

Internship / Working Student / Thesis – Software & System Development (5G/6G, IoT Testbed & Embedded AI)

Multiple Openings · Starting June – September 2026 · Onsite in Offenburg Office

About Us

At IICT GmbH- International IoT Communication Technologies, we develop hands-on training systems and experimentation platforms in IoT, 5G/6G, and Embedded AI. Our projects combine embedded systems, wireless communication, and artificial intelligence to tackle real-world experimentation and optimisation problems. Join our international deep tech start up team and help shape the future of connected technologies.

Website: <https://www.ii-ct.com/>

IICT GmbH – Training Academy : <https://www.iict-training.com/>

Role & Responsibilities

Depending on your background and start date, you will work across one or more of the following areas. All roles involve hands-on technical work in a live lab environment, direct contribution to research and demonstrator projects, and regular reporting to the project team.

Hardware & Lab Engineering

Design, assemble, and validate physical testbed infrastructure for repeatable wireless experiments:

- Set up RF-shielded enclosures in a standard 19" rack, including internal cabling, attenuators, and splitters.
- Integrate programmable RF attenuators and noise sources between nodes and validate the complete setup.
- Write Python/SCPI drivers to control laboratory instruments (noise generators, channel emulators, power analysers) via GPIB, LAN, and USB interfaces.
- Wrap instrument control scripts into a unified REST or MQTT API for the central testbed automation system.

Software, Automation & Web Development

Build the software layer that orchestrates, schedules, and monitors testbed experiments:

- Develop a web dashboard with a calendar-based scheduling system for remote testbed reservation and test configuration.
- Connect the frontend to existing backend services using specified REST APIs.
- Implement Python-based automated test cases and scripts across multiple IoT radio technologies (BLE, Wi-Fi, LoRaWAN, MIOTY, 5G).
- Compare test behaviour between emulated (lab rack) and real-world field environments to identify performance discrepancies.

IoT, Embedded AI & xG Connectivity Use-Case Demonstrators

Create end-to-end IoT applications and intelligent control systems that showcase and optimise network performance:

- Define industry-relevant IoT scenarios (e.g. smart factory asset tracking, environmental monitoring) in collaboration with industry stakeholders.
- Connect physical sensors to IoT evaluation boards and build live dashboards displaying sensor data and network health metrics.
- Integrate an O-RAN Near-RT RIC and develop a monitoring xApp to pull live RAN metrics.
- Train lightweight ML models (reinforcement learning or supervised regression) to predict link quality and dynamically adjust RAN parameters (modulation, transmit power) to maintain target QoS.

Across all areas you will also:

- Document results and report progress to the project team.
- Conduct user and stakeholder interviews to identify and validate requirements.

Qualifications & Requirements

Ongoing Bachelor or Master studies in Computer Science, Electrical/Communications Engineering, or a related field student in German Universities with a valid student work permit.

Basic knowledge in one or more of the following:

- Wireless communication technologies (Wi-Fi, LTE/5G, LoRa, BLE).
- Programming and scripting: Python, JavaScript, or C/C++.
- Web development (HTML, CSS, JavaScript; frameworks welcome).
- Linux environment and networking basics.
- ML/AI frameworks (relevant for the AI & demonstrators focus area).
- Curiosity and a willingness to learn quickly.
- Team-oriented mindset and good communication skills.
- English required; German is a plus.

What We Offer

- A fixed-term part-time student work contract with a competitive salary aligned with industry standards and the candidate's professional background, starting as soon as possible.
- Exciting projects spanning IoT, Embedded AI, and 5G/6G domains.
- A collaborative, international, research-driven environment with room for your own ideas.
- A chance to shape demonstrators used in real workshops and industry showcases.

How to Apply

Send your CV and a short motivation letter — mentioning why you think these tasks are interesting for you and which area(s) you are most interested in — to info@ii-ct.com

We are already looking forward to your application!