Version: March 12th, 2018 Tentative

Fudan University, School of Data Science
2017/2018 (2nd Term)

Course Code & Title: DATA620006 "Artificial Intelligence and Machine Learning"

Teaching staff

Instructor	
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TA	
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Course Communication

Course website	http://www.sdspeople.fudan.edu.cn/zywei/course/data130008.html
Course Time and Classroom	Wednesday 6:30pm – 9:15pm H3401 for lecture H4503 for lab

Course Description & Content

Artificial Intelligence (AI) aims to make a computer that can learn, plan and solve problems autonomously. AI applications include web search, speech recognition, face recognition, machine translation, autonomous driving, and automatic scheduling, etc. In this course, you will learn fundamental principles and techniques that drives such applications and have a chance to implement some of them. Specific topics include search, constraint satisfaction, game playing, Markov decision processes and logic. The main goal of the course is to equip students with the tools to tackle real problems in the era of big data.

Learning Activities

Activities	Number of Hours
Lecture	36
Lab	12

Reference Book

1. Stuart J. Russell, Peter Norvig (2009) Artificial Intelligence A Modern Approach, 3rd Edition.2009, Prentice Hall

Assessment Scheme

Task	Weight
Individual Project	50%
Competition Project	10%
Lab and Participation	10%
Final Exam	30%

Course Schedule (Subject to final confirmation)

Class/Week	Date	Topic	Reading
1	2018.03.07	Introduction to AI Uninformed Search	Chapter 1, 2, 3.1-3.4
2 **(调课)**	2018.03.14	Informed Search	Chapter 3.5-3.6
3 **(LAB)**	2018.03.21 **PJ1 out**	**Tutorial and Lab for Search Algorithm**	
4	2018.03.28	Constraint Satisfied Problem Local Search	Chapter 6 Chapter 4.1-4.2
5	2018.04.04	Adversarial Search Utility Theory	Chapter 5 Chapter 16
6 **(LAB)**	2018.04.11 **PJ1 - Due** **Competition PJ out** **PJ2 – Out**	**Tutorial and Lab for alph-beta Pruning**	
7	2018.04.18	MDP - 1 MDP - 2	Chapter 17.1-17.3
8	2017.04.25	RL - 1 RL - 2	Chapter 21.1 – 21.5
9 Lab	2017.05.02 **PJ2 - Due** **PJ3 - out**		
10	2017.05.09	HMM HMM - application	Chapter 15.1-15.5
11	2017.05.16	Bayes Net's I Bayes Net's II	Chapter 14.1 – 14.2
12 Lab	2017.05.23		
13	2017.05.30	Bayes Net's III Bayes Net's V	Chapter 14.4 – 14.5
14	2017.06.06 **PJ4 - Due**	Logic - 1	Chapter 7.1 – 7.5
15	2017.06.13	**Guest Lecture**	
16	2017.06.20	Exam	

PJ 1: Search (18 + 2 pts)
PJ 2: CSP (10 pt)
PJ 3: Blackjack (10 pt)
PJ 4: Car (10 pt)

competition PJ (10pts): Write an AI program for Gomoku (五子棋)