



AVL is the world's largest independent company for development, simulation and testing technology of powertrains (hybrid, combustion engines, transmission, electric drive, batteries and software) for passenger cars, trucks and large engines.

We offer a master thesis:

## Mathematical modelling of an optimization algorithm for automatic optimization of the powertrain and transmission ratios

### Task:

- Developing a generic mathematical system optimization algorithm
- Understanding the physical parameters of the transmission and the powertrain for the optimization
- Mathematical modelling of the transmission and the powertrain
- Defining mathematical cost functions for the evaluation of different transmission structures
- Defining requirements for the boundary conditions of the optimization
- Implementation and verification of optimization strategy for an existing application

### Study:

- Control Engineering, Mechanical Engineering, Automotive Engineering, Applied Mathematics

### Your Profile:

- Base Matlab/Simulink programming skills
- Base knowledge of passenger car transmissions
- Base knowledge of mathematical optimization algorithms
- Good background in physics and applied mechanics
- Good spoken and written English skills

Remuneration: The successful completion of the thesis is a one-time fee of EUR 2.500, - gross remuneration

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