Karlsruhe Institute of Technology

Institute for Automation and Applied Informatics (IAI)

Earliest Start: Whenever you are ready

Implementing Network Protocols for Substations
Student / Junior Research Assistant (m/f/d) 40 hours/month

You are passionate about network protocols, smart grid and cutting-edge operational technology? Join our team as a Student / Junior Research Assistant in our Resilient and Secure Automation (RSA) research group, where we address the cybersecurity of distributed Industrial Control Systems (ICS) with a focus on future energy infrastructures. The research platform is Energy Lab within the Security Lab Energy (SecLabE).

What we offer:

- Be part of supportive research team and participate in exciting scientific and technical tasks with strong industrial connections, working on real-world hardware and applications,
- Opportunity for long-term collaboration, including MA or BA thesis projects,
- Benefit from flexible working hours to suit your schedule.

Tasks:

- Implementing network protocols (e.g., RESTCONF, NETCONF, IEC 61850, MQTT, OPC UA) for substation communication and monitoring systems,
- Contribute in real-time simulation experiments and analysis of substation operations,
- Contribute to real-time simulation experiments and performance evaluations,
- Assist in reporting and documenting comparative analyses of network protocols.

Education, Experience, and Skills:

- Currently enrolled in a degree program (Bachelor or Master) in Electrical Engineering, Computer Science, Information Technology, or a related field,
- Experience with at least one of the programming languages Python, MATLAB and/or C++,
- Solid understanding of network communication protocols, including RESTCONF, NETCONF, and IEC 61850,
- Familiarity with energy or network components, smart grids, or power networks is a plus.

- If you are interested, please send your **CV** and **transcript of records** to the contact person via email.

Contact person: Arman Attar
Group: Resilient Secure Automation (RSA)
E-mail: arman.attar@kit.edu

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