

Phase 3 – Model Building, Evaluation, and Deployment

Models Used

- **Prophet** (additive time series forecasting)
- **LSTM** (deep learning for sequence data)
- **GRU** (lightweight deep learning alternative)

Evaluation Strategy

- RMSE calculated between predicted and actual prices
- Evaluation and comparison visualized as line plots
- Plots saved under `/plots/`, models under `/models/`

Deployment

- Streamlit app with dropdowns for stock & model
- Real-time prediction from trained models
- CSV download for Prophet forecasts
- UI served from `/streamlit_app/app.py`

Features in Deployment

- User chooses stock and model
- Model runs on preprocessed `.npz` or `.csv`
- Outputs chart and RMSE, downloadable data