

Graduate Research Day 2013

Florida Atlantic University

College of Engineering and Computer Science

Indoor Localization using WiFi iWireless LANs

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Nowadays the widespread availability of wireless networks has created an interest in using them for other purposes, such as localization of mobile devices in indoor environments because of the lack of GPS signal reception indoors.

As part of the Campus 2020 project we develop an indoor localization platform for WiFi nodes (such as smartphones and laptops) that identifies the building name, floor number, and room number where the user is located based on a fingerprint location identification of WiFi access point signals.

We use J2EE technology with the Apache Tomcat web server for managing WiFi signal data from the FAU WLAN. A nearest neighbor method applied at runtime maps the WiFi client node to the precise location inside FAU buildings. The prototype localization client application runs on Android cell phones and operates in the East Engineering building at FAU.

More sophisticated classifiers will be used to improve the localization accuracy once we gather sufficient training data.