A. Dataset and Time Series Models
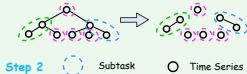
Time Series Feature Extracting
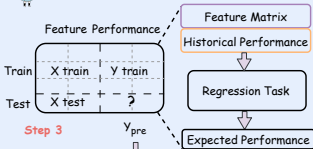
Step 1

Time Series

Tool: tsfeature

Features: Length, Nonlinearity, Entropy, Cross-points, ...

Features → One-hot Encoding → Feature Matrix

Model Zoo: Statistical Models, Neural Network Models, Foundation Models

Subtask Decomposition

Step 2

Subtask ○ Time Series
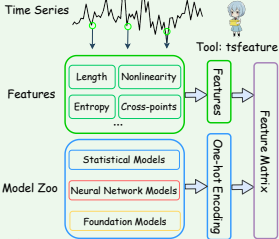
B. Multi-Agent System

Performance Predictor Agent

Feature Performance | Historical Performance

Feature Matrix → Historical Performance → Regression Task → Expected Performance

Train: X train | Y train
Test: X test | ?

Y_{pre}

Step 3

Agent Communication → Prompt Format

Decision-Making Agent

Step 4

Dataset Level → Node Level

m | Total k

Prompt: Y_{pre} | Prompt: Y

For Each Subtask

Statistical Model | NN Model | Foundation Model
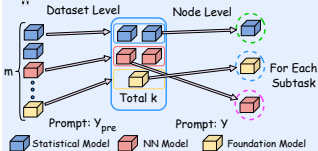
C. Hierarchical Forecasting

Information Aggregation

Step 5

All → Bottom → All

Aggregation
Bottom-up
○ Bottom Nodes
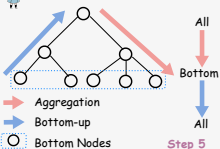
Agent Capability

Interpretability | Visualization | Analysis

In this subtask, we choose TimeMixer, because TimeMixer performed significantly better than other models. The details are ...

Our performance is ..., outperforming all other methods and achieving the improvement of ....