**Model Comparison Table You Got:**

| **Model** | **MAE** | **MSE** | **R² Score** |
| --- | --- | --- | --- |
| **Random Forest** | 0.0111 | 0.0055 | **0.2519** |
| Gradient Boosting | 0.0133 | 0.0055 | 0.2513 |
| Ridge Regression | 0.0340 | 0.0073 | 0.0043 |
| Decision Tree | 0.0098 | 0.0075 | -0.0143 |
| Linear Regression | 0.0365 | 0.0078 | -0.0556 |

**Metric Meaning**

| **Metric** | **Meaning** | **Goal** |
| --- | --- | --- |
| **MAE** (Mean Absolute Error) | Average absolute difference between predicted and actual values | Lower is better |
| **MSE** (Mean Squared Error) | Penalizes larger errors more heavily | Lower is better |
| **R² Score** | How well the model explains variability in the data | **1 is perfect**, **0 is useless**, negative means worse than a horizontal line |

**Best Model: Random Forest Regressor**

**Why?**

* **Best R² Score**: 0.2519 → explains ~25.2% of the variance
* **Low MAE**: 0.0111 → on normalized prices (0–1 scale), this means the average prediction error is **1.11% of the price range**
* **Low MSE**: Matches the best score across models

**In contrast:**

* **Gradient Boosting** is close, but slightly worse across all metrics
* **Ridge & Linear Regression** have very poor R² (< 0.01), indicating linear models can't capture the complexity
* **Decision Tree** has low MAE but terrible R² (overfitting, poor generalization)

**Summary:**

| **Rank** | **Model** | **Reason** |
| --- | --- | --- |
| 1 | **Random Forest** | Best R², lowest MAE, robust to outliers |
| 2 | Gradient Boosting | Very close, but slightly worse MAE and R² |
| 3 | Ridge / Linear | Too simplistic for this dataset |
| 4 | Decision Tree | Overfits, poor generalization |