

CSCI 3202

Lecture 6

September 5, 2025



Speed Bump: <https://speedbump.com>

Announcements

- Office Hours are posted on Canvas. Please ask for help if you need it

CSCI 3202 Fall 2025
Office Hours

Name	Day	Hours	Location	Zoom Links	
Jim Dykes james.dykes@colorado.edu	M	10:00 am-11:30 am	ECOT 637	Marissa	https://cuboulder.zoom.us/j/3250067930
	W	2:30 pm-4:00 pm	ECOT 637	Jay	https://cuboulder.zoom.us/j/99845303159
	F	10:00 am-12:00 pm	ECOT 637	Kevin	https://cuboulder.zoom.us/j/95306328022
Jay Vakil Jay.Vakil@colorado.edu	T	1:00 PM - 2:00 PM	ECOT 832	Sanish	https://cuboulder.zoom.us/j/7220745774
	Th	3:00 PM - 4:00 PM	Zoom		
	F	3:00 PM - 4:00 PM	Zoom		
Marissa Chitwood Marissa.Chitwood@colorado.edu	M	10:00 am - 11:00 am	Zoom		
	T	11:30 pm - 12:30 pm	Zoom		
	Th	1:00 pm - 3:00 pm	Zoom		
Tarun Nagelli tana5131@colorado.edu					
Kevin Wang Kevin.Wang-2@colorado.edu	T	3:00 pm - 5:00 pm	Zoom		
	W	4:30 pm - 5:30 pm	CSEL		
	Th	11:00 am - 12:00 pm	Zoom		
	F	4:30 pm - 6:00 pm	CSEL		
Sanish Goel Sanish.Goel@colorado.edu	M	4:00 pm - 6:00pm	CSEL		
	T	5:00 pm - 6:00 pm	CSEL		
	Sun	2:00 pm - 4:00 pm	Zoom		

- Homework 2 due on Wednesday, Sept 10 by 11:59 pm
 - In addition to util4e.py, you will need to copy util.py to make your code work
- Quiz #2 in class on Today
 - Covers BFS, DFS, Path

Readings

- AIMA sections 3.4-3.6 for today
- Subjects: UCS, Greedy, A*

Lecture

- UCS Search
 - Uninformed
 - Weighted BFS Search
 - Uses Priority Queue with path cost so far as the metric
 - Path Cost is the sum of the individual step costs for a path
- A* Search
 - Informed search
 - A* search adds a heuristic that provides an estimated distance to the goal
 - We add the path cost to node n to the heuristic for node n to the goal to get the estimated distance
 - Use this estimated distance in UCS
 - This can greatly reduce the number of nodes visited to construct an optimal path

- Greedy Search
 - Informed search
 - Defines a heuristic function
 - Heuristic is distance from a node to the goal (straight line)
- [UCS Greedy and AStar Slides.pdf](#)

Path

- For a GPS system, the path is the important item most people want. How do you construct the path?
- Start at the end and work backwards
 - Start at destination
 - Find the most recent node that explored the destination
 - Mark this node as being on path
 - Repeat with this node as destination
 - Done when you reach the starting node
- Often implemented as a Python dictionary
 - Each node is a key
 - Value is node that visited or explored it
 - If there are multiple explorations, dictionary only keeps most recent one

Next Class

- More A*
- Heuristics