Appeal statement

Yang Zou
Yza497
301385615

Exchange Course: CS 188 at UC Berkeley

SFU Credit that I am seeking: CMPT 417

Reasons:

- CS 188 is a fourth-year-level course at UC Berkeley.

- CS 188 covers almost all the topics of CMPT 417:

CS188 syllabus:

https://inst.eecs.berkeley.edu//~cs188/su21/

CMPT 417 syllabus:

http://www.sfu.ca/outlines.html?2021/spring/cmpt/417/d100

- Intractable AI and optimization problems
- Combinatorial and heuristic search
- Best-first search, bounded-suboptimal search, advanced heuristic search techniques
- A case study of the multi-agent pathfinding problem
- (Selective) applications in planning, multi-agent/robot systems, games, etc.

Lecture slides of CS 188 below shows the topics taught in CS 188(please see the attached files for more details.

2 -- Uniformed Search	2021/7/15 16:20	WPS PDF 文档	22,795 KB
3. -- A_ Search and Heuristics	2021/7/15 9:50	WPS PDF 文档	26,703 KB
4 -- Game Trees I	2021/7/15 10:06	WPS PDF 文档	13,477 KB
5 -- Game Trees II	2021/7/15 10:47	WPS PDF 文档	19,348 KB
6 -- MDP	2021/7/15 16:20	WPS PDF 文档	28,938 KB
7 -- Reinforcement Learning I	2021/7/15 7:23	WPS PDF 文档	21,163 KB
8 -- Reinforcement Learning II	2021/7/15 7:24	WPS PDF 文档	13,563 KB
9 -- Probability	2021/7/15 7:25	WPS PDF 文档	6,927 KB
10 -- Bayes Net Representation	2021/7/25 13:01	WPS PDF 文档	17,519 KB
11 -- Bayes Net Independence	2021/7/25 13:02	WPS PDF 文档	10,923 KB
12 -- Bayes Net Inference	2021/7/25 13:02	WPS PDF 文档	17,111 KB
13 -- Bayes Net Sampling	2021/7/25 13:03	WPS PDF 文档	12,980 KB
14 -- Hidden Markov Models	2021/7/25 13:03	WPS PDF 文档	12,711 KB
15 -- Particle Filtering	2021/7/25 13:03	WPS PDF 文档	10,733 KB
16 -- Decision Networks	2021/7/25 13:04	WPS PDF 文档	10,704 KB
17 -- Naive Bayes I	2021/7/25 13:04	WPS PDF 文档	8,580 KB
18 -- Naive Bayes II	2021/8/17 17:14	WPS PDF 文档	10,244 KB
19 -- Perceptrons	2021/8/17 17:14	WPS PDF 文档	8,601 KB
20 -- Neural Networks I	2021/8/17 17:15	WPS PDF 文档	12,631 KB
21 -- Neural Networks II	2021/8/17 17:15	WPS PDF 文档	33,319 KB
2021_06_xx_CVPR-keynote-Abbeel	2021/8/17 17:16	WPS PDF 文档	26,348 KB

It is obvious that **optimization problem, heuristic, all the tree searches, adversarial searches, offline/online search algorithms, MDP, Q learning for single/multiple agent game AI algorithms** are covered in the topics of CS188.

- The assignments of CS188 shows the application of all algorithms, and apply to create the AI for Pacman games which also matches the principle of CMPT 417(AI for multiple-agent game system).

Project syllabus of CS188:
https://inst.eecs.berkeley.edu/~cs188/su21/projects/

Projects Overview

Coding Diagnostic

This short UNIX/Python tutorial introduces students to the Python programming language and the UNIX environment.

P1: Search

Students implement depth-first, breadth-first, uniform cost, and A* search algorithms. These algorithms are used to solve navigation and traveling salesman problems in the Pacman world.

P2: Multi-Agent Search

Classic Pacman is modeled as both an adversarial and a stochastic search problem. Students implement multiagent minimax and expectimax algorithms, as well as designing evaluation functions.

P3: Reinforcement Learning

Students implement model-based and model-free reinforcement learning algorithms, applied to the AIMA textbook's Gridworld, Pacman, and a simulated crawling robot.

P4: BNs and HMMs: Ghostbusters

Probabilistic inference in a Hidden Markov Model tracks the movement of hidden ghosts in the Pacman world. Students implement exact inference using the forward algorithm and approximate inference via particle filters.

P5: Machine Learning: Classification

Students implement the perceptron algorithm and neural network models, and apply the models to several tasks including digit classification.