Khon Kaen University

Department of Computer Science

322441 Neural Networks

COURSE DESCRIPTION

2018/1

- Instructors: Asst.Prof. Dr.Sirapat Chiewchanwattana, E-mail: sunkra@kku.ac.th.
- Credits: 3(3-0-6)
- Prerequisite: None.
- Goals: This course presents an overview of the theory and applications of artificial neural network to engineering applications. The objective of this course is on the understanding of various neural network the applications of these models to solve engineering problems.
- Topics:
    - Introduction
    - Learning paradigms, perceptron learning
    - Multi-Layer Perceptron and Back-propagation learning
    - Radial Basis Network
    - Support vector machines
    - Unsupervised learning, Clustering, Self-Organizing System, k-Means
    - Convolution Neural Networks And Deep Learning
    - Applications
- Textbook:

[1] http://th.wikipedia.org/wiki/ข่ายงานประสาทเทียม

[2] S. Haykin (1999), Neural Network a comprehensive foundation, International Edition, second edition, Prentice Hall, New Jersey .

[3] http://homepages.cae.wisc.edu/~ece539 หรือ http://www.engr.wisc.edu/ece/courses/ece539.html (Yu Hen Hu ‘s course homepage)

[4] http://homepages.cae.wisc.edu/~ece539/matlab/index.html (Yu Hen Hu ‘s matlab source code)

[5] S. Kumar (2005), Neural Networks: A Classroom Approach, McGraw-Hill, Singapore.

[6] S. N. Sivanandam, S.Sumathi and S. N. Deepa (2006), Introduction to Neural Networks using MATLAB 6.0, TATA McGraw-Hill, New Delhi.

A set of class notes will be available on the web or in class.

Computer Usage: Assignment will be assigned during the semester require to program or use neural network simulators using Matlab or other high level programming language C/C++/Java.

Grading Policy (tentative):

- 30% assignments
- 40% Take home midterm exam + final exam
- 30% Mini Project (Application)

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