

CAN I COMBINE SCIENCE AND BUSINESS IN A SINGLE JOB?

**YES.**

We'll show you how at Fraunhofer IIS.

For the »**Self-Powered Radio Systems**« department in **Nürnberg**, the Fraunhofer Institute for Integrated Circuits IIS is currently seeking a

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## Student Assistant / Intern

### Dashboard Development for LPWAN Energy Analysis

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The department of »**Self-Powered Radio Systems**« is focused on efficient systems and protocols for wireless data transmission and energy harvesting. One priority is the area of Internet of Things (IoT) and Industrial Internet of Things (IIoT), which led to the development and ongoing improvements of **Mioty**, a new **low-power wide-area network** (LPWAN) technology. Mioty, an ETSI standardised system, is analysed, among other features, with respect to energy efficiency, and compared to other LPWAN technologies, e.g. NB-IoT (3GPP).

To predict the energy consumption of different LPWAN systems, i.e. Lora, Mioty, NB-IoT and Sigfox, a Python based analysis framework has been developed. The goal is to compare LPWAN systems for specific use cases and to find the best, i.e. longest lasting, solution within the required specifications. For the existing framework, an interactive dashboard should be developed.

#### Your tasks

- You get to know development tools, e.g. Git, Doxyen
- You become familiar with Python and dashboard library Dash (Plotly)
- You develop a dashboard structure, with relevant input parameters, e.g. LPWAN type, communication states, and output objects (charts, tables ...)
- You implement dashboard and test with two typical LPWAN use cases
- You deploy an export of the dashboard into a static document (pdf)
- Optional: Display of additional information, e.g. map of regions with corresponding ISM band, tables of ISM band data

#### Your profile

- You are studying electrical/electronic engineering or computer science
- You have good knowledge with Python
- You are experienced with an object oriented programming language
- You are familiar with website design (nice to have)

#### What you can expect from us

- An **open and cooperative** working environment
- Collaboration in interesting and **innovative projects**
- Many opportunities to gain practical experience and attend seminars
- **Flexibility** concerning your working hours

If you have any questions about this opening, please contact [wolfram.strauss@iis.fraunhofer.de](mailto:wolfram.strauss@iis.fraunhofer.de)

#### Interested?

Please apply for this position using the following link: <https://recruiting.fraunhofer.de/Vacancies/61910/Description/2>  
Applications are possible **in German and English**. Please include a cover letter, your CV and your latest transcripts of records (as PDF) and quote ID number **61910-LV**. Address your application to Nina Wörlein.

Please let us know how you learned about this job opportunity.

Additional information is available on our website: [www.iis.fraunhofer.de/en](http://www.iis.fraunhofer.de/en)