CSC2515 Fall 2006 – Info Sheet

September 12, 2006
`www.cs.toronto.edu/∼roweis/csc2515/`

- Instructor: Prof. Sam Roweis
  Lectures: Tuesdays 2-4pm, location TBA
  First lecture Sept. 12, last lecture December 1 (instead of Dec.5).
  Tutors: Inmar Givoni & Roland Memisevic
  Tutorials: some Tuesdays 4-5pm, location TBA
  Office hours: Tuesdays with no tutorials, 4-5pm, Pratt 290F
  website: `www.cs.toronto.edu/∼roweis/csc2515/`
  email: `csc2515@cs.toronto.edu`
  (please do *not* send Roweis or tutors email about the class directly to their personal accounts)
- Course Email List
  Crucial class information is distributed using an email list (not a newsgroup); therefore **it is very important that you email `csc2515@cs.toronto.edu` with your name, student number and UofT email address so we can add you to the class list**.
- Marking Scheme:
  - weekly readings worth 13% (honour system)
  - 3 assignments worth 18% each
  - one project worth 33%

  Prerequisite: instructor permission except for DCS/ECE/STATS grads; Load: 26L
  Auditing policy: instructor permission, space permitting, no resources.
- Course Description:
  Basic methods for classification, regression, clustering, time series modeling, and novelty detection. These algorithms will include K-nearest neighbours, naive Bayes, decision trees, support vector machines, logistic regression, neural networks, generalized additive models, K-means, mixtures of Gaussians, hidden Markov models, principal components analysis, factor analysis and independent components analysis. Methods of fitting models including stochastic gradient and conjugate gradient methods, the Expectation Maximization algorithm and Markov Chain Monte Carlo. The fundamental problem of overfitting and techniques for dealing with it such as capacity control and model averaging.
- Computing:
  CDF accounts will be created for all students. Please do course computing on CDF and not on research systems such as CSLAB. All the basic algorithms will be implemented in Matlab, but prior knowledge of Matlab is not required.
- Recommended (but not required) books:
  - **Elements of Statistical Learning*, Hastie, Tibshirani, Friedman
  - *Information Theory, Inference, and Learning Algorithms*, MacKay
  - *Neural Networks for Pattern Recognition*, Bishop
  - *Pattern Recognition and Neural Networks*, Ripley
  - *Introduction to Graphical Models*, Jordan et. al (unpublished)