XGBoost Regressor (Weather TMP_C) — Model Evaluation Report

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Target variable: `TMP_C`

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1. Executive Summary

This report compares multiple trained configurations of the model.

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- □ Lowest RMSE: **XGBoost_Optimised** (1.527428197843241)
- □ Highest R²: **XGBoost_Optimised** (0.985226035118103)

Lower RMSE / MAE means the model is closer to the true values.
An R² near 1.0 means the model explains most of the variation in the target.

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2. Metrics Summary

Below is the table of performance metrics:

model	RMSE	MAE	R2
XGBoost_Base	2.15807	1.56732	0.970508
XGBoost_Optimised	1.52743	1.10803	0.985226

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3. Feature Importance

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4. Predictions vs Actual

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5. Error Diagnostics / Training Behaviour

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6. Key Takeaways

- RMSE and MAE quantify average prediction error (lower is better).
- R² shows how much variance in `TMP_C` is explained.
- Feature importance highlights which inputs drive predictions.
- Visual diagnostics (residuals, RMSE by hour/month, learning curve, metric bars) tell us *where* the model struggles or improves.

Report auto-generated for `XGBoost Regressor (Weather TMP_C).`

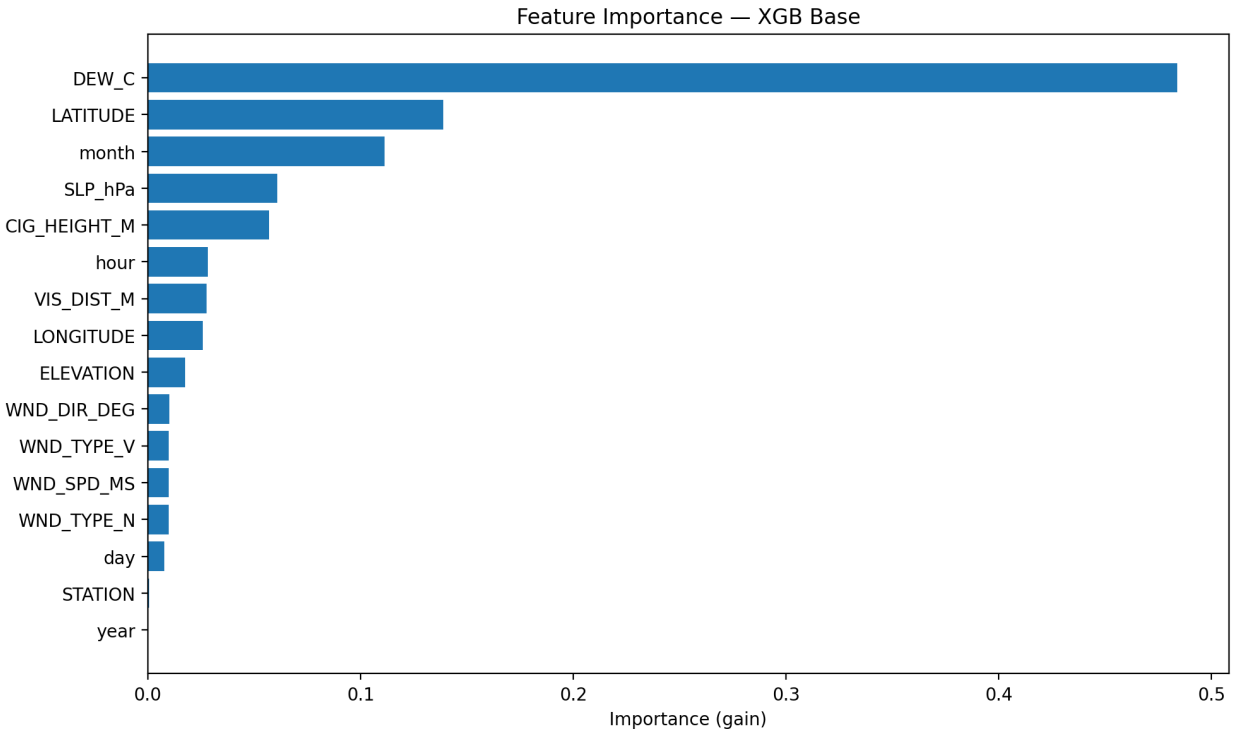

Figure 1: Feature Importance

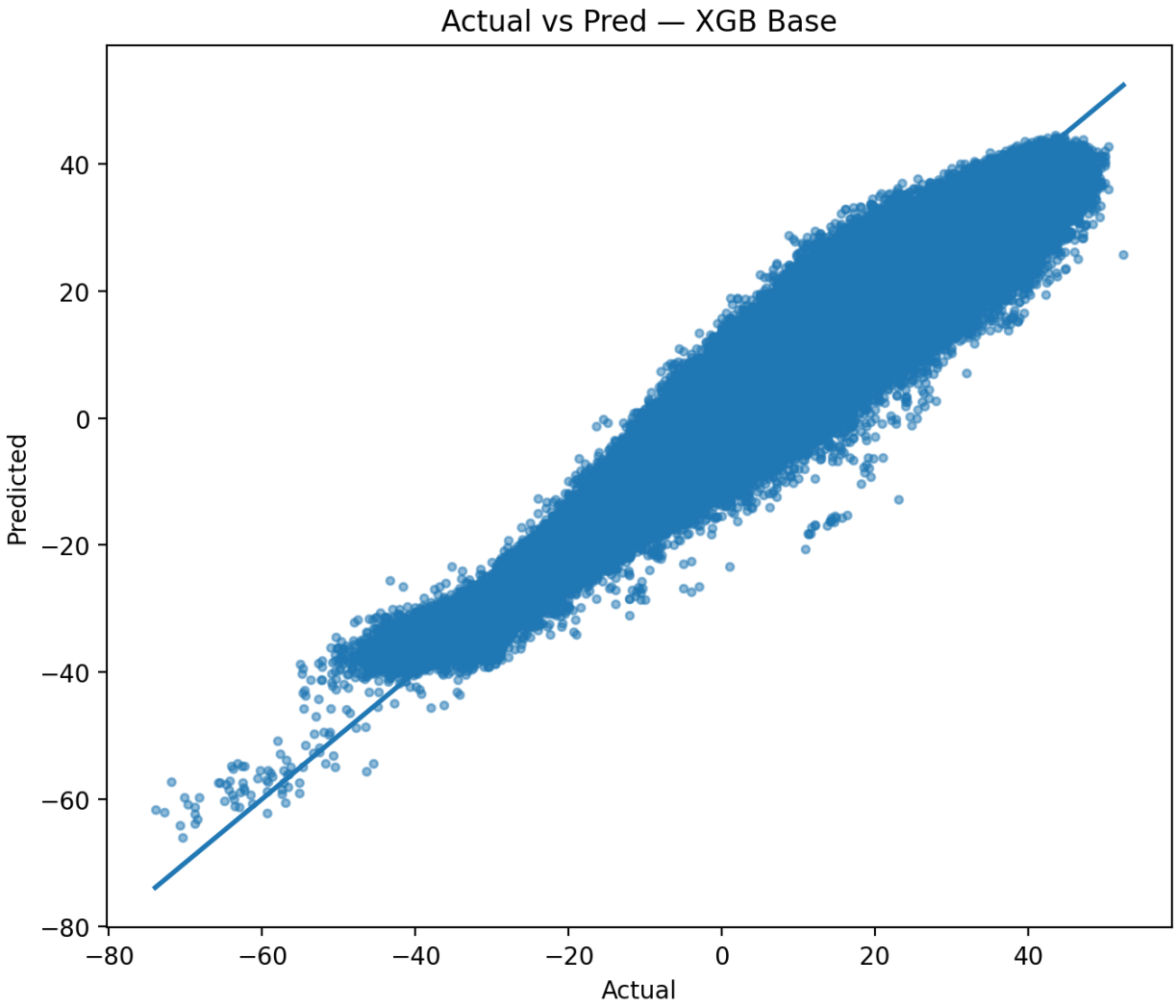

Figure 2: Predicted vs Actual

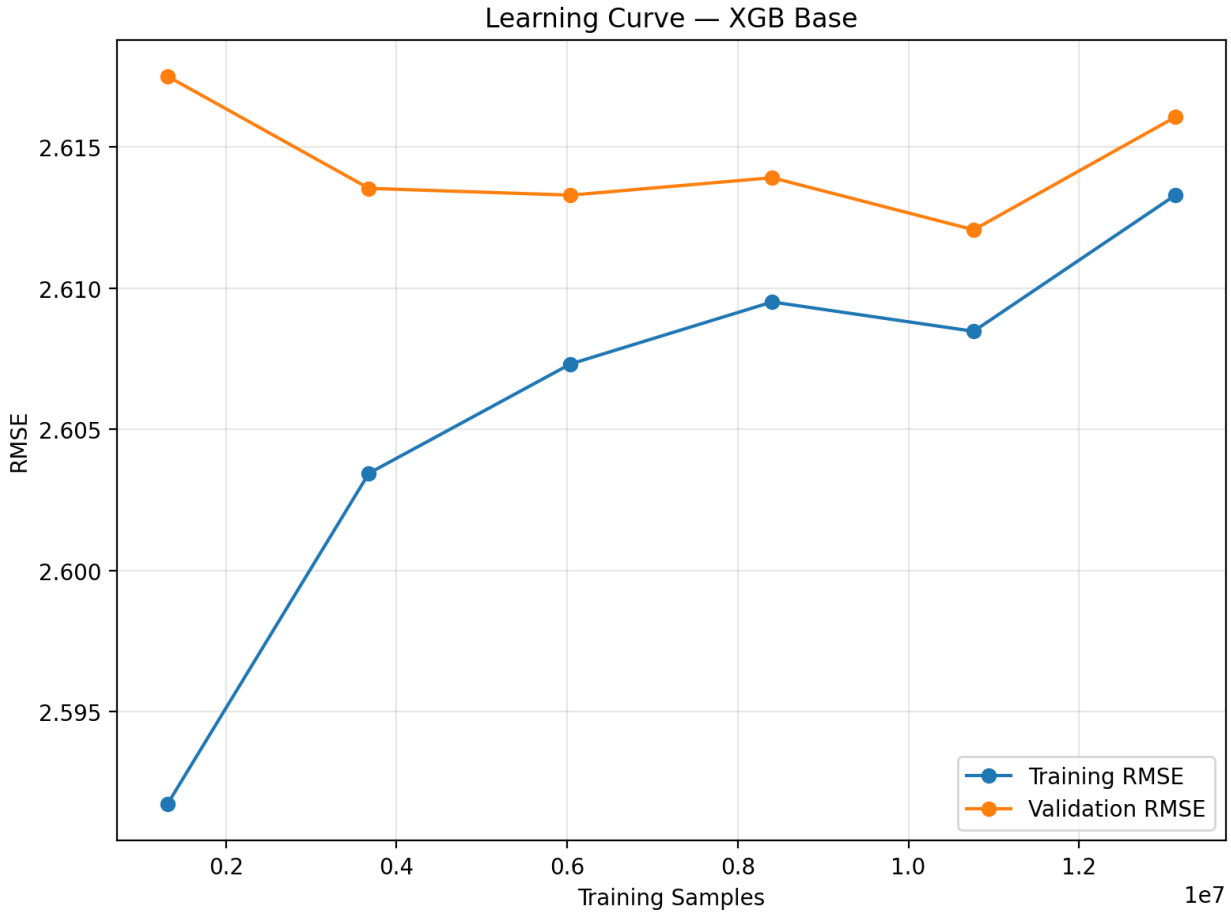

Figure 3: Learning Curve

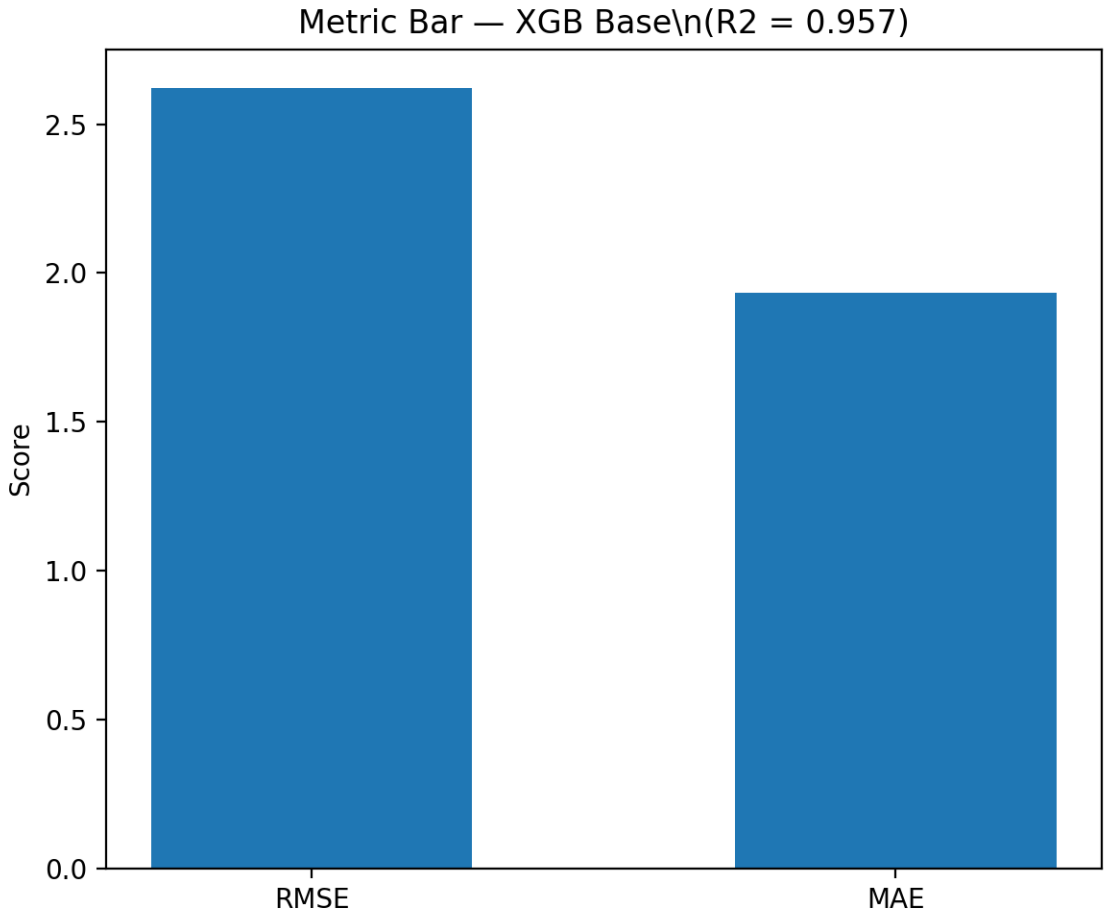

Figure 4: Metric Bar Comparison