a.

b. We used an inner-fold cross-validation routine to find the optimal hyperparameters of models, with RBF and Polynomial kernels. In both models epsilon was set to 2.For RBF we found that the optimal hyperparameters were C=29 and sigma=43. For Polynomial we found that the optimal hyperparameters were C=0.0002 and q=2. In the RBF model 1845 support vectors were selected and the percentage of support vectors was 14.2405%. In the polynomial model 2788 support vectors were selected and the percentage of support vectors was 21.5190%.

c.

|  |  |
| --- | --- |
| Model | RMSE |
| ANN | 2.2321420469458726 |
| Decision Tree |  |
| Linear SVM | 2.2973 |
| RBF SVM | 1.8926 |
| Polynomial SVM | 1.8865 |