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| **Linux 서버 기초 및 응용**  **School of Industrial and Management Engineering** |

1. **Course Description**

* This course provides basics of Linux OS and GPU programming with illustrative application in Deep Learning. This course also aims at fostering undergraduate students to have Python programming skills to implement the introduced Deep Learning Architectures during the lecture.

1. **Topic**

* Linux : Basic usage of linux servers with gpu.
* Convolutional Neural Network : Neural network architecture for deep learning that learns directly from data without handcrafted feature extraction.
* Basic Parameters of CNN : Filters, Kernel size, and Strides in Convolutional layer & Pooling layer.
* Data preprocessing : Data augmentation, Regularization methods
* Various types of CNN Architecture : AlexNet, VGGNet, GoogLeNet, ResNet.

1. **Textbook and additional resources**

* 이시카와 아키히코, 파이썬으로 배우는 딥러닝 교과서, 한빛미디어 (2020)
* 오일석, 기계 학습, 한빛아카데미 (2017)

1. **Prerequisites**

* Linear algebra : Eigenvector/Eigenvalue, Matrix multiplication.
* Python Programming : Images processing.
* Machine Learning : Model training, Evaluation, Optimization.

1. **Time, Place, Lecturer**

* Time: Friday 16:00~18:00
* Place : 224, New Engineering Hall
* Lecturer : Doohyung Kim, New Engineering Hall 204, 02-3290-3877, [rlaengud123@korea.ac.kr](mailto:rlaengud123@korea.ac.kr)  
   Josh Yang, New Engineering Hall 208, 02-3290-3877, [joshy@korea.ac.kr](mailto:joshy@korea.ac.kr)

1. **Schedule**

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| **Round** | **Topics** |
| **2021.5.7(2H)** | GPU 서버 사용 방식, Convolutional Neural Network(CNN) 파라미터 설명 및 실습 기초 |
| **2021.5.14(2H)** | GPU 서버 실습 실습, CNN 파라미터 설명 및 실습 심화 |
| **2021.5.21(2H)** | 다양한 CNN 구조 설명과 Keras(Tensorflow)를 활용한 CNN 구현 실습 |