Deep Learning in Computer Vision

ELEC 4240

3 Credits

Pre-requisites: COMP 2011 OR COMP 2012 OR COMP 2012H) AND (MATH 2111 OR MATH 2121 OR MATH 2350

Name: Qifeng Chen

Email: cqf@ust.hk

Course Description

Deep learning has significantly advanced the performance of computer vision systems from object recognition to image generation. This course covers the basics and various applications of deep learning in computer vision. Students will study the details of convolutional neural networks as well as recurrent neural networks and train deep networks with end-to-end optimization and learn deep learning approaches for both recognition and generation computer vision tasks such as image recognition and image generation. Through programming projects, students will implement, train, and test deep neural networks on cutting-edge computer vision research. Students would be required to study or do research in a final course project related to deep learning and computer vision and present their work by the end of the course.

Assessments:

3 Programming Assignments	36%
Midterm	35%
Final Project	29%
Total	100%

Required Texts and Materials

Ian Goodfellow, Yoshua Bengio and Aaron Courville. Deep Learning, MIT Press, 2016.

Aston Zhang, Zachary C. Lipton, Mu Li, Alexander J. Smola. Dive into Deep Learning. 2021