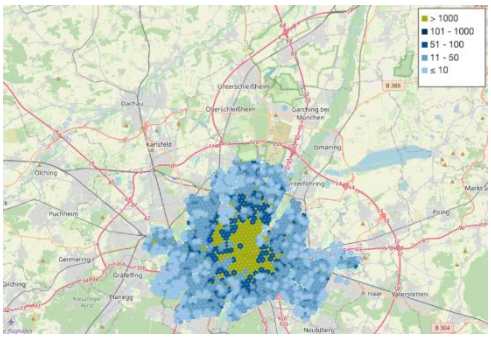
Technical University of Munich
School of Engineering and Design
Institute of Automotive Technology

Interdisciplinary Project (IDP)

Big data analytics & machine learning: analysing electric vehicle fleet data

Electrification is one of the major trends in automotive technology and a cornerstone of making transportation more sustainable. Besides human mobility like commuting or leisure trips, commercial purposes are another critical sector. Many cities apply strict directives for their own fleet. Those often concern means of public transport like busses but also municipal vehicles like garbage trucks and utility vehicles needed for a multitude of tasks like winter road clearance, gardening etc. In order to assess the electrification potential of such particular tasks and develop the next generation of municipal vehicles, it is crucial to thoroughly analyze recorded data and draw knowledge on the actual usage of such vehicles.



Together with the partners Evum Motors (manufacturer of an electric municipal vehicle) and MCube Consulting, it is the goal of this IDP to analyze fleet telemetry data and generate in-depth knowledge on real-world usage of the vehicles. This comprises e.g. information on charging patterns, working hours, driven distances, consumption etc. Through clustering and other machine learning methods, it is aimed to construct typical usage patterns representative to different types of work. The vehicle fleet data is to be amended with supplementary data like temperature or precipitation.

The main tasks within the scope of this IDP comprise:

- In-depth preparation and statistical analysis of available fleet data
- Collection of supplementary data (e.g. weather)
- Grouping the available data and construction of typical use-cases
- Visualizing the data and anlyses

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