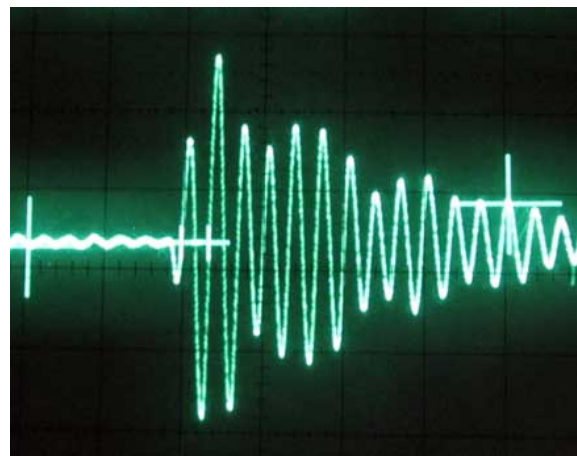




Radio Signal Fingerprinting

Nowadays, various sensors are used to gain behavioral insights about crowds at a statistical level. Airports use it to control the flow of people through the building or retail shops use it to get to know their customers. This information is collected using different kinds of sensors. Location information is gathered by catching the Wifi signals of the visitors' smartphones and demographic information is collected with cameras.

The goal of this thesis is to build a system that is able to distinguish mobile phones based on their radio signals. In order to achieve this, one should define and implement an algorithm that is able to differentiate and recognize different smartphones based on their emitted RF signals (physical layer). The signals can be received with a software-defined radio and can then be analyzed to find small manufacturing differences to distinguish the individual devices. We have some ideas on how to approach this task, but we would love to hear your take on this as well! If this sounds interesting to you, do not hesitate to contact us so we can have a chat.



This thesis will be done in collaboration with an external company. The main work location can either be Zurich or Bern.

Requirements: Programming experience, interest in digital signal processing, and creative thinking. There will be weekly meetings with your supervisors to discuss progress and open questions.

Interested? Please contact us for more details!

Contacts

- Simon Tanner: simon.tanner@tik.ee.ethz.ch, ETZ G97