Faculty of Information Technology

MACHINE LEARNING

(503044)

COURSE DESCRIPTION

- Credits: **3** (3, 0)
- Prerequisite: 502043, C01123

COURSE DESCRIPTION

This module introduces basic concepts and algorithms in machine learning. The main reason for studying computational learning is to make better use of powerful computers to learn knowledge (or regularities) from the raw data. The ultimate objective is to build self-learning systems to relieve human from some of already-too-many programming tasks. At the end of the course, students are expected to be familiar with the theories and paradigms of computational learning, and capable of implementing basic learning systems.

SYLLABUS

1. Introduction
2. Concept Learning
3. Decision Tree Learning
4. Artificial Neural Networks
5. Evaluating Hypotheses
6. Bayesian Learning
7. Instance-Based Learning
8. Genetic Algorithms
9. Support Vector Machines

TEXT&READINGS

[1] T.M. Mitchell, [1997], Machine learning, McGraw-Hill.

[2] C. Bishop, [2006], Pattern Recognition and Machine Learning, Springer.

[3] T. Hastie, R. Tibshirani, J. Friedman, [2009], The Elements of Statistical Learning, Springer.

[4] B. Lantz, [2013], Machine Learning with R, Packt Publishing.

[5] D. Conway, J. White, [2012], Machine Learning for Hackers, O'Reilly.

COURSE MATERIALS

You can find all lectures, tutorials, and solutions on Sakai:

sakai.it.tdt.edu.vn

ASSESSMENT

- 10% - Exercises in class
- 20% - Mid-term exam
- 20% - Assignment
- 50% - Final projects

Q&A