BuildingSense

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Research Hypothesis

It is possible to determine which campus building we are in by dynamically associating different access point MAC addresses with corresponding location information and keeping energy consumption at a minimum. This is possible using pattern matching techniques and GPS technology.
Application

An Android user can walk around into different buildings, and the app itself can pass ID information through BuildingSense (BuildingSense will run locally or on server-side; we will optimize for minimal energy consumption). BuildingSense will then associate location information with particular MAC ID patterns in a database for retrieval. There is no need for any supervised training.
Evaluation Platform

Our application will run on an Android OS phone - Samsung Galaxy III. BuildingSense will most likely run on a server, and our app will continuously feed server-side code MAC ID data. We will then use MATLAB to make a plot associating each ID with a particular GPS coordinate.
Important Graphs

Building clusters graph:
MAC IDs are clustered to associate with different buildings

Energy Comparison Graph:
Compare the energy consumption by BuildingSense and purly GPS method