

Data

Dataset with historical records of Population Distribution, Binary Urban Footprint, etc.



Auto Tuning Algorithm.



Best spatio-temporal regression pipelines for predicting Population Distribution.



Best features.



Hyperparameters

Spatiotemporal Hyperparameters: (p_i, q_i, Φ_i, f_i) for each input variable v_i .

Machine Learning Models to Explore: Linear regression (LR), Lasso regression (LR with L_1 norm), Ridge regression (LR with L_2 norm), Bayesian regression, Trees, Random forest (RF), Gradient boost regressor, Support vector machines (SVM), Multilayer perceptron (MLP), etc.

Other Hyperparameters: number of iterations, options to extract high-order features, search space for models' hyperparameters, percentage for local and global data splits, number of K-folds for local cross-validation, type of input data scaler, random seed, performance metric, etc.

Autotuning: Population Distribution Forecast

