

# Rossmann Store Sales Forecasting - Business Report

## Objective

To forecast future sales for Rossmann stores using historical data, helping optimize inventory, staffing, and promotional strategies.

## Models Used

Model	Performance Highlights
-------	------------------------

-----	-----
-------	-------

XGBoost	RMSE: 607, R2: 0.95 - Best Performing
---------	---------------------------------------

LSTM	Performed poorly (likely underfit)
------	------------------------------------

Transformer	High RMSE, R2: 0.47 - Overfit/complex
-------------	---------------------------------------

## Future Sales Forecast (August 2015)

- Weekly predicted sales remained consistently high (approx. 48-49 million per week).
- Promo Days: Insufficient promo data (0), needs cleanup for deeper insight.
- Top 10 Stores: Generated over ~630K predicted sales each.
- Bottom 10 Stores: Around ~480K-495K - may need attention for uplift.

## Insights & Recommendations

- High-performing Stores: Stores like 261, 213, 489 are high-value - prioritize for inventory & staffing.
- Low-performing Stores: Stores like 925, 881, 665 might benefit from targeted promotions or review.
- Promo Analysis: Ensure promo data availability for deeper analysis.
- Model Strategy: XGBoost is production-ready - fast, accurate, and explainable.

## Key Business Value

## **Rossmann Store Sales Forecasting - Business Report**

- Enables data-driven planning for upcoming months.
- Helps optimize marketing spend and staffing resources.
- Foundation for explainability (SHAP) and store-level business strategy.