Open Thesis / Project
# Estimating distance between BLE devices via PDoA.

## Motivation
BLE beacons are broadly used for indoor localization as those devices are cheap, energy efficient and are omnipresent. Typical BLE-based localization systems employ signal strength measurements to estimate the distance between two devices although this approach suffers from poor accuracy. A recent alternative uses Multi-Carrier Phase Difference (MCPD) of Arrival and its current evaluation results are very promising. No method nor evaluation has been demonstrated so far for MCPD taking advantage of the multiple antennas capabilities of BLE 5.1. Your job is to design such a method, implement on real devices and evaluate it.
**Interested? Please contact us for more details!**

## Target Group
Students in ICE/Telematics, Electronics and related.

## Thesis Type
Master Thesis (Duration: 6 months).

## Goals and Tasks
- Program embedded devices;
- Design a method and conduct experiments;
- Analyze results and compare with the existing literature;

## Requirements:
- Good programming skills (e.g., C and Python);
- Enjoy learning about new software tools and technologies.

## Used Tools & Equipment
- BLE modules (provided by us)
- A Laptop
- Additional equipment required by the tests.

## Contact People
- Dr. Konrad Diwold (kdiwold@tugraz.at)
- Leo Botler (leo.happbotler@tugraz.at)



Source: Digi-Key electronics, 2020



Source: Medium, 2020