



**Table S1.** The frequency of the machine learning algorithms in consulted geoscience literature.

| Machine learning algorithms                     | Frequency |
|---|-----------|
| Random Forest (RF)                              | 14.3      |
| Support Vector Machine (SVM)                    | 10.2      |
| Logistic Regression (LR)                        | 6.8       |
| Artificial Neural Network (ANN)                 | 6.1       |
| Decision Tree (DT)                              | 6.1       |
| K-Nearest Neighbors (KNN)                       | 5.4       |
| Gradient Boosting (GB)                          | 3.4       |
| Adaboost Classifier (ABC)                       | 2.7       |
| Classification And Regression Tree (CART)       | 2.7       |
| Naive Bayes (NB)                                | 2.7       |
| Nearest Neighbors (NN)                          | 2.7       |
| Support Vector Regression (SVR)                 | 2.7       |
| Gaussian Process (GP)                           | 2.0       |
| Gaussian Process Regression (GPR)               | 2.0       |
| Xgboost (XGB)                                   | 2.0       |
| Adaptive Boosting (AB)                          | 1.4       |
| Deep Neural Network (DNN)                       | 1.4       |
| Extra Trees Classifier (TC)                     | 1.4       |
| Linear Discriminant Analysis (LDA)              | 1.4       |
| Long Short-Term Memory (LSTM)                   | 1.4       |
| Support Vector Classification (SVC)             | 1.4       |
| Bagging (B)                                     | 0.7       |
| Bayesian Networks (BNs)                         | 0.7       |
| Back-Propagation Neural Network (BPNN)          | 0.7       |
| Bayesian Ridge (BR)                             | 0.7       |
| Boosted Regression Trees (BRTs)                 | 0.7       |
| Categorical Boosting (CB)                       | 0.7       |
| Convolutional Neural Network (CNN)              | 0.7       |
| Discriminant Analysis (DA)                      | 0.7       |
| Deep Belief Network (DBN)                       | 0.7       |
| Deep and Cross Network (DCN)                    | 0.7       |
| Extreme Learning Machine (ELM)                  | 0.7       |
| Fuzzy Logic (Fl)                                | 0.7       |
| Gaussian Naive Bayes (GNB)                      | 0.7       |
| Grey Wolf Optimizer (GWO)                       | 0.7       |
| Hierarchical Clustering (HC)                    | 0.7       |
| K-Means (KM)                                    | 0.7       |
| Light Gradient-Boosting Machine (LGBM)          | 0.7       |
| Multivariate Adaptive Regression Splines (MARS) | 0.7       |
| Multilayer Perceptron (MLP)                     | 0.7       |
| Multiple Linear Regression (MLR)                | 0.7       |
| Particle Swarm Optimization (PSO)               | 0.7       |
| Pearson VII Function Kernel (PUK)               | 0.7       |
| Quadratic Discriminant Analysis (QDA)           | 0.7       |
| Rotation Forest (RF)                            | 0.7       |
| Ridge Regression (RR)                           | 0.7       |
| Random Tree (RT)                                | 0.7       |

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|---|-----|
| Shapley Additive Explanations (SHAP)                | 0.7 |
| Spectral Clustering (SL)                            | 0.7 |
| Traditional Gradient Boosting Decision Tree (TGBDT) | 0.7 |

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