

# AI LAB Instruction

YAO ZHAO

# About me

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# Teaching Assistants

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# Outline

PROJECT INFORMATION

COURSE REQUIREMENTS

COURSE ARRANGEMENT



# Project Information

- ▶ 3 Projects, roughly:
  - ▶ The first 2 have 2 phases each
  - ▶ Phase inspection (阶段性检查)
- ▶ Knowledge Involved
  - ▶ Problem Solving
  - ▶ Uncertain Knowledge and Reasoning
  - ▶ Machine Learning

# Course Requirements

- ▶ Students should have basic independent programming skills
- ▶ Students should think deeply about algorithms and have the ability to apply algorithms and improve them.
- ▶ All project reports must be written according to the report template.
- ▶ Students should not copy other students' or senior students' codes and reports. Once found, it will be dealt with in strict accordance with the Plagiarism policy. Please think twice when you plan to share.

# Plagiarism Policy

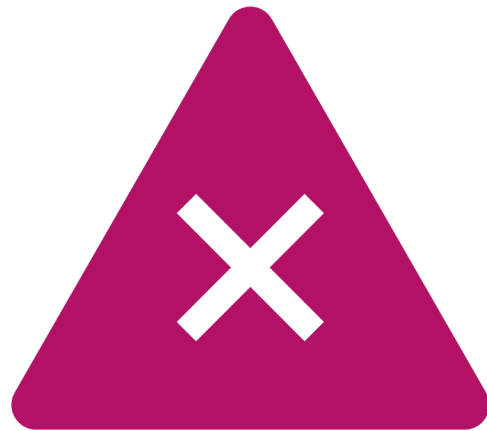
- ▶ **From Spring 2022**, the plagiarism policy applied by the Computer Science and Engineering department is the following:
  - ▶ \* If an undergraduate assignment is found to be plagiarized, **the first time the score of the assignment will be 0.**
  - ▶ \* **The second time the score of the course will be 0.**
  - ▶ \* If a student does not sign the Assignment Declaration Form or cheats in the course, including regular assignments, midterms, final exams, etc., in addition to the grade penalty, the student **will not be allowed to enroll in the two CS majors through 1+3, and cannot receive any recommendation** for postgraduate admission exam exemption **and all other academic awards.**
- ▶ As it may be difficult when two assignments are identical or nearly identical who actually wrote it, the policy will **apply to BOTH students**, unless one confesses having copied without the knowledge of the other.

# What is OK, and what isn't OK?

- ▶ It's OK to work on an assignment with a friend, and think together about the program structure, share ideas and even the global logic. At the time of actually writing the code, you should write it alone.
- ▶ It's OK to use in an assignment a piece of code found on the web, as long as you indicate in a comment where it was found and don't claim it as your own work.
- ▶ It's OK to help friends debug their programs (you'll probably learn a lot yourself by doing so).
- ▶ It's OK to show your code to friends to explain the logic, as long as the friends write their code on their own later.
- ▶ **It's NOT OK to take the code of a friend, make a few cosmetic changes (comments, some variable names) and pass it as your own work.**



No excuse will be accepted once  
plagiarism is discovered!



# Course Arrangement

- ▶ Explain the information for each project and share useful materials
- ▶ Explain the realization of the main algorithm in the theoretical study
- ▶ Collect common questions in projects and explain
- ▶ Share design ideas, experience, etc

# Programming Language

## ▶ We Use Python in Our Project

- ▶ Easy Syntax, Readability, High-Level Language, object oriented programming, free, etc.

## ▶ NumPy Package

- ▶ fundamental package for scientific computing
- ▶ It contains among other things:
  - ▶ a powerful N-dimensional array object
  - ▶ sophisticated (broadcasting) functions
  - ▶ tools for integrating C/C++ and Fortran code
  - ▶ useful linear algebra, Fourier transform, and random number capabilities
  - ▶ <http://www.numpy.org/>

# Course Website and Available Code

- ▶ The website for this course: <http://aima.cs.berkeley.edu>
- ▶ Relevant code available at : <https://github.com/aimacode>  
support for multiple languages: python, java, javascript and so on
- ▶ aima-python Installation

# Quick Start with Python

- ▶ <https://learnxinyminutes.com/docs/python3/>
- ▶ You can install python with anaconda which is a package manager  
<https://www.anaconda.com/download/>
- ▶ Python IDE: PyCharm  
<https://www.jetbrains.com/pycharm/download/#section=mac>



# Advice for Study

- ▶ When you need to understand the knowledge points in the book, you can run the demo and read some related code.
- ▶ Seriously do every project in the computer class
  - ▶ Ps: The lab topics in the computer class are the topics of the current frontiers of artificial intelligence. I hope everyone can think deeply.

# Reference Source Code

- ▶ `learnpython3.py`
- ▶ `learnnumpy.py`