

Internship – Development of Wi-Fi sensing systems for medical applications

Who we are

WiFine is a startup project developing surveillance, localisation and motion recognition devices on the basis of the standard Wi-Fi hardware for various medical applications. WiFine is funded by the SATT Paris-Saclay and CentraleSupélec, and hosted by the MICS lab at Gif-sur-Yvette.

Job description

Recent advances in device-free wireless sensing have shown its potential to transform traditional wireless networks into smart sensing devices, capable of target localisation and activity recognition without equipping the user with any devices. Due to its ubiquitous presence, Wi-Fi signals are among the first to be employed. A wide range of applications has been tested by the research community, such as presence, intrusion or fall detection, daily activity and gesture recognition, in-door localisation and tracking, and estimation of vital parameters.

The development of the Wi-Fi sensing devices for real-life applications is complicated by the unpredictable variability of the environment, as well as the gap between the achievements of the research community and the needs of the end users. The goal of this project is to bridge this gap and design a robust Wi-Fi sensing system for real-time monitoring of patients in different medical environments.

The key tasks of the project include, but are not limited to, the following:

- Recording of Wi-Fi signals in real-life conditions with a group of subjects, in various scenarios
- Development and numerical simulations of signal processing algorithms for the extraction of relevant information from the raw Wi-Fi signals
- Exploration and tuning of machine learning algorithms for the processing of the data

Required skills

- Strong background in radio frequency communications and wireless access networks
- Experience in signal processing
- Programming skills in Matlab and/or Python
- Basic understanding of machine learning
- Innovative, outside-of-the-box thinking

Why work with us

- Growing start-up with multiple opportunities
- High-level scientific environment within the MICS lab
- Flexible hours and remote work possible
- Salary: 1500 €/month after taxes

Contact

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