

**Empirical Result Table**

Model	MAE	RMSE	R <sup>2</sup>	Remarks
Random Forest	15.09	22.91	0.9371	The Random Forest model provides a good balance of performance with a high R <sup>2</sup> , but it has some room for improvement with respect to MAE and RMSE, indicating occasional larger errors in predictions.
Gradient Boosting	14.10	22.20	0.9388	Gradient Boosting is similar to Random Forest in terms of R <sup>2</sup> but slightly outperforms it in MAE and RMSE. This small improvement in error metrics makes it a strong choice for applications where minimizing prediction errors is important.
XGBoost	13.91	21.31	0.9436	With the lowest MAE, RMSE, and the highest R <sup>2</sup> , XGBoost provides the most accurate and robust predictions. It's the best model of the three for this task, especially when aiming for minimal prediction error.