2024 RVL Summer Course

Overview

- 5 weeks, 7/29 (Mon) ~ 8/30 (Fri), 每週三 下午 14:00 - 17:00
- Location: 宏裕科技大樓 Room 335

課程名稱	講師	助教	課程時間
Ubuntu 教學	柏勳、泳禎	明躍	第一週 (7/29 - 8/2)
Deep Learning	明躍、欣玲	鈺翔	第二週 (8/5 - 8/9)
ROS / 無人機	泳禎	靖嫻、婷婷	第三週 (8/12 - 8/16)
數位影像 / 電腦視覺 / OpenCV	士涵、鈺翔	明躍	第四週 (8/19 - 8/23)
無人機實際飛行	柏勳、靖嫻、婷婷		第五週 (8/26 - 8/30)

Week 1 - Ubuntu System

- 7/31 (Wed) 14:00 ~ 17:00 at Room 335.
- Instructors: Pao-Hsun, Chen, Ming-Yiao, Chen, and Yong-Jhen, Jheng
- Content
  - Ubuntu installation tutorial
  - Ubuntu basic commands introduction
  - Git tutorial
  - Docker tutorial
- Homework
  - Please train a model to classify mnist dataset, and you must train your model in docker container pytorch/pytorch.
  - Please solve these 2 problems with python/c++, and submit your code to your github repository.
    - Problem 1

Week 2 - Deep Learning

- 8/07 (Wed) 14:00 ~ 17:00 at Room 335.
- Instructors: Ming-Yiao, Chen, Hsin-Ling, Lu, Yu-Hsiang, Fan
- Content
  - Machine Learning & Deep Learning.
  - Convolution Neural Network (CNN).
  - Pytorch Introduction & Installation.
  - Classification, Object Detection & Segmentation.
- Homework
  - Please train a model to classify Fashion-MNIST dataset.

Week 3 - ROS / 無人機

- 8/14 (Wed) 14:00 ~ 17:00 at Room 335.
- Instructors: Yong-Jhen, Jheng, Ting-Ting, You, Jing-Xian, Lai
- Content
  - Robot Operating System (ROS) Introduction.
  - Rospy installation.
  - Rospy practices.
- Homework
  - A simple multi-threaded application in C++ that simulates a circular message passing system among four nodes. Each node acts as both a message publisher and subscriber. In each iteration of the loop, every node sends an integer to the next node and receives an integer from the previous node, incrementing the integer value each time.
  - Download and run PX4 and MAVROS

Week 4 - 數位影像 / 電腦視覺 / OpenCV

- 8/21 (Wed) 14:00 ~ 17:00 at Room 335.
- Instructors: Shih-Han, Wei, Yu-Hsiang, Fan and Ming-Yiao, Chen
- Content
  - OpenCV Introduction.
  - OpenCV Installation.
  - Basic OpenCV tutorial.
  - OpenCV practices.
- Homework
  - Use python to Find The Contour

Week 5 - 無人機實際飛行

- 8/28 (Wed) 14:00 ~ 17:00.
- Instructors: Pao-Hsun, Chen, Ting-Ting, You, Jing-Xian, Lai
- Content
  - Show and Practice flying drone with remote controller
- Homework
  - No