

CM 146 Syllabus

Week of	Synchronous lectures	Lecture Topics	Discussion section	Readings	Programming Assignments	Games discussed	Deliverables
6/24/24 - 6/28/24	6/24/24	Course Administration and Themes Forward Search Path Planning Meets World Models	Python Intro P1 Readings Games to unpack	R1: Can you read me? R2: Amit Patel's Introduction to A*	P1: Navmesh Pathfinding	Pong, Rome II, Façade	Readings Q&A
7/1/24 - 7/5/24		Photoshop of AI Monte Carlo Tree Search Constraint Solving	P2 Readings One AI to rule them all?	R3: The Photoshop of AI Debate R4: MCTS in AlphaGo R5: Dungeon Feng Shui	P2: Infinite TicTacToe	AlphaGo, Mario Sudoku, Alcazar, Infinite Refraction	Readings Q&A P1
7/8/24 - 7/12/24		Agent Control via Finite State Machines Reactive Control with Behavior Trees Rule Based Control	P3 Readings	R6: Domain Specific Languages R7: (extra credit) Harel on HFSPs R8: How Behavior Trees Work R9: PremWeek Unpacked	P3: Planet Wars	PacMan HALO 2 From Week	Readings Q&A P2
7/15/24 - 7/19/24		ABL (A Behavior Language) Goal Oriented Action Planning in F.E.A.R. Advanced Planning	P4 Readings Infinite TicTacToe competition results	R10: Structuring Content in Façade R11: GOAP	P4: Minecraft Planning	Façade F.E.A.R. KillZone 2	Readings Q&A P3
7/22/24 - 7/26/24		Utility models Procedural Content Generation Deep Learning	P5 Planet wars competition results	R12: Generative AI	P5: PCG Level Generation	Crivatars	P4
7/29/24 - 8/2/24	7/31/24	Generative AI and Large Language Models Midterms Review Acquiring Strategies from Players	P6 Generative AI	MIDTERM (Take home, 5 days)	P6: Deep Learning	Black & White	P5
8/5/24 - 8/9/24	8/9/24	Libratus Poker Unpacked Creative Projects Introduction Invited speaker: Craig Reynolds Steering behaviors and camouflage	Building prototypes in teams Brainstorming project ideas		Creative project	Libratus Poker	Midterm P6
8/12/24 - 8/16/24	8/12/24	Creative Project Comments Versu & Left4Dead Unpacked Personality in the Sims Unpacked	Creative Project progress	R13: Turing Tantrums R14: Player's Want Smart AI		Versu, Left4Dead Sims 1 - 3	Creative Project Plan
8/19/24 - 8/23/24	8/19/24	Invited Speaker: Rez Graham 10 Things All AI Devs Need to Know Assassin's Creed Unity Unpacked StarCraft Bots (two ways) Unpacked Class favorite game unpacked (TBD)	Do you want smart AI? Brainstorming the future of AI in games			Assassin's Creed Unity EvoBot AlphaStar	Readings Q&A
8/26/24 - 8/30/24	8/26/24 8/28/24 8/30/24	Creative Project Presentations I Creative Project Presentations II Creative Project Presentations III					Creative Project Final Report