

Student Assistant (HiWi):

Embedded Firmware Architecture for Energy-Autonomous Wireless Sensor Nodes

We are looking for a highly motivated student assistant to support the further development of an energy-autonomous wireless sensor node platform. The goal of this work is to transform an existing firmware into a modular and extensible embedded software framework that can easily integrate new sensors and communication interfaces.

Your Responsibilities:

1. Analyze and restructure the existing embedded firmware architecture
2. Improve code quality, readability, and maintainability
3. Create clear and comprehensive software documentation
4. Develop modular sensor integration frameworks
5. Implement and improve support for digital and analog interfaces such as: e.g.
 - I2C
 - SPI
 - UART
6. Develop mechanisms for easier integration of new sensors and peripherals
7. Support long-term maintainability of the project

We are looking for someone who:

1. has strong knowledge of embedded systems programming in C,
2. understands ARM microcontroller architectures,
3. enjoys writing clean and maintainable firmware,
4. is comfortable understanding and improving existing codebases,
5. works independently and systematically,
6. and takes ownership of technical work.

What We Offer:

1. Work on real-world deployed wireless sensor systems for precision agriculture
2. Deep hands-on experience in embedded firmware architecture
3. Flexible working hours
4. Opportunity to contribute significantly to an active research platform

If you are interested, please send:

- CV
- Links to embedded/ software projects or GitHub (optional)

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