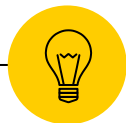


Applied Deep Learning

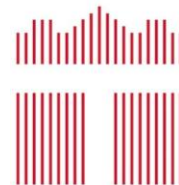


Course Logistics



September 1st, 2025

<http://adl.miulab.tw>

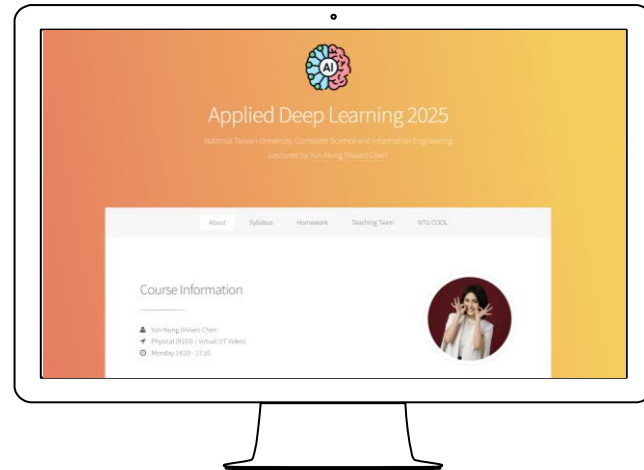


National
Taiwan
University
國立臺灣大學

Course Logistics

- Instructor: 陳縉儂 Yun-Nung (Vivian) Chen
- Time: Monday 14:20-17:10
- Location
 - Virtual: YouTube & COOL
 - Physical: R103
- Website: <http://adl.miulab.tw>
- NTU COOL: <https://cool.ntu.edu.tw/courses/55080>
- Slido: #ADL2025
- Email: adl-ta@csie.ntu.edu.tw
 - To ensure timely response, email title should contain “[ADL2025]”
 - Do NOT send to our personal emails

Always check the up-to-date information from COOL



NTU COOL for Digital Learning

- NTU COOL
 - Lecture videos
 - Comments anytime
 - Assignment submission
- Slido QA
 - #ADL2025
- TA Team
 - Forum discussion (preferred)
 - Email QA
 - TA recitation/hours (maybe virtual)

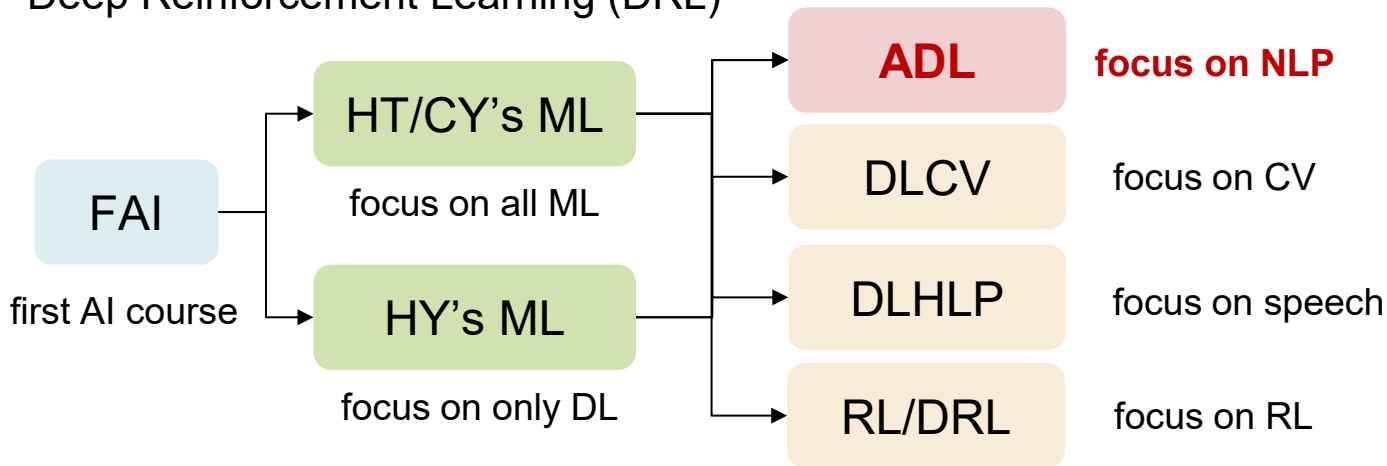


Course Goal

- ◎ The students are expected to understand
 1. how deep learning works
 2. how to frame tasks into learning problems
 3. how to use toolkits to implement designed models
 4. how to utilize pre-trained models, and
 5. when and why specific learning techniques work for specific problems

Related Courses

- 陳尚澤+陳縉儂, “Fundamental of Artificial Intelligence (FAI)”
- 林軒田/李濬屹/李宏毅, “Machine Learning (ML)”
- 王鈺強, “Deep Learning for Computer Vision (DLCV)”
- 李宏毅, “Deep Learning for Human Language Processing (DLHLP)”
- 孫紹華, “Reinforcement Learning (RL)”
- 李濬屹, “Deep Reinforcement Learning (DRL)”



Deep Learning for NLP



Covered topics by lecturers

- DL Basics
- Language Representations
- Language Modeling
- Transformer
- Classic Training + Inference
- Pre-training + Fine-Tuning
- Pre-training + Prompting
- Issues in NLP

TA recitation

- Dev Infra & Tooling (Colab, GPU, PyTorch)
- DL Workflow
- Huggingface Basics
- LLM Architecture
- LLM Evaluation
- LLM Training
- LLM Inference



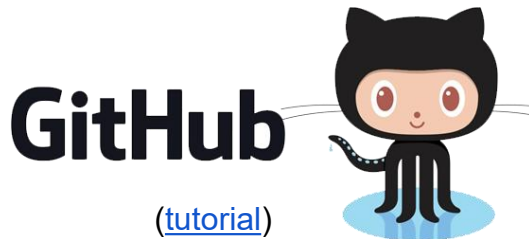
Pre-requisites

Course

- Required: college-level calculus, linear algebra
- Preferred: probability, statistics, foundations of artificial intelligence

Programming

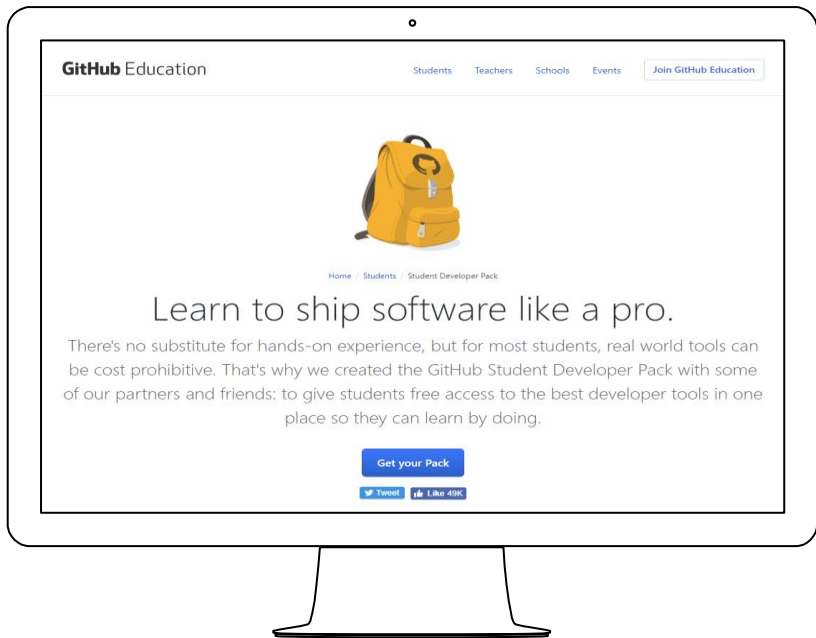
- proficiency in Python; all assignments will be in Python
- GitHub; all assignments will be handed in via GitHub



Please consider your available resources for taking this course

GitHub Student Pack

- The [student plan](#) provides unlimited private repositories
 - make your assignments private before the due date
 - make them public afterwards



Grading Policy



- 3 Individual Assignment: 60%
 - GitHub code w/ README
 - The score is based on **coding** and the **report**
 - Bonus points for outstanding performance
 - **Late policy: 25% off per day late afterwards**
- Final Group Project: 35%
 - GitHub code, Project document
 - Final presentation (format TBA)
- Participation: 5%
 - Write-up for the special events (**next week!**)

Understanding the difference between “collaboration” and “academic infraction”
Adding suitable references / citations (including LLMs) in your reports

Collaboration vs. Academic Infraction

☉ CAN

- ask LLMs (ChatGPT, Gemini, etc) and add references
- use code from public repos and add references
- discuss with peer and add references

☉ CANNOT

- check **code** or **report** from prior or current students
- use external materials but *no references*

2022 ADL Fall



台大資訊 深度學習之應用 | ADL
Assignment Plagiarism Announceme...



Individual Assignments



A1. Transformer / BERT



A2. LLM Tuning



A3. RAG

Final Group Project (3~5 persons)

- Topic TBA (with the techniques taught in this course)
 - Presentation
 - Poster or oral presentation
 - Peer grading
 - Project Report & Code
 - Wrap-up project report
 - GitHub code submission w/ README



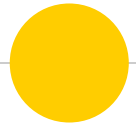
Tentative Schedule

Virtual

Physical

No Course

Week	Topic	TA Recitation	Assignment
自學 / 先修	Introduction, NN Basics, Backpropagation		
1 2025/09/01	Course Logistics, Sequence Modeling	PyTorch, Debugging	A0 – Basics
2 2025/09/08	Attention, Transformer, BERT	DL Workflow	A1 – BERT
<i>Guest Lecture – Prof. William Wang (UCSB)</i>			
彈性補充	Word Representations, Tokenization, BERT Variants		
3 2025/09/15	Prompt-Based Learning	HuggingFace Tutorial	
4 2025/09/22	LLM Adaptation	LLM LoRA Training	A2 – LLM Tuning
5 2025/09/29	教師節 Break		
6 2025/10/06	中秋節 Break		
7 2025/10/13	Retrieval-Augmented Generation	LLM Architecture	A3 – RAG
8 2025/10/20	Midterm Break		
9 2025/10/27	NLG Decoding, NLG Evaluation	LLM Inference & Eval	
10 2025/11/03	Issues in Pre-trained Models, Alignment	LLM Deployment	Final Project
11 2025/11/10	Knowledge, Multimodality		
12 2025/11/17	Language Agents		
13 2025/11/24	Personalization		
14 2025/12/01	Reasoning		
15 2025/12/08			
16 2025/12/15	Final Project Due		



Teaching Assistant Team



Rules



Asking questions is encouraged!!

**Any comment or feedback is preferred!!
(speed, style, etc)**

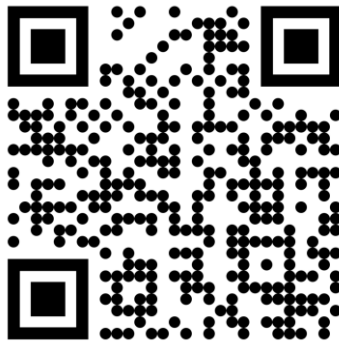


**I
♥
T.A**

Attending TA hours!! (details TBA)

Course Registration

1. Fill in the form by **Sep 7th (Sun)**
 2. Be notified if you can register the course before **Sep 12th (Fri)**
 3. Ensure to finish enrollment asap
- *Deadline: Sep 15th (Mon) 23:59**



F114-ADL 深度學習之應用 加簽表單

若對本課程有興趣修習的同學，請填寫以下表單，教學團隊會根據狀況，在第一周分發完給可以加簽的同學用授權碼的方式加簽。(本加簽表單將於 9/07 晚上關閉，第二周會盡速告知同學是否加簽成功)

本課程的規劃可見外部課程網站 <http://adl.mylab.tw>，本課程有部分內容是以線上的方式進行 (非同步影片形式)。本課程內容緊湊且作業時程短，建議同學需要好好考量自己的時間與自制力。

注意！第一周課程會說明本課程整個學期完整的規劃、教學內容、評分標準等細節，供大家判斷自己是否適合修習本課程。要加簽的同學務必至 [課程網站](#) 找作業0的影片連結 (Intro, NN Basics & Backprop [1.1](#), [1.2](#), [1.3](#), [2.1](#), [2.2](#), [2.3](#), [2.4](#), [2.5](#)) 完成後才填寫表單喔！

Course Schedule 課程規劃

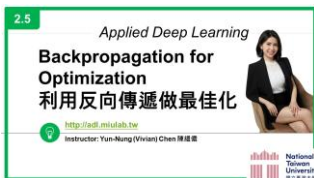
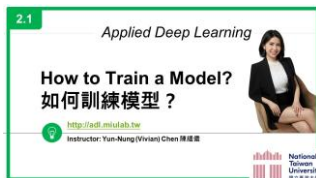
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15 2025/12/08			
16 2025/12/15	Final Project Due		

Your EDU Email 學校電子郵件地址 *

Short answer text

Important! Homework 0

- You MUST finish HW0 in order to enroll in this course
- Online lectures
 - Introduction [1.1] [1.2] [1.3]
 - NN Basics [2.1] [2.2] [2.3] [2.4]
 - Backpropagation [2.5]





Thanks!

Any questions ?

You can find the course information at

- <http://adl.miulab.tw>
- adl-ta@csie.ntu.edu.tw
- slido: #ADL2025
- YouTube: Vivian NTU MiuLab