**Supplemental Digital Content 5 -** Machine Learning Model Hyperparameters

|  |  |  |
| --- | --- | --- |
| **Machine Learning Model** | **Hyperparameter** | **Values** |
| **Naive Bayes** | (N/A) | (N/A) |
| **Support vector machine** | Kernel type | Linear, radial basis function |
| Box constraint | 39 logarithmically-spaced values from 10-7  to 1012 |
| Kernel width (non-linear kernel scale) | 49 logarithmically-spaced values from 10-12  to 1012 |
| **Random forest** | Number of trees | 50, 75, 100 |
| Minimum leaf size | 1, 5, 10, 15, 20 |
| Node splitting criteria | Cross entropy, Gini impurity |
| Number of predictors sampled | 10, 20, 30, … , 90, 100 |
| Maximum number of decision splits relative to training sample size |  25%, 50%, 75%, 100% |
| **Learning using concave and convex kernels \*** | Θ | 0.01, 0.02, 0.03, … , 0.09, 0.1 |
| λ | 0.1, 0.2, 0.3, … , 0.9, 1 |

*\* As described in:*

Sabeti E, Gryak J, Derksen H, Biwer C, Ansari S, Isenstein H, Kratz A, Najarian K. Learning Using Concave and Convex Kernels: Applications in Predicting Quality of Sleep and Level of Fatigue in Fibromyalgia. Entropy 2019;21:442.