Chair of Security in Information Technology
TUM Department of Electrical and Computer Engineering
Technical University of Munich

Assistant (Student)

Tutor: Project Laboratory Secure SoC for the Internet-of-Things (IOT-LAB)

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The Project Laboratory Secure SoC for the Internet-of-Things (IOT-LAB) relies heavily on practical lab work. In order to support the students with their practical work a tutor position is available. During the lab several IOT sensor nodes (Texas Instruments Sensortag) are used in combination with their open source operating system "contiki-ng" written in C. The students have to solve several tasks including:

- Capture and evaluate existing communication with Wireshark
- Utilize several hardware peripherals of the used microcontroller
- Use the MQTT and COAP protocols to achieve certain tasks
  (e.g. active LEDs or send current sensor values)
- Secure the MQTT and Coap communication with either authenticated encryption
  (AES-GCM) or (D)TLS

The tasks of the tutor would be to provide support to the students in the form of weekly meetings or remote supervision (e.g. in a chat tool or via remote meetings) and help with the organization (preparation of the lab equipment etc.).

Timeline and working hours

From 15.10.2021 until the 31.01.2022 with a total of 6 hours weekly. It is possible to extend to the contract for a preparation phase during the semester break (preferably beginning in September 2021).

Prerequisites

- Profound knowledge of the C programming language
- Knowledge about computer networks and the usage of Wireshark
- Microcontroller programming
- Ideally the lab was already completed in a previous semester
- Self organized work during the semester

Contact

Technical University of Munich
Chair of Security in Information Technology
Thomas Schamberger
Theresienstr. 90, N1010
 Email: t.schamberger@tum.de

Advisors

Thomas Schamberger