

Supplementary information 1. Hyperparameters for each algorithm in the grid search.

| Classifier | Tested values | Selected values |
|-------------------|---|------------------------|
| | n_estimators: 10, 25, 50, 100, 250, 500, 1000 | n_estimators: 500 |
| Xgboost | learning_rate: 0.001, 0.01, 0.1, 0.2, 0.5 | learning_rate: 0.01 |
| | max_depth: 2, 3, 5, 10, 25, 50, 100 | max_depth: 3 |
| | n_estimators: 10, 25, 50, 100, 250, 500, 1000 | n_estimators: 1000 |
| CatBoost | learning_rate: 0.001, 0.01, 0.1, 0.2, 0.5 | learning_rate: 0.01 |
| | max_depth: 2, 3, 5, 10, 25, 50, 100 | max_depth: 10 |
| | n_estimators: 10, 25, 50, 100, 250, 500, 1000 | n_estimators: 250 |
| LGBM | learning_rate: 0.001, 0.01, 0.1, 0.2, 0.5 | learning_rate: 0.1 |
| | max_depth: 2, 3, 5, 10, 25, 50, 100 | max_depth: 5 |

Abbreviations: LGBM, light gradient boosting model