📁 Loading data from: C:\Users\Arushi Sharma\Documents\retail_demand_forecasting\data\features_rossmann.parquet
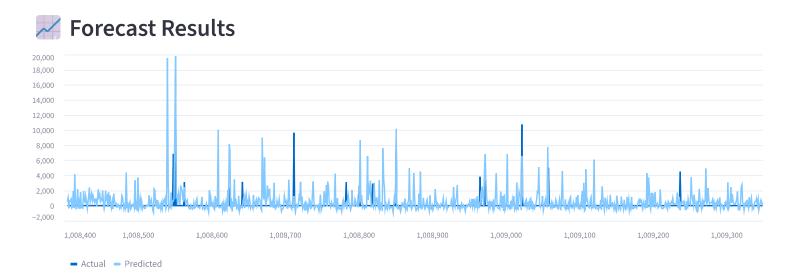
🛍️ Retail Demand Forecasting Dashboard
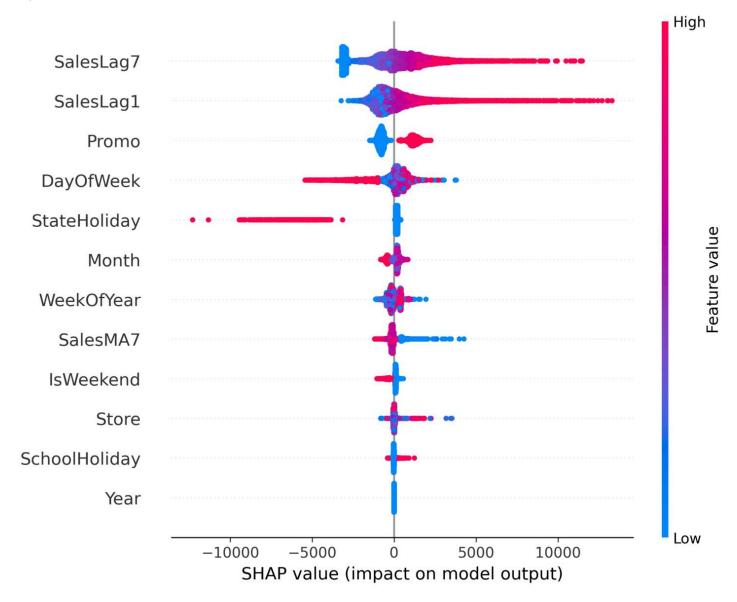
📊 Dataset Overview

Shape: `(1009404, 29)`

	Store	DayOfWeek	Date	Sales	Customers	Open	Promo	StateHoliday	SchoolHoliday	StoreType	Assortment	CompetitionDistance	CompetitionOp
0	1	4	2015-07-24	3706	459	1	0	0	0	c	a	1270	
1	2	4	2015-07-24	3854	468	1	0	0	1	a	a	570	
2	3	4	2015-07-24	5080	607	1	0	0	1	a	a	14130	
3	4	4	2015-07-24	8322	1108	1	0	0	1	c	c	620	
4	5	4	2015-07-24	3815	485	1	0	0	1	a	a	29910	
5	6	4	2015-07-24	3804	454	1	0	0	1	a	a	310	
6	7	4	2015-07-24	9203	1062	1	0	0	1	a	c	24000	
7	8	4	2015-07-24	4917	558	1	0	0	1	a	a	7520	
8	9	4	2015-07-24	5464	546	1	0	0	1	a	c	2030	
9	10	4	2015-07-24	6152	603	1	0	0	1	a	a	3160	

📈 Forecast Results

■ Actual   ■ Predicted
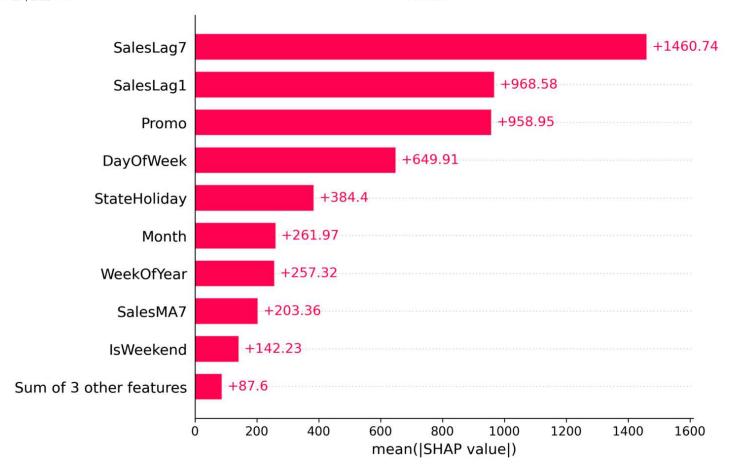
🔍 SHAP Explainability

SHAP Summary Plot

SHAP Bar Plot

🧪 Price Simulation

This section simulates the impact of price changes (±10%, ±20%) on predicted sales.

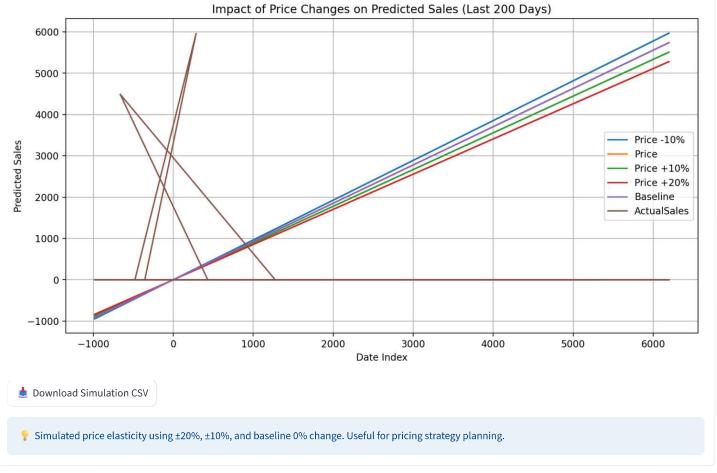> 📉 Price Simulation – Impact on Predicted Sales
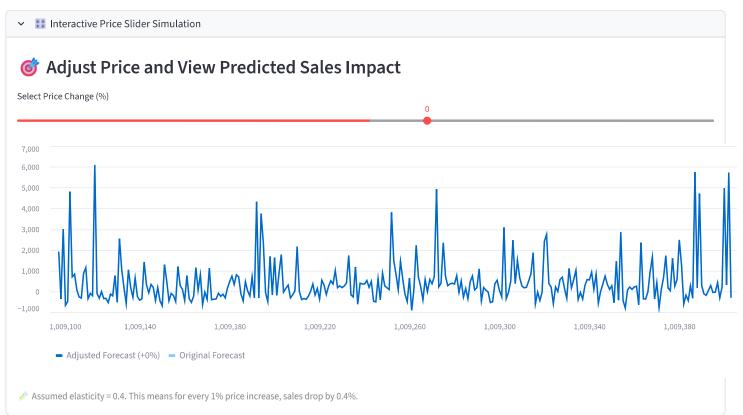
🧪 Forecast Simulation Based on Price Changes

✅ Simulation results loaded.

Simulated Sales Under Price Change Scenarios

Model was trained **without Price** to avoid leakage. Price was added later for simulation only.

Impact of Price Changes on Predicted Sales (Last 200 Days)

📥 Download Simulation CSV

💡 Simulated price elasticity using ±20%, ±10%, and baseline 0% change. Useful for pricing strategy planning.

⌄ ⠿ Interactive Price Slider Simulation

🎯 Adjust Price and View Predicted Sales Impact

Select Price Change (%)

0

■ Adjusted Forecast (+0%) ■ Original Forecast

📏 Assumed elasticity = 0.4. This means for every 1% price increase, sales drop by 0.4%.