

# Open Thesis / Project

## Accurate and precise distance estimation using WiFi

### Motivation

Accurate and inexpensive indoor localization is required in many applications, such as tracking objects in a warehouse. State-of-the-art wireless technologies which are typically used for indoor localization, such as BLE and UWB, now support Phase-Difference of Arrival (PDoA). This feature has shown to provide good accuracy distance estimation for BLE but has not been tested yet for WiFi. Your job is to implement and test a PDoA-based WiFi ranging system.

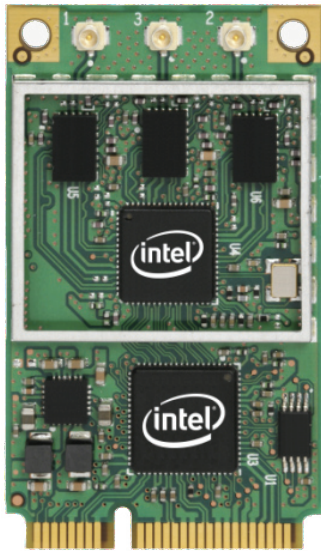
**Interested? Please contact us for more details!**

### Target Group

Students in ICE/Telematics, Electronics and related.

### Thesis Type

Master Thesis (Duration: 6 months).



Source: Linux 802.11n CSI Tool, 2020

### Goals and Tasks

- Program embedded devices;
- Design methods and conduct experiments;
- Analyze results and compare with the existing related literature;

### Requirements:

- Good programming skills (e.g., Python);
- Will to improve your knowledge on WiFi and ranging mechanisms.

### Used Tools & Equipment

- WiFi NIC (provided by us)
- A Laptop
- Additional equipment required by the tests.

### Contact People

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- Leo Botler ([leo.happbotler@tugraz.at](mailto:leo.happbotler@tugraz.at))



Source: Bosch Rexroth, 2020