

## Bachelor thesis proposal

# Design of Mechanism for Self-Driving Bikes

## Background

[In a research project the department](#) develops self-driving bikes with the purpose to be used in test-driving experiments where vehicles' safety systems for bike safety are tested. Volvo Cars, Veoneer, Autliv and AstaZero are partners in the project. The bicycle drives pre-defined trajectories carrying a dummy to look as similar as possible as a real biker to the vehicle's sensor system. Designing the bikes contain several challenging tasks. So far, a first-generation bike, the red one, and a second generation, the black one has been developed.



## Problem description

The project task is to modify the design of the mechanism making the bike self-driving so that it can be mounted on other bikes so that they can also be used as test objects. The new designed mechanism should be built and validated. The requirements on the portable system is different than the existing bike so there will be several interesting design tasks to be solved.

## Purpose and aims

- Design and build a portable system for self-driving bikes.
- Validate and demonstrate on some different bikes.

**We are searching for** two highly motivated students from the Mechatronics program or similar background. Experience in electronic design and control is of value.

**The student will** gain competences within mechanical and electrical design, real time control vehicle test procedure.

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