

We have an immediate and exciting opening in our **Locating and Communication Systems** Department in **Nuremberg** for

## **Interns or Student Assistants (f/m)**

### **Topic: IEEE 802.15.4 compliant UWB receiver – Matlab implementation**

You'd like to simulate and evaluate an IEEE 802.15.4 compliant UWB receiver tool-chain in Matlab? Then this is the right place for you!

Unique properties of the **Ultra-Wideband (UWB)** technology including a high spatial resolution and accuracy (in the order of cm), robustness to multipath propagation effects, and ability to share spectrum bands with other radio systems make it an optimal candidate for **indoor localization applications**. Additional advantages of UWB based radiolocation systems, such as hardware simplicity, low power consumption and costs, ensured the creation of several commercial systems. **IEEE standard 802.15.4** defines the physical layer of UWB ranging/positioning systems.

#### **Your task**

- Studying the IEEE 802.15.4 standard
- Capturing UWB signals using a real-time oscilloscope
- Selection of receiver architecture
- Matlab implementation of the receiver
- Decoding captured signals
- Tests and evaluation

#### **What you bring**

- Solid programming skills and basic experience in Matlab
- Basic electronics background
- Experience with measurement equipment
- Proficiency in English and German
- Good self-management skills and yes-can-do attitude

This project is an ideal start for you if you wish to work as a research engineer later on.

#### **What you can expect from us**

- Wide-ranging projects with high practical relevance
- Flexible hours that allow you to balance your studies and on-the-job experience
- An open and friendly work environment
- Extensive professional support from scientific mentors and
- Sufficient opportunity to develop your interests, knowledge and skills

#### **Have we piqued your interest!**

Send your detailed resume via e-mail to [personalmarketing@iis.fraunhofer.de](mailto:personalmarketing@iis.fraunhofer.de) and reference ID number **129685**. And don't forget to tell us how you learned about this opportunity.

Additional information on job openings can be found at: [www.iis.fraunhofer.de](http://www.iis.fraunhofer.de)