

Table S1. Complete comparison of all tested machine learning models

Model	MAE (cm ³ .cm ⁻³)	RMSE (cm ³ .cm ⁻³)	R ²	Algorithm type
Light Gradient Boosting Machine	0.032	0.041	0.646	Ensemble Methods-Boosting
HistGradient Boosting Regressor	0.033	0.042	0.638	Ensemble Methods-Boosting
XGB Regressor	0.033	0.042	0.637	Ensemble Methods-Boosting
Gradient Boosting Regressor	0.033	0.042	0.627	Ensemble Methods-Boosting
AdaBoost Regressor	0.035	0.043	0.608	Ensemble Methods-Boosting
CatBoost Regressor	0.036	0.045	0.583	Ensemble Methods-Boosting
Bagging Regressor	0.035	0.045	0.580	Ensemble Methods-Bagging
Linear Regression	0.038	0.050	0.480	Linear Methods
Huber Regressor	0.039	0.051	0.455	Linear Methods
ARD Regression	0.040	0.051	0.453	Linear Methods
Quantile Regressor	0.039	0.052	0.435	Linear Methods
Random Forest Regressor	0.042	0.052	0.434	Ensemble Methods-Bagging
Bayesian Ridge Regressor	0.042	0.053	0.405	Linear Methods
Decision Tree Regressor	0.041	0.055	0.383	Decision Tree Methods
K Neighbors Regressor	0.043	0.055	0.367	Instance-Based Learning
SVR Regressor	0.049	0.058	0.297	Kernel Methods
Ridge Regressor	0.052	0.062	0.177	Linear Methods
Gaussian Process Regressor	0.050	0.063	0.184	Gaussian Processes
Extra Trees Regressor	0.052	0.063	0.177	Ensemble Methods-Bagging
Kernel Ridge Regressor	0.053	0.067	0.066	Kernel Methods
Tweedie Regressor	0.054	0.067	0.057	Linear Methods
Orthogonal Matching Pursuit	0.055	0.068	0.041	Linear Methods
ElasticNet Regressor	0.057	0.070	-0.028	Linear Methods
LassoLars Regressor	0.057	0.070	-0.028	Linear Methods
Lasso Regressor	0.057	0.070	-0.028	Linear Methods
TheilSen Regressor	0.045	0.071	-0.065	Linear Methods
Passive Aggressive Regressor	0.061	0.087	-0.744	Linear Methods
RANSAC Regressor	0.069	0.126	-2.811	Linear Methods