



**DATA SCIENCE USE CASE: TIME SERIES PREDICTION**

# Next Service Forecasting for Connected Vehicles

**Motivation**

Predicting when the next maintenance will be needed enables better planning of the activities, workload, and required service parts. This makes the process more efficient, reduces downtime, and increases customer satisfaction.

**Why Data Science and Artificial Intelligence?**

In order to predict the next service date, it is necessary to predict future usage. With data-driven approaches, we can learn about future usage patterns not only by considering past behavior but also by considering other influencing factors like the geographical location, the period of the year, and weather conditions.

**Approach**

The telemetry dataset is enriched with historical weather data collected by hundreds of weather stations spread around the countries of interest. AVL applies ML-based modeling techniques to learn the relationship between past vehicle usage, location, period of the year, and environmental conditions and consequently forecast when each vehicle in the fleet should visit the workshop.

**Input**

- Telemetry / usage data (time series)
- Vehicle specifications / meta data
- Historical weather data

**Output**

- ML-based model to predict the future usage
- Predict the vehicle operation in the future
- Predict date of service for every vehicle in the fleet
- Predict service effort, needed spare parts and pricing

**Benefits**

- Reduce downtime
- Increase customer satisfaction
- Efficient resource planning
- Optimize spare parts logistics

**FIND OUT MORE**

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