Supplementary Material 1. Machine learning algorithms and tuning parameters for each model

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| Algorithms | Tuning parameters |
| Logistic regression |  |
| Random Forest | mtry (the number of predictors that will be randomly sampled at each split when creating the tree models), min\_n (the minimum number of data points in a node that is required for the node to be split further) |
| K-nearest neighbor | neighbors (the number of neighbors to consider), weight\_func (the type of kernel function used to weight distances between samples), dist\_power (the parameter used in calculating Minkowski distance) |
| Ridge regression | penalty (the total amount of regularization) |
| Lasso regression | penalty (the total amount of regularization) |
| Elastic net | penalty (the total amount of regularization), mixture (the proportion of lasso regularization in the model) |
| Support vector machine with radial | cost (the cost of predicting a sample within or on the wrong side of the margin),rbf\_sigma (a positive number for radial basis function), margin (epsilon in the SVM insensitive loss function) |
| Support vector machine with polynomial | cost (cost of predicting a sample within or on the wrong side of the margin), scale\_factor (polynomial scaling factor), margin (epsilon in the SVM insensitive loss function), degree (polynomial degree) |
| Neural networks | hidden\_units (the number of units in the hidden model.), dropout (the proportion of model parameters randomly set to zero during model training), penalty (the amount of weight decay) |