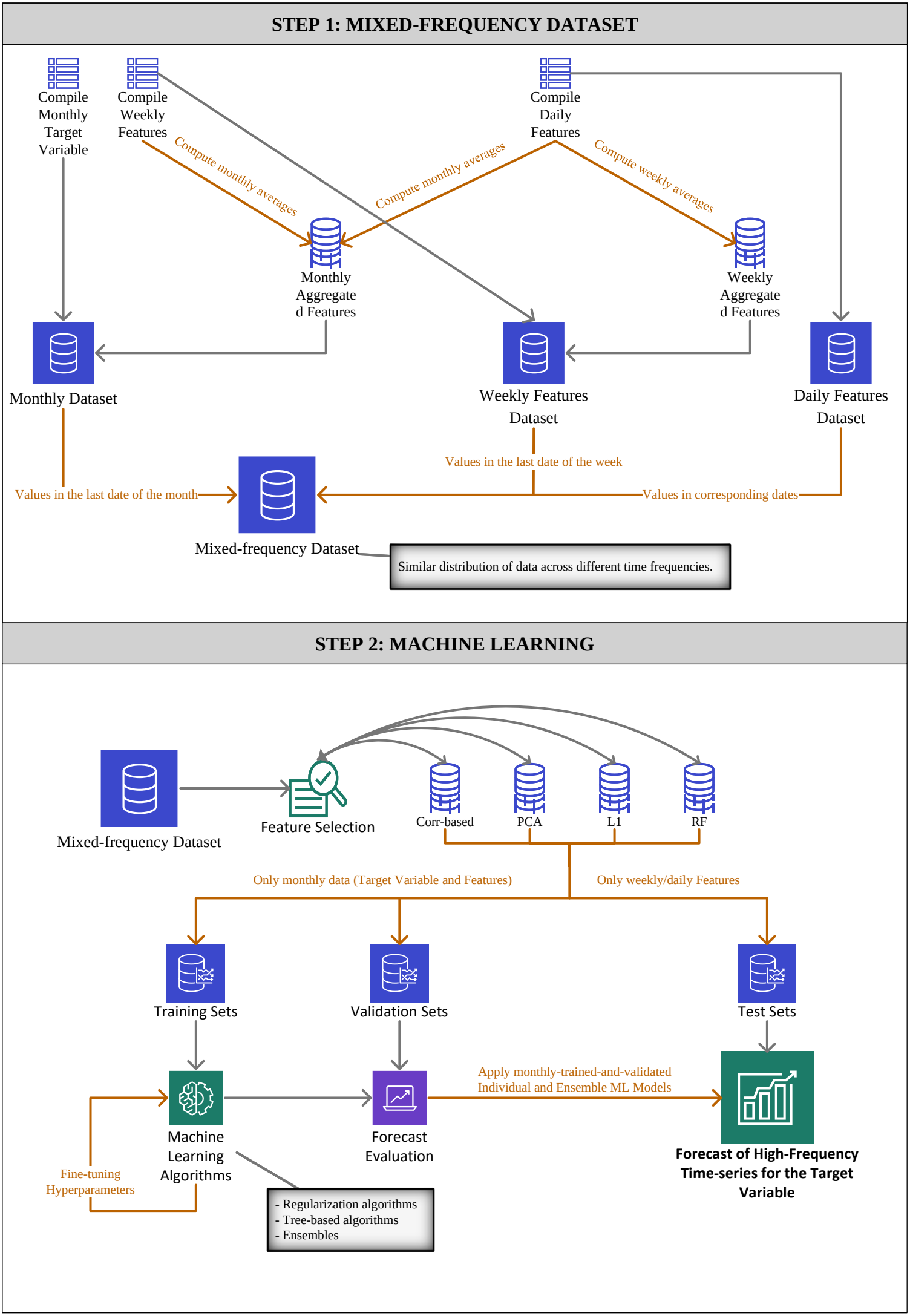
STEP 1: MIXED-FREQUENCY DATASET
Compile Monthly Target Variable
Compile Weekly Features
Compile Daily Features
Compute monthly averages
Compute monthly averages
Compute weekly averages
Monthly Aggregated Features
Weekly Aggregated Features
Monthly Dataset
Weekly Features Dataset
Daily Features Dataset
Values in the last date of the week
Values in the last date of the month
Values in corresponding dates
Mixed-frequency Dataset
Similar distribution of data across different time frequencies.
STEP 2: MACHINE LEARNING
Mixed-frequency Dataset
Feature Selection
Corr-based
PCA
L1
RF
Only monthly data (Target Variable and Features)
Only weekly/daily Features
Training Sets
Validation Sets
Test Sets
Machine Learning Algorithms
Forecast Evaluation
Apply monthly-trained-and-validated Individual and Ensemble ML Models
Fine-tuning Hyperparameters
- Regularization algorithms
- Tree-based algorithms
- Ensembles
Forecast of High-Frequency Time-series for the Target Variable