

~~MODEL METRICS FILE~~

| R-Square | Model |
|-----------|--|
| 0.46 | Linear Regression |
| 0.68 | Support Vector Machine Regressor |
| 0.82/0.98 | Neural Network Classifier (Precision/Recall) |
| 0.75 | CatBoost Regressor |

MODEL FEATURES:

The same feature list was used for all the models. Features: Rented Bike Count, Temperature, Humidity, Wind Speed, Visibility, Dew Point Temperature, Solar Radiation, Rainfall, Snowfall, Time, Functioning Day0, Functioning Day1, Holiday0, Holiday1(One Hot Encoder for Holiday and Functioning Day).

PARAMETERS:

Linear Regression (slope, intercept)

Multi-Linear Regression (equation coefficients)

Support Vector Machine Regressor (C, kernel, degree, gamma, coef0, shrinking, probability, tolerance, cache size, class weight, verbose, max_iter, decision_function_shape, break_ties, random_state)

Neural Network Classifier (hidden_layer_sizes, activation, solver, batch_size, learning_rate, learning_rate_init, power_t, max_iter, shuffle, random_state, tolerance, verbose, warm_start, Momentum, nesterovs_momentum, early_stopping, validation_fraction, beta_1, beta_2, epsilon, n_iter_no_change, max_fun)

CatBoost Regressor (loss_function, custom_metric, eval_metric, iterations, learning_rate, random_seed (random_state), l2_leaf_reg, bootstrap_type, bagging_temperature, subsample, sampling_frequency, sampling_unit, mvs_reg, random_strength, use_best_model, best_model_min_trees, depth, grow_policy, min_data_in_leaf, max_leaves, ignored_features, one_hot_max_size, has_time, ram, nan_mode, input_borders, output_borders, fold_permutation_block, leaf_estimation_method,)

HYPERPARAMETERS:

Linear Regression (None)

Multi-Linear Regression (None)

Support Vector Machine Regressor (C, gamma)

Neural Network Classifier (Learning Rate, Momentum, Adam's Hyperparameter,

Number of Hidden Layers, Number of Hidden Units for Different Layers,
Learning Rate Decay, MiniBatch Size)

CatBoost Regressor (iterations, learning_rate, depth, l2_leaf_reg, model_size_reg,
max_depth, n_estimators)