How to do a Term Project
Select a Problem

• Pick a problem that interests you
• Pick a problem that will be useful to you later in writing a MS/Ph.D thesis
• Pick a problem that you know something about
• If you do not have any idea, look at the next slide
Some Examples.

• How to recognize printed English or Vietnamese characters
• How to recognize printed numbers
• Speak into a microphone, record the sound and train a neural net to recognize your voice from other voices
• How do you recognize Spam from regular e-mail
• Group animals/plants based on their characteristics
• Group faces based on how they look
Where to Get Data

• It is your responsibility to get data for your problem. I am not going to get the data for you.

• Use Google to search for standardized data sets like printed/handwritten characters, fingerprints, trademarks, faces, etc.

• Before you commit yourself to a project, make sure you have data with you or you know how to create your own data
How to Choose a Method?

• You have five methods to choose from:
  – Decision Trees, Neural Nets, Bayesian Methods, Unsupervised methods, & Genetic Algorithms
  – If you choose some other method, then you are on your own. I will allow you, but I may not be able to help you
  – Whatever method you choose, the pre-processing and post-processings stages are very similar.
  – I expect about 10 class projects. Ideally, it will be good if all five methods are represented
What to Write

- Describe what the problem is
- Describe what the data is
- Describe what pre-processing you did
- Describe the ML method you used, what parameters you chose, etc. Give enough information so someone else can repeat the experiment and get the same results
- Show results as graphs, tables, charts
- Summary and conclusions
What to Submit

• Your project report (printed, pdf version, etc.).
  – No less than 3 pages, no more than 5 pages.
    Single-spaced, 12 font size, one inch margins.
    (program listing is not counted in this page count).
  – Your name and e-mail address
  – Your student ID, if any
Structure of Project Report

• Brief, informative title
• Your name and e-mail address
• Abstract (250 word limit)
• Introduction
• Previous work done in this area
• Description of what you did
• Results
• Discussion, Summary, Results, etc.
• Any references