1. Implement a feed-forward, three-layer, neural network with standard sigmoidal units. Your program should allow for variation in the size of input layer, hidden layer, and output layer. You will need to write your code to support cross-validation. We expect that you will be able to produce fast enough code to be of use in the learning task at hand. You will want to make sure that your code can learn the 8x3x8 encoder problem prior to attempting the Rap1 learning task.
2. Set up the learning procedure to allow DNA sequences as input and to produce an output of the likelihood that an input is a true Rap1 binding site. Describe the machine learning approach in detail. This will include, for an ANN, a description of the network structure of your encodings of inputs and output.