1) `inference_only_notebook.ipynb`

- **Content:**
  A Jupyter notebook dedicated to evaluating trained models. This notebook:
  - Loads all trained models.
  - Plots accuracy and loss curves.
  - Displays confusion matrices and classification reports.
  - Generates sample predictions for visualization.

2.1) `72_automatic_weights` Folder

- **Files:**
  - **`72_window_hybrid_model_automatic_weights.ipynb`:**
    A notebook showing the training process for the 72-hour window forecast model using **automatically computed class weights** (using `compute_class_weight` from `sklearn.utils.class_weight`).
  - **`72_window_hybrid_model_automatic_weights_epoch_10.h5`:**
    Model saved after training for 10 epochs using automatic class weights.
  - **`72_window_hybrid_model_automatic_weights_additional_epoch_10.h`:**
    Model from an additional 10 epochs of training (for extended training).
  - **`72_window_hybrid_model_automatic_weights_additional_10_epochs.ipynb`:**
    A notebook showing extended training runs continuing the original training.

2.2) `72_manual_weights` Folder

- **Files:**
  - **`72_window_hybrid_model_manual_weights.ipynb`:**
    A notebook demonstrating the training process for the 72-hour window forecast model using **manually set class weights**.
  - **`72_window_hybrid_model_manual_weights_epoch_10.h5`:**
    Model saved after training for 10 epochs with manually set class weights.
  - **`72_window_hybrid_model_manual_weights_additional_epoch_10.h5`:**
    Model from an additional 10 epochs of training.
  - **`72_window_hybrid_model_manual_weights_additional_10.ipynb`:**
    A notebook showing extended training runs for the manual weighting approach.

3.1) `48_automatic_weights` Folder

- **Files:**
  - **`48_window_hybrid_model_automatic_weights.ipynb`:**
    A notebook for training the 48-hour window forecast model using **automatic class weights**.
  - **`48_window_hybrid_model_automatic_weights_epoch_20.keras`:**
    Model saved after training for 20 epochs using automatic class weights.

3.2) `48_manual_weights` Folder

- **Files:**
  - **`48_window_hybrid_model_manual_weights.ipynb`:**
    A notebook demonstrating the training process for the 48-hour window forecast model using **manually set class weights**.
  - **`48_window_hybrid_model_manual_weights_epoch_20_additional10.keras`:**
    Model saved after training for 20 epochs with manually set class weights.

4.1) `24_automatic_weights` Folder

- **Files:**
  - **`24_window_hybrid_model_automatic_weights.ipynb`:**
    A notebook for training the 24-hour window forecast model using **automatic class weights**.
  - **`24_window_hybrid_model_automatic_weights_epoch_10.h5`:**
    Model saved after training for 10 epochs using automatic class weights.

4.2) `24_manual_weights` Folder

- **Files:**
  - **`24_window_hybrid_model_manual_weights.ipynb`:**
    A notebook for training the 24-hour window forecast model using **manually set class weights**.
  - **`24_window_hybrid_model_manual_weights_epoch_10_additional10.keras`:**
    Model saved after extended training for an additional 10 epochs with manually set class weights.

`demo_app.py`

- **Content:**
  A Streamlit app script for creating an interactive dashboard. The app allows users to:
  - Select models (by forecast horizon and weight strategy).
  - Display training and validation metrics.
  - View confusion matrices, classification reports, and sample predictions.

`Images` **Folder** - Contains images used in the notebooks.

`model_architecture.png` – a diagrammatic representation of the hybrid model architecture.

`prepare_data_for_inference_notebook.ipynb` - notebook for preparing and formatting the data specifically for inference. Ensures that data fed into the trained models during evaluation is properly pre-processed and ready to use.