

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

Bachelor / Master Thesis Student

ML based Classification of States in LPWAN Current Consumption Curves

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. In an automated test setup, current consumption of different communication stages, e.g. transmission, reception, sleep, for all LPWAN systems are measured. To classify the different communication stages in the measured time series, machine learning algorithms shall be applied.

Your tasks

- You familiarise with machine learning method and algorithms
- You develop an unsupervised and supervised classification model
- You compare of both models

Your profile

- You are studying electrical/electronic engineering or computer science
- You are familiar with Julia (Python)
- You are experienced in programming in Python or Julia
- You are experienced in machine learning

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

Interested?

Please apply for this position using the following link: <https://recruiting.fraunhofer.de/Vacancies/61918/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 **61918-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