

Supplementary Information

B Hyperparameter search

Our system performs random search for the hyperparameters of the machine learning models and then evaluates their performance on the validation sets. The searched hyperparameters for each of the models are shown in Table [A](#).

Table A: Hyperparameter values considered during the random hyperparameter search. Ranges are indicated with a ‘-’.

| Model | Hyperparameters | Values |
|--------------------------------------|----------------------------|-------------------|
| Logistic Regression | Regularization parameter C | [1.e-03 - 1.e+01] |
| | Max iterations | [50-300] |
| K-Nearest Neighbors | Leaf size | [20-60] |
| | Power parameter | [2] |
| | N neighbors | [5 - 20] |
| Support Vector Machine | Regularization parameter C | [1.e-04 - 1.e+01] |
| | Gamma | [1.e-2-1.e+05] |
| Light Gradient Boosting Model | Number of leaves | [10-60] |
| | Learning rate | [1.e-04- 1.e0] |
| | Max depth | [10-60] |
| | N estimators | [100-500] |