

## Decision Trees - Introduction

NIRDOSH BHATNAGAR

### 1. Introduction

Decision trees are a simple and an intuitive way to classify data vectors. Classification is the task of assigning objects to one of several predefined categories. Some examples of classification are:

- Detecting spam email messages.
- Predicting tumor cells as either benign or malignant
- Classifying credit card transactions as legitimate or fraudulent
- Classifying secondary structures of protein as alpha-helix, beta-sheet, or random coil
- Categorizing news stories as finance, weather, entertainment, sports, etc.

Some of the different classification techniques are:

- Decision tree based methods
- Rule-based methods
- Memory based reasoning
- Neural networks
- Naïve Bayes, and Bayesian belief networks
- Support vector machines

We concentrate upon decision-tree based methods.