Fall 2010

Course Description:

EE 380L Introduction to Pattern Recognition

Instructor: J. K. Aggarwal

Class Time: TTh 12:30 - 2:00 p.m.
Class room: ENS 306

Office Hours: TTh 2:00 - 3:30 PM
Location: ENS 519

Unique No.: 16880

This course will provide an introduction to pattern recognition. Topics will include Bayesian decision theory, parameter estimation, non-parametric techniques, linear discriminant functions, non-metric methods and unsupervised learning and clustering. The lectures will follow the book *Pattern Classification* by Duda, Hart and Stork, Second Edition, Wiley. The instructor will concentrate on the following chapters:

1. Introduction
2. Bayesian Decision Theory
3. Maximum Likelihood and Estimation
4. Non-parametric Techniques
5. Linear Discriminant Functions
8. Non-metric Methods
10. Unsupervised Learning and Clustering

The final grade will be based upon a term project (25%), a take home examination (25%), oral presentation of research (15%) and homework assignments (35%). The final examination will take the form of a term project, subject to the approval of the Chairman. The topic of the term project will be decided mutually between the instructor and each student. The objective of the term project is to illustrate the use of the concepts and other material developed in the course through application to real problems. The term project will be due on Friday December 3rd by 5pm. The take home will be given on 28th October and will be due one week later. Each student will make a 15-20 minute presentation based upon the term project near the end of the semester. The homework assignments will generally be due one week after they are assigned.

It is desirable (though not mandatory) that the students have background in probability theory at a level at least equivalent to the undergraduate probability theory course at the University of Texas like EE 351K.

The home work assignments will involve extensive use of computer exercises, however, the choices of simulation tools or programming language are left to the student. The results, in general, will be presented in a graphical fashion.

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