

3. Inside of the repeated 10-fold CV I ran all of my tuning for:
 1. **KNN** where $k = (1:40)$
 2. **Random forest** where $mtry = (1:7)$, $nodesize = (1,3,5,6,7,10)$, $ntree = (500,1000,1500)$
 3. **Neural net** where $decay = (0, 0.01, 0.1, 1)$, $size = (1, 3, 6, 10)$
 4. **SVM** where $cost = (5, 10)$, $gamma = (0.1, 1)$

To compare these models, I used the validation misclassification error rate on each fold and then plotted the matrix of resultant values on a box and whiskers plot. I evaluated the best model to be the one with the lowest mean misclassification error rate and also considered the 25th and 75th percentiles to ensure they were also at a minimum. That is, if two models had a very similar means, I chose the one with the lower percentiles but slightly wider spread, not the one with very consistent values.