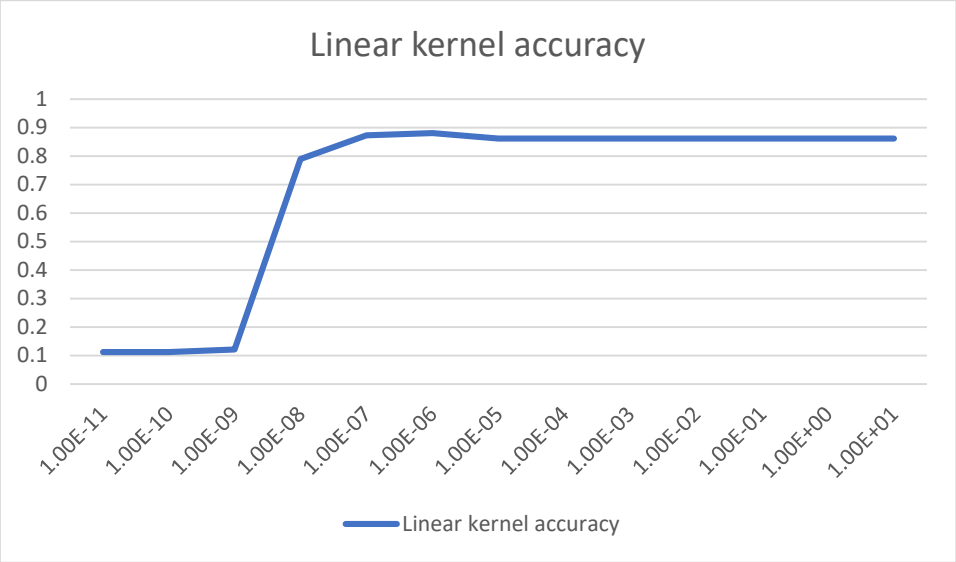
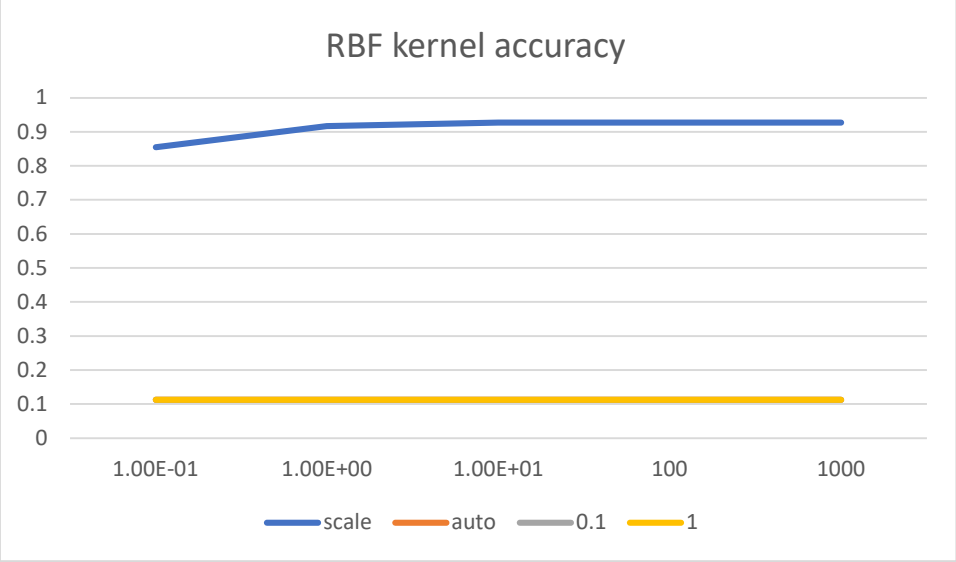
First Team Task (SVM)

For our first SVM model we use a linear kernel and C values from 10^{-11} to 10. The gamma parameter is chosen automatically. We see the accuracy increase until 10^{-6} and then decrease slightly again.



For our second model we use an RBF kernel with different gamma and C parameters:



We see that the gamma parameter is very important and should be set to 'scale', such that it will automatically scale for the best result. As for the C parameter, we see that a high C actually increases the accuracy up to a point, but then tops out at 0.927.

Optimizing the parameters

Out next goal is to optimize the two parameters gamma and C. To do this, we us the k-fold cross validation. So we put into a Grid search algorithm the same parameter range we used before and try to find the best one. Unsurprisingly, we actually get for the linear kernel $C=10^{-6}$ and for the RBF kernel C = 10 and gamma = 'scale'