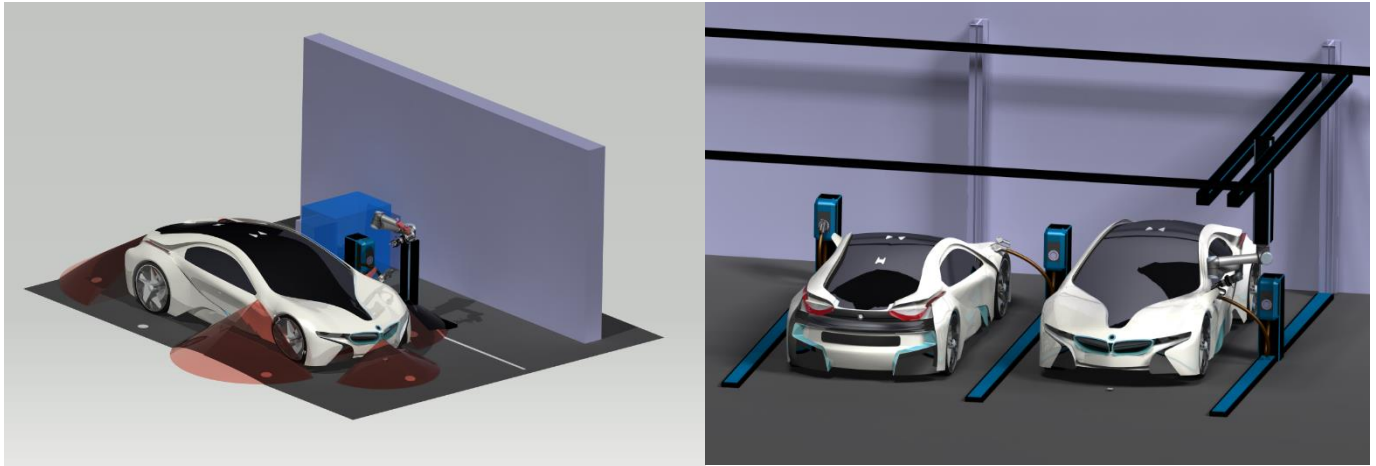


Master Thesis



Development of charging flap detection and opening strategies for fully automated charging applications of electric vehicles

Electrification and automation became a big part in today's life. It is expected that from 2035 it will no longer be possible to register vehicles with conventional combustion engines. Therefore, the whole infrastructure starts to change. A part of these changes include the fully automation of the charging process.

The goal of this master thesis is to develop and implement strategies for a fully automated charging process at public charging stations.

Scope of work:

- Research and analysis on charging flaps geometry and opening trajectory of predefined fleet
- Definition of required system parameters in order to detect charging flaps via camera or LIDAR system
- Definition of required system parameters in order to open charging flaps via robotic arm
- Implementation of strategies in MATLAB and Halcon
- Documentation and presentation of the work

Requirements:

- Knowledge & experience with MATLAB, image recognition and LIDAR systems of advantage
- Fundamentals of automotive engineering
- Motivation & Joy to work in the new field of charging automation in public areas

Duration: 6 month
Start: As from now
Workplace: Institute of Automotive Engineering

An expense allowance is offered for the Master's thesis.

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