



國立成功大學
National Cheng Kung University

Introduction to Artificial Intelligence

Course Overview

Wei-Ta Chu (朱威達)

Class Information

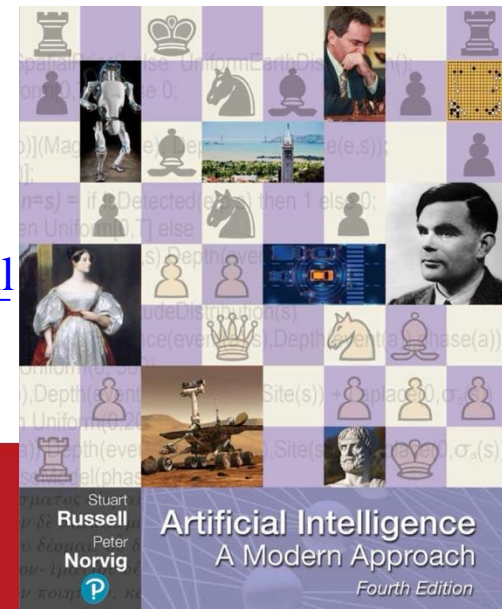
- 臺灣大專院校人工智慧學程聯盟 (Taiwan Artificial Intelligence College Alliance , TAICA)
- 113學年第1學期主導課程—封閉型授權
- TAICA願景和說明
 - <https://www.youtube.com/watch?v=JMQ1s46w05A>

Class Information

- Main Class Time: 13:10~16:00 Thursday
- Main Class Location: 成大資訊系館 4264, 4261; 線上
- Lecturer: Wei-Ta Chu (朱威達) (Office 資訊新館65B08)
- Textbook: Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach 4th edition, Pearson, 2020.
- Course website: NTU Cool

<https://cool.ntu.edu.tw>

http://mmcv.csie.ncku.edu.tw/~wtchu/courses/2024f_AI/index.html



Syllabus

- **Part 1: Artificial Intelligence**
- Part 2: Problem Solving
- Part 3: Knowledge, Reasoning, and Planning
- **Part 4: Uncertain Knowledge and Reasoning**
- **Part 5: Machine Learning**
- **Part 6: Communicating, perceiving, and acting**

Schedule

Week	日期	安排	備註
1	9月12日	Introduction, Intelligent Agents	
2	9月19日	Intelligent Agents	hw1公布 (project分組、主題方向制定)
3	9月26日	Solving Problems by Searching	
4	10月3日	Search in Complex Environments	hw1繳交、hw2公布
5	10月10日	國慶日放假	
6	10月17日	Search in Complex Environments	
7	10月24日	Quantifying Uncertainty	hw2繳交、hw3公布(project期中報告)
8	10月31日	Learning from Examples	
9	11月7日	Learning from Examples	hw3繳交, hw4公布
10	11月14日	Learning Probabilistic Models	
11	11月21日	Learning Probabilistic Models	hw4繳交, hw5公布(final project short video)
12	11月28日	Deep Learning	
13	12月5日	Final Exam (同時段同步考試)	
14	12月12日	Deep Learning for Natural Language Proce	hw5繳交
15	12月19日	Computer Vision	
16	12月26日	Final project報告 (優選團隊、線上線下同步報告)	
17	1月2日	彈性學習	
18	1月9日	彈性學習	

Grading

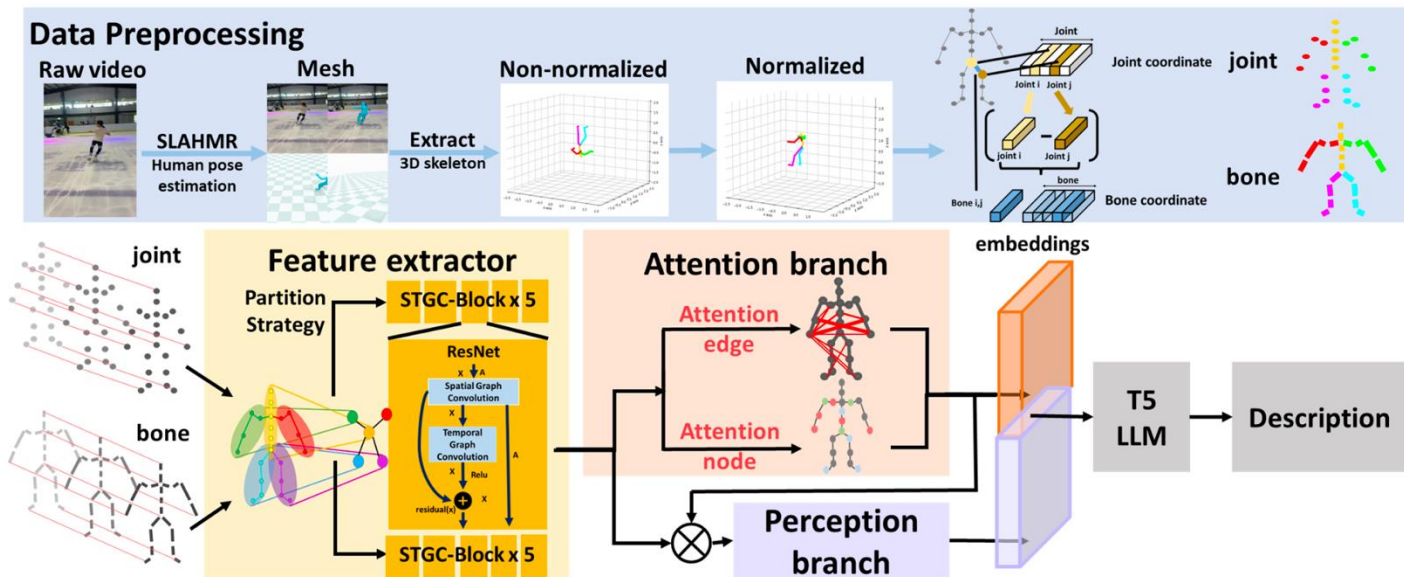
- Five assignments (40%)
 - Including programing, writing report, and short video
- One exam (30%)
- One final project (30%)
 - Including project proposal, project implementation, writing report, and oral presentation

Final Project

- Organize a team and find a topic
- Solve the target problem by the developed methods
- You can find topics on, for example,
 - Aidea
 - Aigo
 - Kaggle
 - Your master thesis!

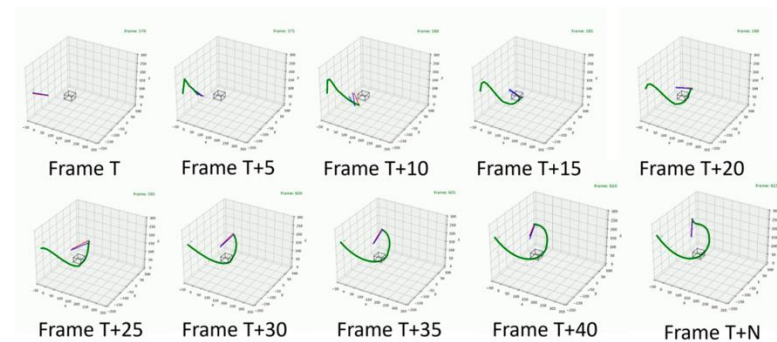
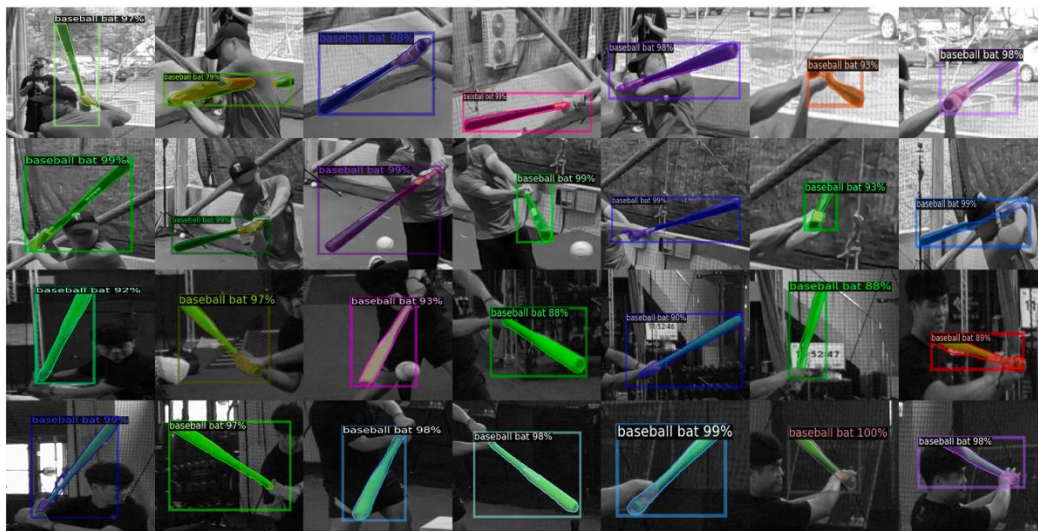
Examples (1/2)

- KKCompany challenge: Predict the next five songs that will be played
- Generating human motion description



Examples (2/2)

- Predicting real estate prices
- Flower classification
- Product identification
- 3D baseball bat swing

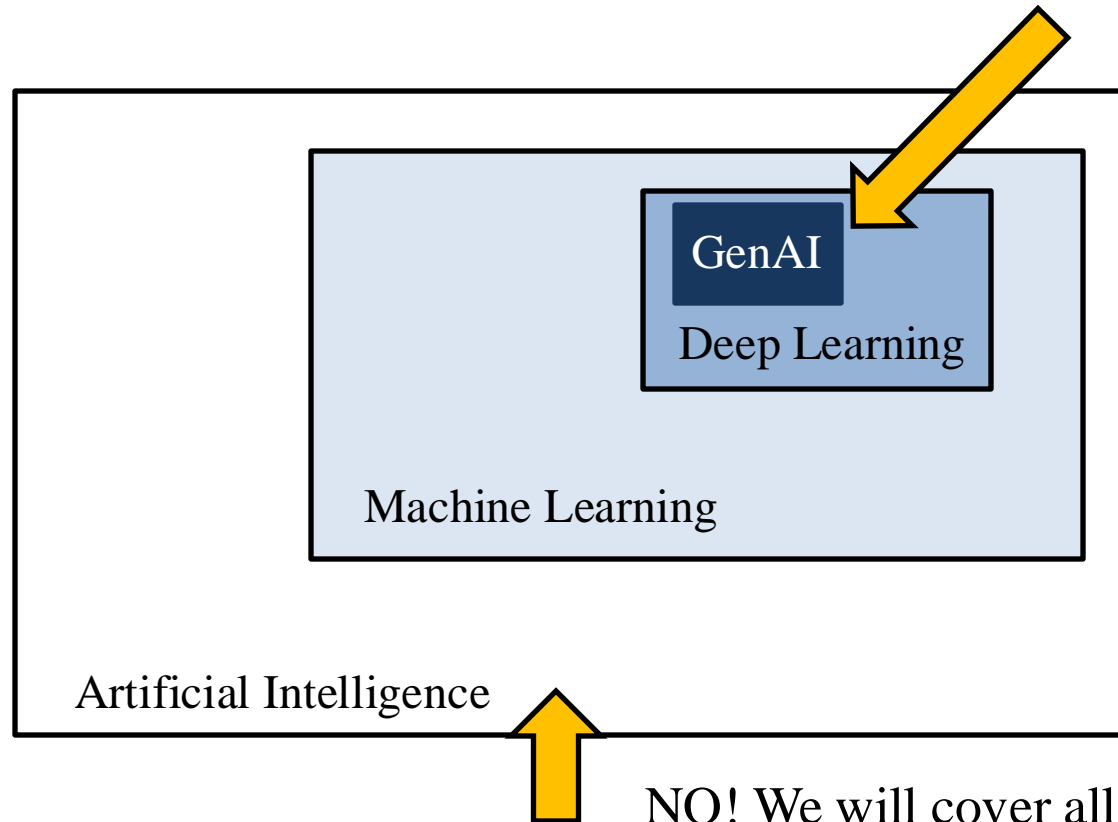


Why This Course?

- Knowing basics and categories of artificial intelligence
- Basic algorithms and applications of AI
- Really working on an AI project

Why This Course?

Most people think what AI is.
Does this course mainly cover this?



NO! We will cover all aspects in AI.

Why This Course?

- We will NOT focus on how to use Pytorch, Tensorflow, ...
- We will NOT focus on practical applications or recent techniques, like GenAI, Stable diffusion, LLM, ...

- We introduce artificial intelligence in a broad range
- We allow/welcome you to use deep learning in final project

選課注意事項

- 先備能力：**程式設計**。另外若有機率、演算法基礎更好。
- 交作業時務必符合作業規定之格式
- 從學期一開始就要探索及進行期末專題
- 可選擇同步或非同步上課，但**12月5日需進行同步考試**，**12月26日進行優選團隊的需同步報告**，請評估時間是否允許
- 務必避免同一學生在本課程有兩個修課紀錄
 - 同時屬於台灣綜合大學及聯盟學校的學生尤其要注意