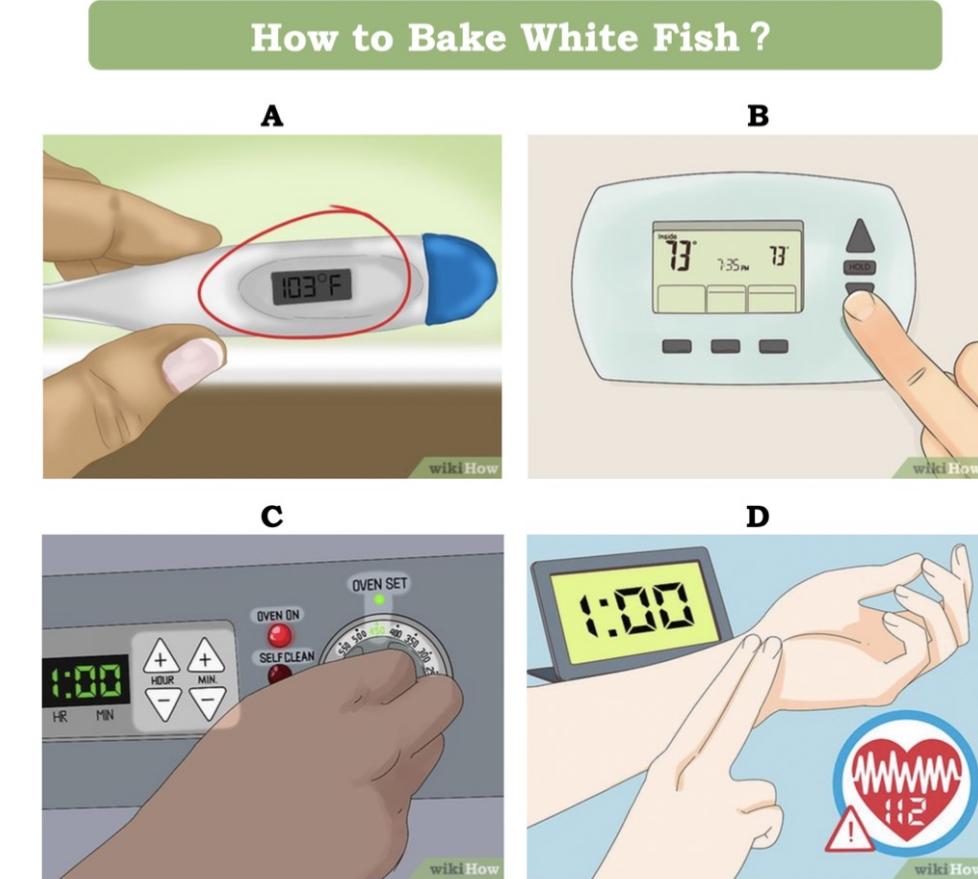
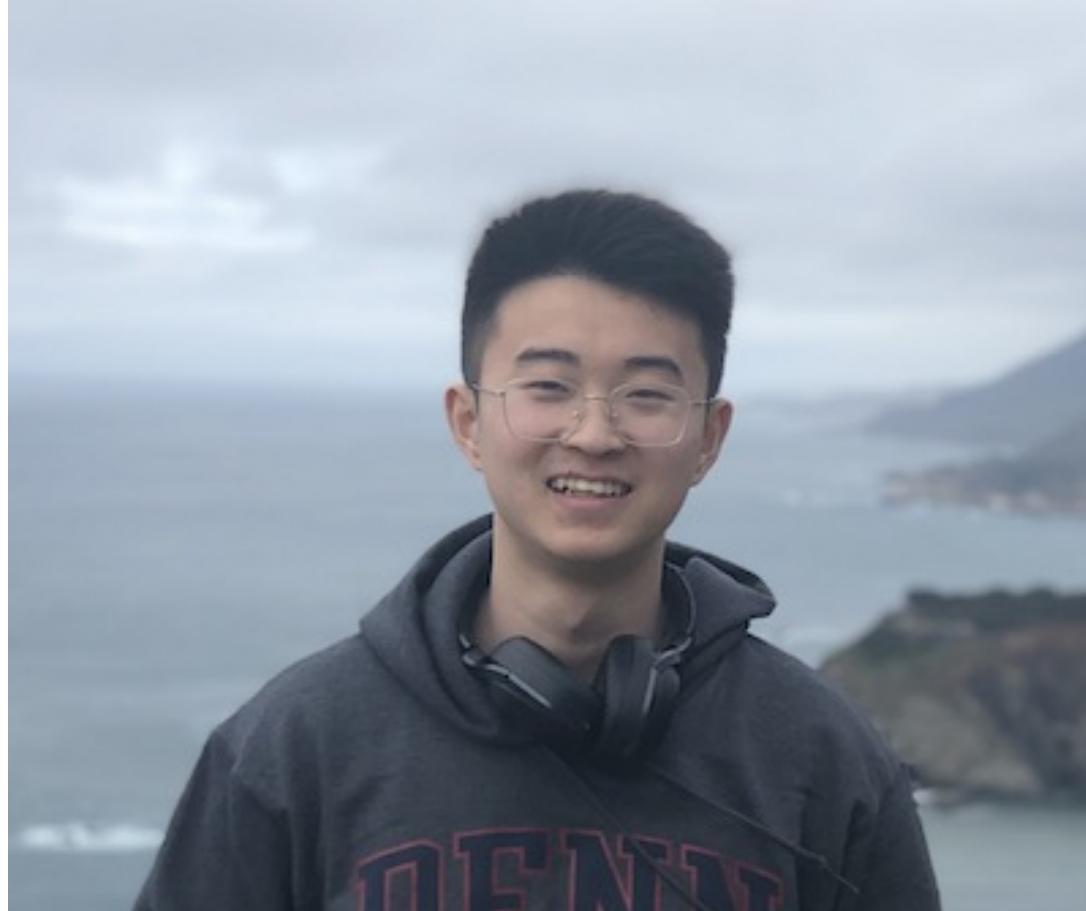
My Research Focus:

- Natural Language Processing
- How can we build artificial intelligence that understands human languages?
- Translation between different languages
- Natural language inference

About me: I've got two kids ages 4.5 and 8. I like to listen to roleplaying game podcasts. I want to build an AI that can play Dungeons and Dragons.



# Yue Yang - Head TA



# Course staff



**Amy Guo** (she/her)



**Anna Orosz** (she/her)



**Artemis Panagopoulou**  
(she/her)



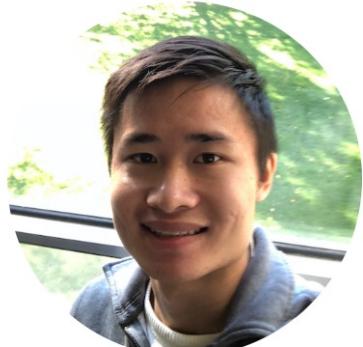
**Coco Zhao** (she/her)



**Etan Ginsberg** (he/him)



**Hanbang Wang** (he/him)



**Harry Wang** (he/him)



**Henrique Martins dos  
Santos** (he/him)



**John Wallison** (he/him)



**Kit Wiggin** (he/him)



**Lisa Zhao** (she/her)



**Samar Haider** (he/him)



# Welcome to CIS 421/521

- Course web page: <http://artificial-intelligence-class.org>
  - Lecture slides on web page
  - Homeworks on web page
- Discussion on Piazza (link on course home page)
- Homework submission via Gradescope
- You do not have to come to class
  - Lectures will be recorded and posted after lecture
  - Pre-recorded videos are also available!
- Prerequisites:
  - Good knowledge of programming, data structures
  - Enough programming experience to *master* Python after introductory lecture
  - Introductory probability and statistics, and linear algebra will be *very useful*

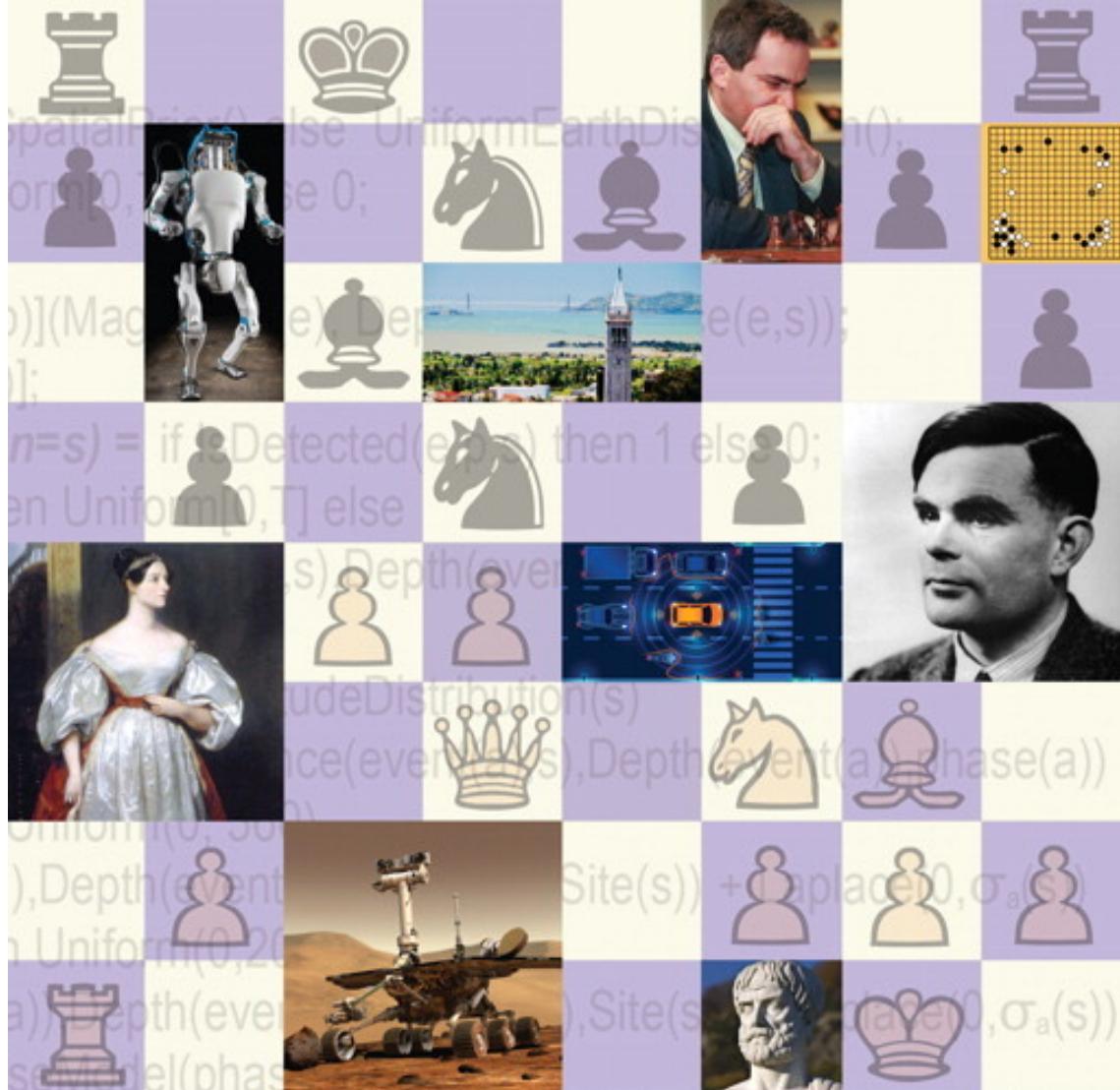
# Course Textbook

Stuart Russell and Peter Norvig  
**Artificial Intelligence: A Modern Approach** Pearson Series in Artificial Intelligence, 2020, **Fourth Edition**

The textbook is 1000 pages long and covers core ideas that were developed as early as the 1950s.

This is a brand-new edition of the classic textbook which adds sections on deep learning, natural language processing, causality, and fairness in AI.

You can rent a digital copy from the Penn bookstore for \$40.



# Artificial Intelligence

## A Modern Approach

*Fourth Edition*

# Grading and Homework

- Grading:
  - 70% for homework assignments
  - 30% for exams and quizzes
  - Up to about 3-5% for optional Extra Credit Projects
- Homework:

There is roughly one homework assignment per week, aside from weeks with exams. Students enrolled in CIS 421 may skip one HW assignment, or they may discard their lowest scoring HW assignment. You do not get late days back on the homework that you discard. Students enrolled in CIS 521 must complete all HW assignments and cannot discard their lowest scoring assignment.

Homework will be due at 11:59pm Eastern on specified dates (usually Tuesdays).

Each student has 5 free “late days”. Home works can be submitted at most two days late. If you are out of late days, then you will not be able to get credit for subsequent late assignments. One “day” is defined as anytime between 1 second and 24 hours after the homework deadline.

# Collaboration Policy

Unless otherwise noted, **you are not allowed to work in groups** on the homework assignments. You can discuss homework problems with others (you must explicitly list who you discussed problems with on each homework submission), but **all code must be your own independent work**. You are not allowed to upload your code to publicly accessible places (like public github repositories), and you are not allowed to access anyone else's code. If you discover someone else's code online, please report it to the course staff via a private note on Piazza.

All code will be run through a plagiarism check. Suspicions of plagiarism will be adjudicated by the Office of Student Conduct.

**For extra credit assignments, you may work in pairs**

**Last semester, I found someone selling assignment solutions**

# CIS 421/521 compared to other Penn courses

There are many courses at Penn related to Artificial Intelligence:

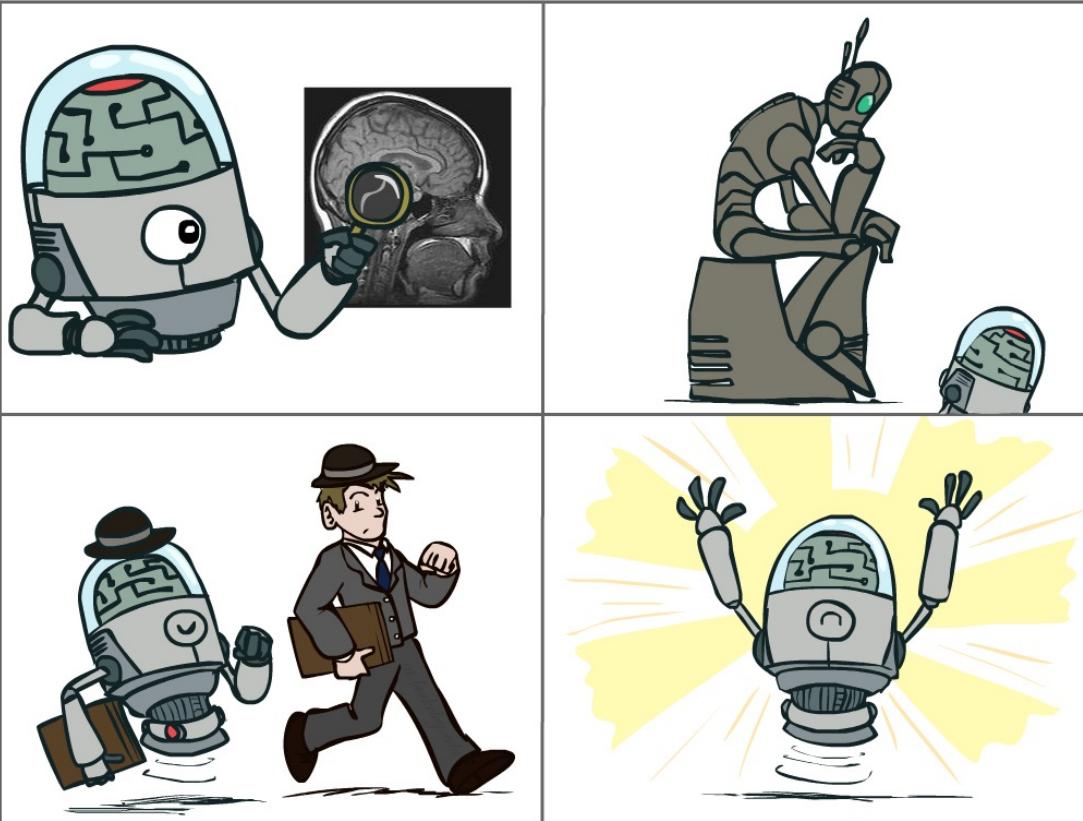
- CIS 419/519 – Applied Machine Learning
- CIS 520 – Machine Learning
- CIS 522 – Deep Learning
- CIS 530 – Computational Linguistics
- CIS 580 – Machine Perception
- MEAM 420/520 – Introduction to Robotics

CIS 421/521 covers a broad overview of AI so parts of it will overlap with other courses.

# What is AI?

The science of making machines that:

Think like people



Think rationally

Act like people

Act rationally

Slide from Dan Klein and Pieter Abbeel of UC Berkeley