

List of Decided Models and Reasoning

We decided to work with **three machine learning models** for workout type prediction:

1. Random Forest Classifier

- **Reasoning:** It is an ensemble learning method that combines multiple decision trees to improve accuracy and reduce overfitting. Random Forest performs well on mixed numerical and categorical data and can handle complex feature relationships effectively.

2. Decision Tree Classifier

- **Reasoning:** It provides a simple and interpretable model that helps us understand which features most influence workout type classification. It also serves as a baseline model before using more complex algorithms like Random Forest.

3. Support Vector Machine (SVM)

- **Reasoning:** SVM is effective in high-dimensional spaces and is known for its robustness in separating classes with clear margins. It helps us test a non-tree-based approach for comparison and balance between accuracy and computational cost.