The Hong Kong University of Science and Technology

UG Course Syllabus

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

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Course Description

Deep learning has significantly advanced the performance of computer vision system from object recognition to image processing. 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 based approaches for both high-level and low-level computer vision tasks such as image recognition and image enhancement. 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