

## Open Thesis/Project (Hiwi)

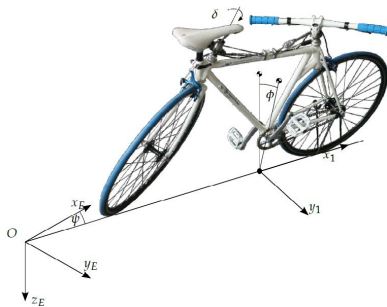
### Control of an Autonomous Rear-Steered Bike

#### Description:

The Institute for Systems Theory and Automatic Control is seeking a Hiwi to help us develop a controller that can stabilize the rear-steered bicycle (RSB) around its upright position. Over the last few years, we have designed controllers for the RSB that work perfectly in simulation, and we are now looking for someone to transfer these theoretical results into an actual working application. Specifically, you will be responsible for programming a Raspberry Pi to control the steering angle and acceleration of our rear-steered bicycle. You will work on implement and test the controller in real-world conditions. We are looking for someone with experience programming Raspberry Pi and conducting experiments, as well as a background in systems theory and automatic control. Please don't hesitate to write me an email if you are interested.

#### Prerequisites:

- Programming experience, e.g., Python, *C++* or *C*
- Interest in topics related to controller design and autonomous vehicles



#### Supervisor:

**Yifan Xie**

Room 3.236

#### Area:

Controller Design  
 Autonomous Vehicles

#### Properties:

Type: **Hiwi**

50% implementation  
 30% experiments  
 20% simulation

#### Beginning:

From now on

#### Duration:

Flexible

#### Salary:

Up to 100% (Hiwi), or according to the working hours

More information: <https://www.ist.uni-stuttgart.de/teaching/bama/>

Aushang vom March 14, 2023