MACHINE LEARNING

Fall 2007

http://www.dit.unitn.it/∼periklis/teaching/ml/f07/

Lectures:
Tuesdays, 10:30–12:30
Room 201
Fridays, 10:30–12:30
Room 201

Instructor:
Periklis Andritsos
periklis@dit.unitn.it
Office:
1st Floor Fac. of Science
Office hours:
By appointment (preferably after lectures)

Text book

Machine Learning by Tom M. Mitchell, McGraw Hill

Lecture notes will be posted on the web.

Expected background
Good knowledge of probability theory, statistics and linear algebra.

Recommended book #1
Pattern Recognition and Machine Learning : Christopher M. Bishop Springer, 2006

Recommended book #2
Principles of Data Mining : David J. Hand, Heikki Mannila and Padhraic Smyth, MIT Press, 2000

Recommended book #3
Data Mining : Principles and Techniques, 2nd edition : Jiawei Han and Micheline Kamber, Morgan Kaufmann, 2006

Topics

- Introduction (problems, examples of learning systems, generalization
- Supervised learning (linear and non-linear models, neural networks)
- Decision Trees (feature selection, pruning)
- Unsupervised learning (density estimation, k-means, PCA, EM)
- Graphical Models
- Information Theory
- Clustering Categorical Data

Evaluation
The evaluation will be based on the following : (a) 20% on critical paper reviews (2 or 3), (b) 60% on a final project report and (c) 20% on final oral exam.

Email
Please follow these rules:

- The `Subject` section of your email must contain "ML".
- Shorter messages get faster responses.
- If you send me a program and ask "what is wrong with it?", do not expect a reply.
- There is a high possibility that `hotmail`, `yahoo` etc. e-mail messages will go to my spam mailbox and deleted. Please use your school account.

Announcements
All important announcements will be made on the web page. Please check it on a regular basis.