



Lehrstuhl für Sicherheit in der Informatik  
Prof. Dr. Claudia Eckert



*Announcement of a student job in cooperation with Fraunhofer AISEC, Garching*

# Programmer for Pentesting Framework

## Motivation and Task Description

Fraunhofer AISEC is developing the open source penetration testing software gallia <sup>1</sup>, which targets the automotive domain. Gallia can be used to find bugs and security vulnerabilities in Electronic Control Units (ECUs) of cars. The software consists of different parts: network stack, scanner and analyzer. The network stack includes protocols used in the automotive domain, such as ISO-TP, UDS, XCP. The scanners implement specific test cases to find bugs in the target ECU. The analyzer detects anomalies in the results created by the scanners.

To support us in research and development, we are looking for a motivated open source developer. Possible topics include:

- Implement new Scanner
- Add new network protocols (e.g. DLT)
- Improve the analyzer
- Quality assurance and automated testing

The monthly working time is 40 hours, but can be de-/increased on request.

## Requirements

- High level of self motivation and problem solving capabilities
- Python programming
- Optional: Experience in data analytics with python (numpy, pandas, ...)
- Knowledge about automotive network protocols (e.g. UDS) is helpful

## Contact

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<sup>1</sup><https://github.com/Fraunhofer-AISEC/gallia>