Salem Sati M.Sc.
Technology of social networks
Institute for Computer Science
Room: 25.12 01.34
Contact: sati@cs.uni-duesseldorf.de

HEINRICH HEINE
UNIVERSITÄT DÜSSELDORF

Master Thesis

A Multi-Layer Testing Environment for Mobile Opportunistic Networks

Topic

Nowadays most of the handheld devices such as smart phones and tablets support both Wi-Fi and Bluetooth. Opportunistic networks allow to establish wireless spontaneous connections and delay-tolerant networking, in which messages are passed on step by step, whenever a chance is given. However, testing such networks, from the lowest Data Link Layer up to the Application Layer is a challenging task. Suitable tools are missing.

Haggle is famous and common middleware targeted for opportunistic networks. It is implemented using Java and C++ and it is event-driven. Within this thesis, a test environment is created for Haggle over a Linux platform, allowing to control the capability from the MAC layer to upper layers. This gives the opportunity to fully design, conduct and interpret testing setups.

Scope

This thesis will focus on the establishment of a exhaustive testing environment for Haggle on Linux. It will allow to configure various parameters in the setup of the network on various layers and to run controlled tests.

Requirements

Background of computer networks and communications.
Basic knowledge Linux monitoring and measurement tools.
Solid knowledge of Java and C++ programming.

Technology of Social Networks

0 1 2 3 4 Theory (Analysis)

0 1 2 3 4 Empirical (Simulation)

0 1 2 3 4 Practical (Implementation)

0 1 2 3 4 Literature