CARISSMA
Institute of Electric, Connected and Secure Mobility

Technische Hochschule Ingolstadt

June 2022

Abschlussarbeit

"Estimation of the State of Charge (SoC) and/or State of Health (SOH) in real driving cycles"

Beschreibung:

The interest and use of electric vehicles are increasing exponentially, and they are gradually replacing traditional vehicles based on combustion engines due to environmental concerns and legislation. The objective is to develop data-based models to predict the state of charge of an electric vehicle battery (Tesla Model 3). The purpose is to calibrate the model using actual Tesla Model 3 travel data (speed, acceleration, heat, etc.) combined with environmental data (temperature, elevation, etc.) to predict service life and/or state of charge. The novelty of this thesis is that the model can be used to predict vehicle maintenance. The model will be able to estimate the battery capacity for each type of route.

Ihre Aufgaben:

- First Phase: Defining the experiments, installing/configuring the programs necessary to collect data from the Tesla vehicle.
- Second Phase: Development of a data-driven model.
- Third Phase: Writing the text document of the thesis, representing/presenting the results.

Ihr Profil:

- Driver's license is desirable but not required.
- MatLab or Python experience and knowledge are desirable but not required.
- Basic knowledge of battery systems is desirable.
- Confident use of MS Office.

Interesse? Fragen? – Kontaktieren Sie uns!

Kontakt:

Carlos Antônio Rufino Júnior
E-Mail: carlos.rufino@carissma.eu

Prof. Dr. Hans-Georg Schweiger
Hans-Georg.Schweiger@thi.de