ANN Training Script Walkthrough

Overview

This walkthrough explains how the ANN training script works and how to set up your environment.

1. Prepare Your Environment

1. **Install required R packages:**

   ```
   install.packages(c("nnet","caret","doParallel","openxlsx","readxl"))
   ```

2. **Update `ann_training.R` with your paths and pool names:**

   - `pool_names`: vector of file base names (without `.xlsx`)
   - `training_data_dir`: directory containing your Excel files
   - `saved_model_dir`: directory where `.rds` models will be saved

2. Verify Training Files

Ensure each Excel training file is named `<PoolName>.xlsx` and contains:

- `Total_Load` column (the response variable)

- Predictor columns:

  - Weather features: `AWND`, `PRCP`, `HDD`, `TMAX`, `TMIN`
  - Calendar features: `Mon`, `Tue`, ..., `Sun`
  - Seasonal transform: `Sine`

3. Run the Training Script

Open your R console or RStudio and execute:

```
source("ann_training.R")
```

You will see progress messages for each pool and confirmations when each model is saved to your specified directory.

4. Deploy the Model

Use the "Loading and Using the Saved Model" snippet in your forecasting application. Before making predictions, preprocess new input data with the same centering and scaling objects saved in the `.RDS` file to ensure consistency.