Course Introduction

[ECE30001] Deep Learning Applications

Overview

- Title: [ECE30001] Deep Learning Applications
  - Time: Mon/Thu 6th period (16:00 ~ 17:15)
  - Classroom: OH305
- Instructor: Prof. Injung Kim
  - Office: NTH302 (Tel: 1385, e-mail: ijkim@handong.edu)
- Teaching Assistance
  - Yejun Lee (이예준)
    - 010-6690-1774, fea1004@naver.com
  - Kihyun Na (나기현)
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Course Objectives

1. The students understand the characteristics of widely used machine learning (incl. deep learning) models, and can choose appropriate models to build application systems.

2. The students can design, train, and use deep learning models using open source deep learning frameworks.

Prerequisites

- Prerequisite
  - Data Structures (temporarily exempted)
- Recommended prerequisites
  - Calculus2
  - Linear Algebra
  - Statistics
- Required skill
  - Vector and matrix operation
  - Programming in **python**, C/C++, or Java
  - Basic concept of OOP including class inheritance

Tentative Schedule

- The lecture schedule can be modified with or without notice.

Weeks	Contents
1	Quick review of Python
2	Data processing in Python
3	Linear models and support vector machines
4	Introduction to neural networks
5	Special topic (12/18 14:30~16:30)
6	Introduction to Pytorch, Training of neural networks
7	Convolutional neural networks
8	Midterm test
9	Image classification, transfer learning
10	Generative adversarial nets
11	Recurrent neural networks
12	Word embedding
13	Project presentation
14	Text generation
15	Attention models
16	Final test

Grading Policy

- Grading policy
  - Attendance 5%
  - Homework 25%
  - Midterm 25%
  - Final 30%
  - Team project 15%

- [Submission] Any submission later than its deadline will be penalized.
  - One day: 20% penalty
  - More than one day: rejection

- Absences/lateness/disturbance
  - Every student in offline class should check attendance by HGU SmartCampus App
  - More than 6 absences will result in Failure.
  - Three times of lateness will be counted as one absence.
  - Any behavior that disturbs the class can be penalized.
    Ex) Use of mobile phone or ringing in the class.

COVID-19 Countermeasure

- All students participating offline class should adhere COVID-19 prevention rules.
  - Wash or sterilize hands before the class
  - Wear a mask
  - Keep physical distance from others
    - However, let's keep close to each other mentally.
- The student with any symptom of COVID-19 cannot enter the classroom.
  - Report to the professor immediately and submit a proof in 1 week.
- The students in the classroom should not connect ZOOM or other sites that cause heavy traffic.
  - Network bandwidth should not be wasted.
- Be careful and be joyful!
  - 1Thess 5:16 Be joyful always
  - Phil.4:4 Rejoice in the Lord always. I will say it again: Rejoice!
  - Phil.4:5 Let your gentleness be evident to all. The Lord is near.

Online Participation

- The students who are seriously concerned about COVID-19 infection can take the classes remotely.
  - Apply for online participation by Monday, 1 week before the class
    - Application form: https://forms.gle/j6fP4ZoyeLqv66VH7
      - Good examples: Week 2 and 3, 1st week, 1st–2nd week
      - Bad examples: 1 week, 2 weeks
    - Maximum 1 or 2 weeks per application
  - ZOOM link: https://handong.zoom.us/j/99495106666
  - Every remote student should turn on the camera.
    - Turning off the camera can be counted as absence.
  - The student who has applied for online participation cannot participate offline class.
    - The classroom should be kept sparse.

Online Participation

- **Technical problems during real-time online class.**

  Ex) connection failure, freezing

  - The student should prepare a reliable computer and stable network environment.
    - Mobile Internet (LTE, 5G) is not recommended.
  - The professor might be unable to resolve connection issues as the class must be going on for other students.
  - The excuse for missing an online class for technical reasons can be accepted ONLY IF the professor, HGU, or ISP (e.g., KT, SK broadband, LG U+) is responsible.
    - The student should submit a proof by email within a week.
    - The problems of the client computer, personal/home network environment or mobile Internet) are NOT counted as an acceptable excuse.

Important Announcements

- [Practice environment] Google Colab
  - http://colab.research.google.com
  - Bring your own laptop every class
- [Honor code] Any type of dishonesties including the following ones will result in Failure (F).
  - The cheating criteria of CSEE are described in "HGU CSEE Standard" and "CSEE Honor Code Guidelines". https://drive.google.com/file/d/0B9iQGS7v1k9ORGhXSHNyTkpvQW8/view?usp=sharing
  - Each student should do homework by herself/himself without any help from others or collaboration with others.
  - Doing homework together with others is prohibited and will be regarded as cheating except for team projects.
  - Sharing homework or showing homework to others is cheating.