Data Extraction for the Quantified Self

Svetlana Pospelova
Viacheslav Inozemtsev

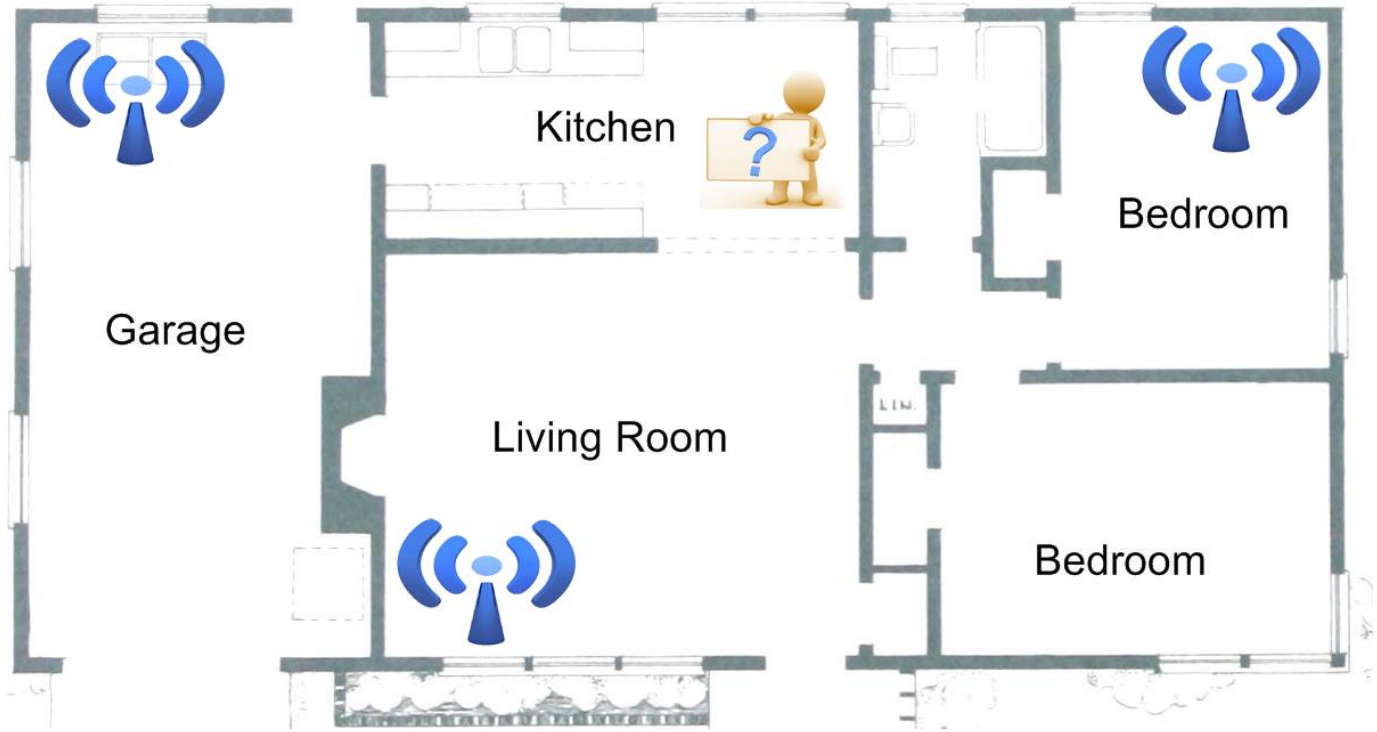
Introduction

Measurement of human's indoor movements is useful for analyzing treatment progress of depressed people. It shows how actively person behaves, and gives objective view of his or her psychological condition. Our solution allows to do such measurements.

Approach

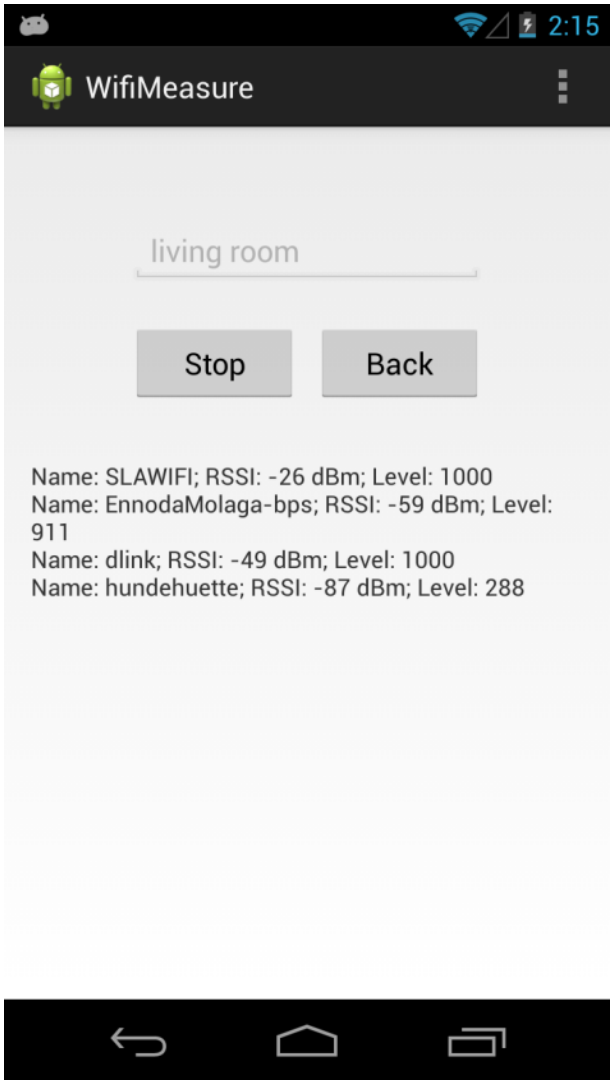
We analyze surrounding Wi-Fi networks to retrieve person's indoor position. Signal strength of each network carries partial information about where he or she is at the moment. Combining this information we conclude person's position.

Approach



Implementation

We developed Android application, allowing to classify where the person is situated. We used machine learning techniques to obtain person's position from surrounding Wi-Fi network signal strength. We chose **k nearest neighbors** algorithm for classification.


2:15
WifiMeasure
living room
Stop
Back
Name: SLAWIFI; RSSI: -26 dBm; Level: 1000
Name: EnnodaMolaga-bps; RSSI: -59 dBm; Level: 911
Name: dlink; RSSI: -49 dBm; Level: 1000
Name: hundehuette; RSSI: -87 dBm; Level: 288

Prospects

- Exhaustive testing for robustness
- Analysis and possible substitution of classification algorithm
- Implementation of the connectivity with the server

Thank you for your attention