ELECTRIC VEHICLE RANGE PREDICTION

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OUR PROBLEM

The transition to electric mobility is emerging as a major challenge for the 21st century. **Range** is now one of the most decisive criteria for consumers and car manufacturers. It depends on many factors such as battery capacity, engine power, vehicle weight, and aerodynamics.

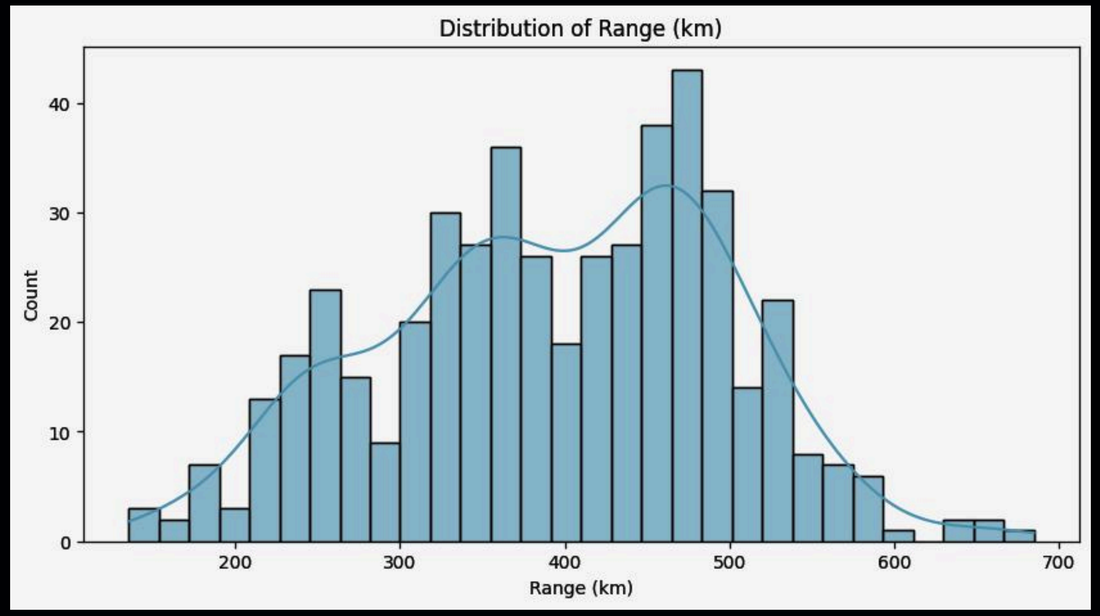
Data Insights (EDA)

Electric Vehicle Specs Dataset (2025)

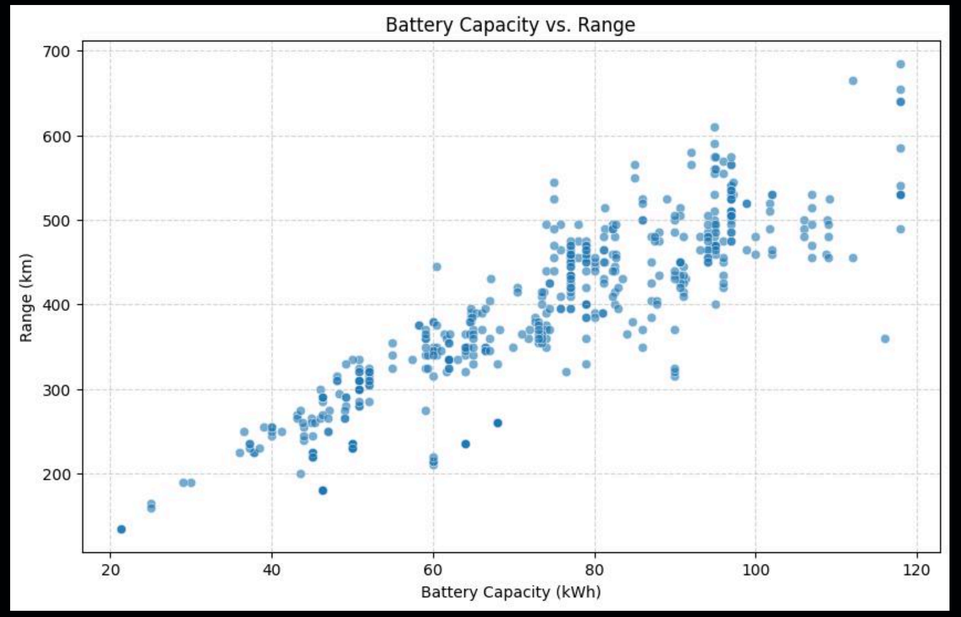
478 rows, each corresponding to a unique electric vehicle configuration. For example : Porsche Taycan Turbo GT Weissach
22 columns, with key variables such as Range, Efficiency, Battery Capacity...

	brand	model	top_speed_kmh	battery_capacity_kWh	battery_type	number_of_cells	torque_nm	efficiency_wh_per_km	range_km	acceleration_0_100_s	...	towi
0	Abarth	500e Convertible	155	37.8	Lithium-ion	192.0	235.0	156	225	7.0	...	
1	Abarth	500e Hatchback	155	37.8	Lithium-ion	192.0	235.0	149	225	7.0	...	

Data Insights (EDA)



Distribution of Range (km)

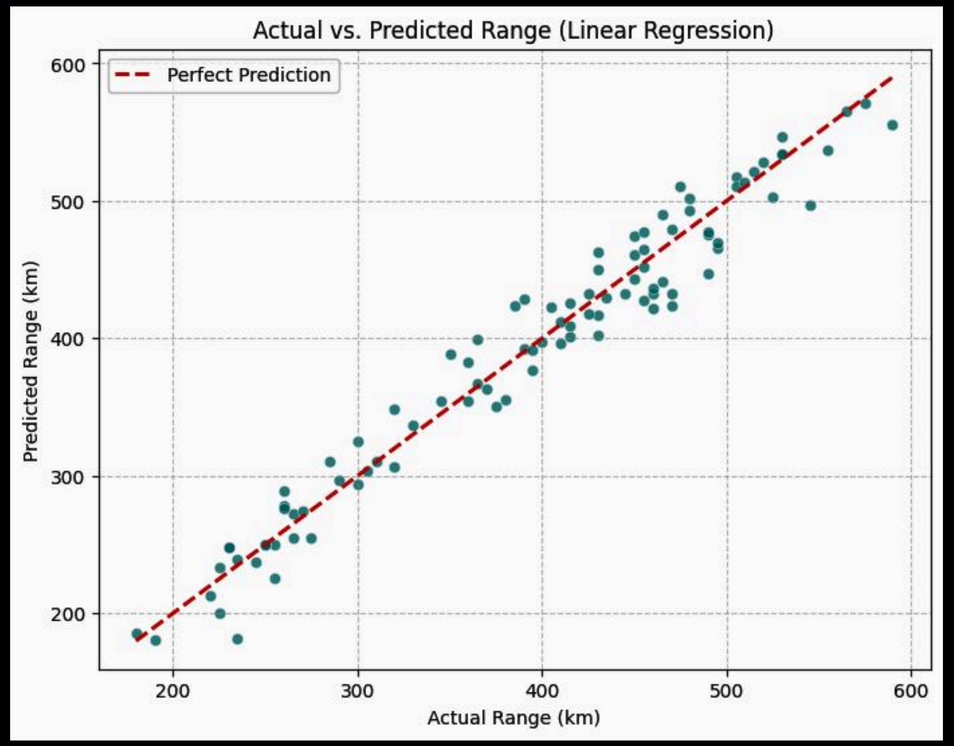


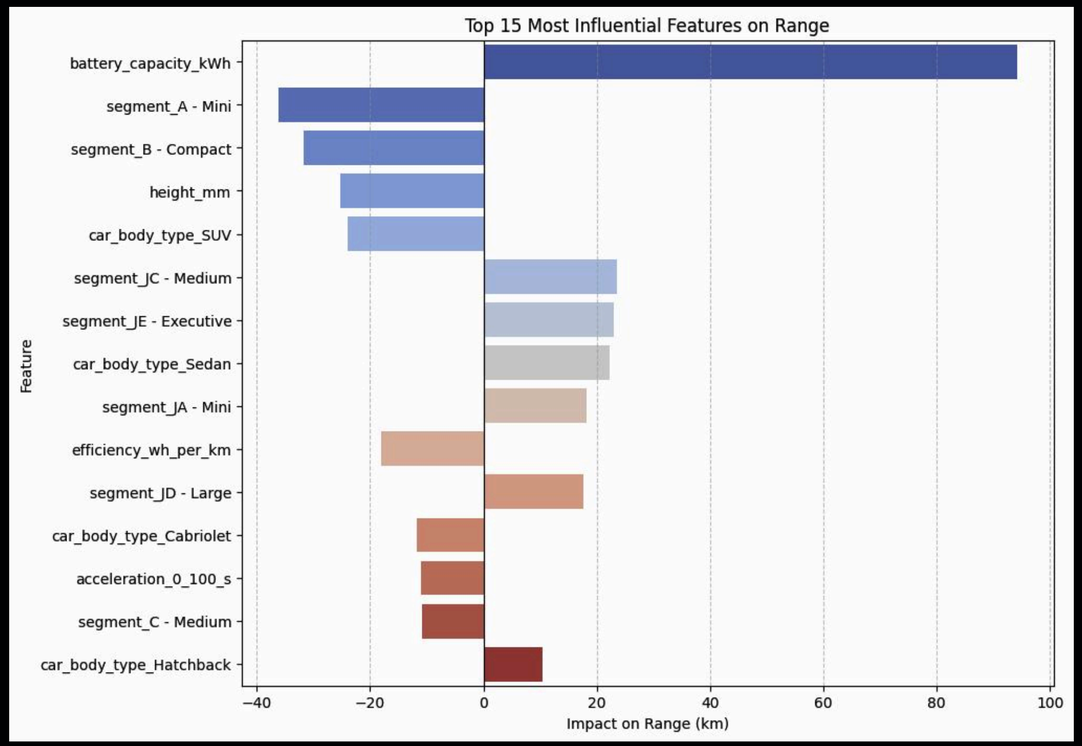
Battery Capacity vs Range

OUR SOLUTION

- Task: Supervised Regression
- Target Variable : Range in kilometers (range_km)
- Baseline Model: Linear Regression
- Performance Metric: Root Mean Squared Error (RMSE)

Our First Model : Linear Regression





Next steps

- Introduce LASSO Regression
- Introduce Non Linear Models (i.e Random Forest Regressor)
- Introduce PCA
- Reduce the RMSE to around 15 km