Course Logistics

Sep 22nd, 2016

Applied Deep Learning

YUN-NUNG (VIVIAN) CHEN

WWW.CSIE.NTU.EDU.TW/~YVCHEN/F105-ADL

National Taiwan University

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Instructor: 陳縕儂 Yun-Nung (Vivian) Chen

Time: Thursday, 9:10-12:10

Location: 博理113 (10/6改至電二229)

Website: WWW.CSIE.NTU.EDU.TW/~YVCHEN/F105-ADL

Slides uploaded before each lecture

Always check the up-to-date information from the website

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, and
4. when and why specific deep learning techniques work for specific problems

Pre-requisites

Course

- Required: college-level calculus, linear algebra
- Preferred: probability, statistics

Programming

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

(tutorial from Stanford)

(tutorial)

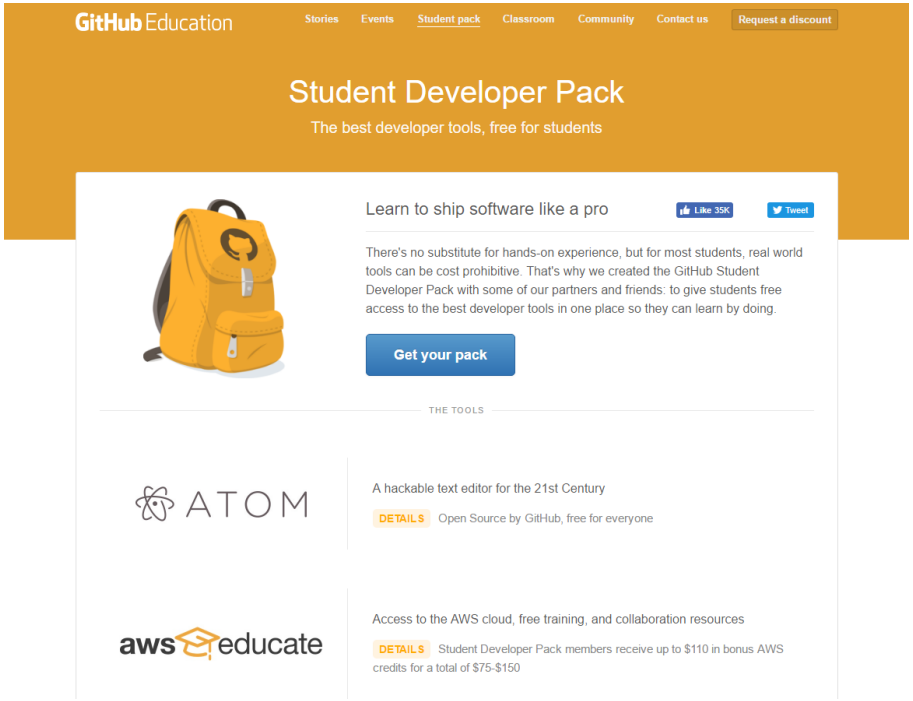
(quickstart)

GPU and workstation are NOT provided, so 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

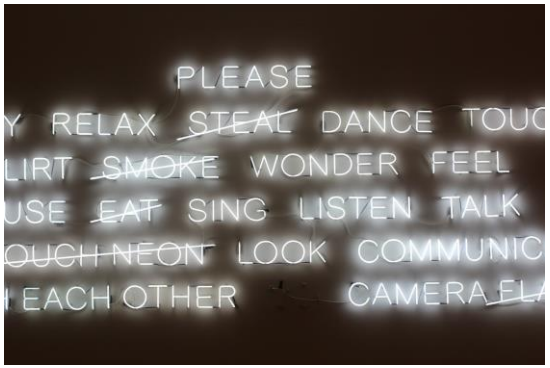


Grading Policy

- 5 Individual Assignment: 15% x 5 = 75%
  - CodaLab submission, GitHub code w/ README
    - 10% if the model outperforms the weak baseline
    - The rest is given based on the ranking list
    - Bonus points for outperforming the strong baseline
    - **Late policy: 3 free days; 25% off per day late afterwards**
- Final Group Project: 30%
  - GitHub code, Project document
    - Bonus points for the outstanding work (oral presentation)
- Others: 5-15%
  - Write-up for the guest lecture

Understanding the difference between “collaboration” and “academic infraction”

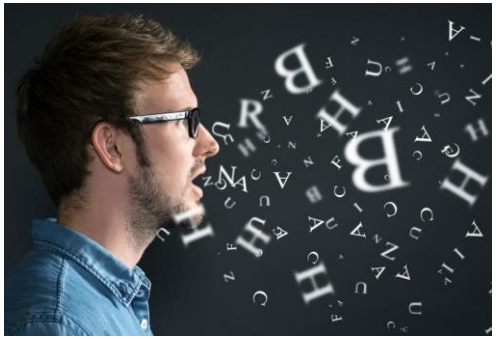
Individual Assignments



A1. Word Embeddings

A2. Sentiment Analysis

A3. Language Understanding



A4. Language Generation

A5. Game Playing

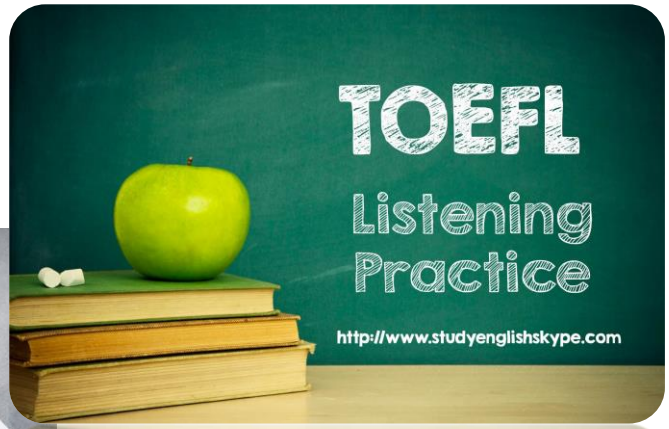
Final Group Project (2 choices)

Dialogue State Tracking Challenge

- Task 1: building an end-to-end system for the source language
  - Data: DSTC4 – multi-domain English human-human conversations
- Task 2: building an end-to-end system for another language
  - Data: DSTC5
    - Training: DSTC4 and word-level translation
    - Testing: Chinese conversations

Machine Comprehension for QA

- Task 1: choosing from multiple choices
  - Data: TOEFL Listening Test
- Task 2: generating short answer
  - Data: Stanford QA Dataset (SQuAD)



High-Level Schedule

Week	Topic	Assignment
2 09/22/16	Introduction	
3 09/29/16	Neural Networks	
4 10/06/16	Backpropagation	
5 10/13/16	Word Representation	Word Embedding
6 10/20/16	Sequential Modeling	
7 10/27/16	Recursive Neural Networks	Sentiment Analysis
8 11/03/16	Convolutional Neural Networks	
9 11/10/16	Recurrent Neural Networks	
10 11/17/16	Gated Mechanism	Language Understanding
11 11/24/16	TBA	
12 12/01/16	Attention Mechanism	Language Generation
13 12/08/16	Representation Learning/Multi-Task Learning	
14 12/15/16	TBA	
15 12/22/16	Deep Reinforcement Learning	Game Playing
16 12/29/16	Deep Reinforcement Learning	
17 01/05/17	TBA	
18 01/12/17	Final Project Presentation	

Rules

Eating is allowed, because breakfast is really important!!

Asking questions is encouraged!!

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