Deep Learning

- 딥러닝 이해와 응용 (Raspberry Pi에서 딥러닝) -

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강좌의 개요

이 강좌는 인공지능과 딥러닝에 대한 기초적인 내용부터 응용까지를 다루고,

딥러닝을 이해하고 응용을 개발하는데 필요한 다양한 이론적 배경과 개발 환경에 대해 상세하게 설명하며,

딥러닝 응용을 프로그램하여 실습해 보는 과정을 통해 직접 경험해 보도록 한다.

소규모 컴퓨팅 환경에서 딥러닝을 실습해 봄으로써 딥러닝 활용 기회를 확장해 볼 수 있도록 한다.

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Target audience and prerequisites

- Target audience
  - This lecture is prepared for engineers and students who are interested in developing deep-learning application.
- Prerequisites
  - Experience with industry standard Operating Systems and text editor such as Windows/Linux and Vi/Vim.
  - Experience with industry standard C++ compilation tool-chain; GNU GCC
  - Basic knowledge of the C/C++ language

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Goals and objectives

- Goals
  - Understanding of artificial intelligence, machine learning, and deep learning.
  - Acquiring the working knowledge of deep learning model.
  - Practicing development and running deep learning model.
- Objectives
  - Understanding of deep neural network
  - Understanding of well known DNN for image classification.
  - LeNet (MNIST), ??? (CIFAR-10), AlexNet (ImageNet).
  - Understanding of Tiny-DNN
    - C++ implementation of DNN
  - Understanding of Python and Numpy
  - Understanding of TensorFlow
  - Understanding of Caffe V1
  - Understanding of Darknet/YOLO

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Lecture schedule

	10:00	11:00	12:00	1:00	2:00	3:00	4:00
1st	0	1		2	3	4	5
2nd	6	7		8	9	10	11

- 0: Lecture overview
- 1: Introduction to AI and DL
- 2: Introduction to DL
- 3: Introduction to Tiny-Dnn
  - Install, introduction, getting started
  - XOR, Four-Pixels
  - LeNet (MNIST), Cifar-10
- 4: Introduction to Python
- 5: Deep-Learning in depth
- 6: Introduction to TensorFlow
  - Install, introduction, getting started, tensor, XOR
- 7: TensorFlow examples
  - MNIST
- 8: Introduction to Darknet/YOLO
  - Install, introduction, getting started, object detection and classification
- 9: Introduction to Caffe V1
- 10: Caffe examples
- 11: Summary

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