Homework 3
(due Monday, Feb. 27th, 2006)

February 17, 2006

1. Carefully work out all relevant details of the Information Bottleneck algorithm. You'll need to read and understand Theorem 5 and then show that the update equations in Equation (31) in the Information Bottleneck paper are correct.

2. Run the Information Bottleneck (IB) algorithm (either the original or the Agglomerative Information Bottleneck) on data of your own choice. At a minimum, you should have four dimensional input feature vectors, two dimensional bottleneck feature indices and two output classes. Describe your dataset in some detail and explain what you think the IB algorithm did. Show results for different values of β. If you don't have data of your own, please try and use the data available at Ross Survey Code `http://www.cise.ufl.edu/~anand/sp06/ross_survey_code.tar.gz`. Look at the README for more details on how to use the code.