



Article

Supplementary Materials for Prediction of Antidepressant Treatment Response and Remission Using an Ensemble Machine Learning Framework

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Table S1. The difference in the means of AUC, sensitivity, and specificity for predicting treatment response between the boosting ensemble model with feature selection and other models including the boosting ensemble model, logistic regression, SVM, C4.5 decision tree, naïve Bayes, random forests, and MFNN models.

Algorithms	P value for AUC	P value for Sensitivity	P value for Specificity
BEFS vs. Boosting ensemble	0.719	0.109	0.915
BEFS vs. Logistic regression	0.225	0.064	0.653
BEFS vs. SVM	< 0.0001	0.075	0.993
BEFS vs. C4.5 decision tree	< 0.0001	< 0.0001	< 0.0001
BEFS vs. Naïve Bayes	0.282	0.014	0.011
BEFS vs. Random forests	< 0.0001	< 0.0001	< 0.0001
BEFS vs. MFNN	0.648	0.215	0.069

AUC = the area under the receiver operating characteristic curve; BEFS = boosting ensemble model with feature selection; MFNN = multilayer feedforward neural network; SVM = support vector machine. The P value was obtained by the Student's t test.

Table S2. The difference in the means of AUC, sensitivity, and specificity for predicting remission between the boosting ensemble model with feature selection and other models including the boosting ensemble model, logistic regression, SVM, C4.5 decision tree, naïve Bayes, random forests, and MFNN models.

Algorithms	P value for AUC	P value for Sensitivity	P value for Specificity
BEFS vs. Boosting ensemble	0.911	0.641	0.628
BEFS vs. Logistic regression	0.191	0.330	0.200
BEFS vs. SVM	< 0.0001	0.136	0.806
BEFS vs. C4.5 decision tree	< 0.0001	< 0.0001	< 0.0001
BEFS vs. Naïve Bayes	0.660	0.024	0.212
BEFS vs. Random forests	0.0002	< 0.0001	< 0.0001
BEFS vs. MFNN	0.539	0.365	0.781

AUC = the area under the receiver operating characteristic curve; BEFS = boosting ensemble model with feature selection; MFNN = multilayer feedforward neural network; SVM = support vector machine. The P value was obtained by the Student's t test.



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