SVM results. (to be copied into final paper)

Another statistical learning method that was used was Support Vector Machines (SVM). Here many SVMs were trained on the data using a grid search with epsilon ranging from 0 to 1 in increments of 0.01, and the cost ranging from 22 to 29 in powers of 2. Each of these 700 different SVMs were tested using 10 fold cross validation to determine optimal choices for cost and epsilon. The Process was highly computationally expensive and took over 8 hours of computation time, however it yielded strong results. The best SVM utilized an epsilon value of 0 and a cost of 4. This SVM had a Root Mean Squared error of 0.0001073526, which is highly accurate. Figure – shows the error in each of the 24 patients. The data points were found to be completely separable. Figure – shows the results of the training. As can be seen larger values of epsilon produced higher error, with cost being somewhat independent of error. These results are to be expected, with data where the number of components from each sample far exceeds the number of samples. Since the data is perfectly separable, cost therefore has nearly no impact on the SVM.



