

## **Report of Q1 and Q2**

### **1. Classification Task (Datasaurus Dozen):**

- **Baseline Performance:** The baseline J48 and Random Forest classifiers provided initial performance metrics.
- **Parameter Optimization:** Through Random and Grid search methods, we identified optimal parameter settings that improved classification accuracy.
- **Evaluation:** The optimized models showed enhanced performance compared to the baseline, indicating the effectiveness of parameter tuning in improving classification accuracy.

### **2. Regression Task (Used Cars Prices):**

- **Baseline Performance:** Initial regression models using default parameters were established.
- **Parameter Optimization:** Random and Grid search techniques were employed to find the best parameter combinations that minimize mean squared error.
- **Evaluation:** The optimized decision tree regressor exhibited improved predictive accuracy in estimating car prices compared to the baseline model