Administrivia

Geometric Algorithms
Lecture 0

CAS CS 132

What is this course?

linear algebra for computer science

linear algebra with a data science bent

linear algebra + numpy, scipy, etc.

preparation for ML, data science, graphics,...

not geometric algorithms in the traditional sense

see course schedule for full details

Why are we doing this?

geometric thinking is fundamental:

» nearest neighbors

» separating hyperplanes

linear algebra is fundamental:

» PageRank

» Singular Value Decomposition (SVD)

» neural networks, support vector machines, convolution

How is this course run?

material is on the course website

discussion + announcements are on Piazza

submission + grading is on Gradescope

What do lectures look like?

- We will not take attendance in lectures, but it is highly recommended that you attend
- If something is said in lecture and not on Piazza there is no excuse for missing the information
- Barring technical issues, lectures will be **recorded**

I hear we do some programming?

Yep, we'll be using **Python** and a collection of libraries (see the course webpage for details)

We will assume access to a shell. The best option is to use **VSCode**

If you're on Windows, I generally recommend installing a WSL environment

What's the workload?

(it's a fair amount, but hopefully still fair)

2 lectures / week

1 discussion section / week

1 assignment (with some programming) / week

1 lab / 2 weeks

1 quiz / 2 weeks

2 exams (midterm, final)

How are we graded?

15% Assignments (12 total, 2 dropped)

15% Labs (6 total, 1 dropped)

25% Quizzes (6 total, 2 dropped)

20% Midterm Exam (October 21 during class)

25% Final Exam (Date TBD, Cumulative)

What do assignments look like?

- Assignments are written at-home evaluations
- Assignments are due weekly by 8:00PM on Thursdays, one week after the release date. No late submissions (the submission will be open until 11:59PM, with no penalty)
- Assignments are submitted via **Gradescope.** Regrades are open for a week after submission
- Solutions must be your own. Sources must be cited. No group submissions
- We will automatically drop your lowest 2 assignment scores

What do labs look like?

- Labs are collections of programming tasks
- They are released every other week on Monday and are due the following week on **Thursday by 8PM** (along with assignments
- You will have a chance to start them during your discussion section
- We will automatically drop your lowest lab score

What do quizzes look like?

- Quizzes are administered every other week during your discussion section
- They will consist of a small collection of written questions similar to homework assignments
- We'll drop your two lowest quiz scores, but **you must take the quiz in order for it to be dropped**

Anything else?

This is just an outline of the course**. You must read the entire course manual**

Please contact me as soon as possible if you need disability accommodations

Don't hesitate to suggest how to make this course better

Wait, what about Generative AI?

You'll notice that this course puts a lot of weight on in-class evaluation...

This is so we can maintain the policy: *Generative AI is allowed for assignments and labs*

That said, use your best judgment. Don't abuse this privilege

Generative AI is great for studying, but *you can't use it for quizzes and exams*

Lastly...

We are human

It's important to meet people where they are

We are here to help you succeed, we take this seriously

This course is always changing, some things work, some don't

I'm sure I missed something. Ask questions on Piazza!

!!READ THE COURSE MANUAL!!