



SA: Signature Recognition on (Finger) Touch Screens

This document describes the subject and the general time schedule of the semester thesis of *Pascal Bissiger* in the fall term 2011. Adaptations or changes can be agreed upon by the advisors.

Motivation and Informal Description

The ubiquitous availability of mobile devices with touch screens presents many interesting challenges. A crucial one is how to protect private data on the device from the hands of others in case the device is lost or gets stolen.

A typical way to deal with this problem is to use either passwords, which are hard to hide from the eyes of curious bystanders and hard to memorize, or so-called lock screens, that require the user to enter a secret pattern on the screen in order to unlock the device. The latter has the problem that simple patterns can be easily derived from the traces left by the finger on the screen. This is sufficient since the recognition process only exploits geometric properties of the pattern and no dynamic features such as time or pressure. Complex patterns, on the other hand, are hard to memorize and therefore less practical.

All these problems can be overcome by using one's signature as pattern and exploiting all available measurements of the signing process to ensure a high recognition rate while providing security towards forged signatures.



Goal

The goal of this project is to develop a ready-to-use signature recognition app for Android phones. This involves to explore the theoretical background of signature recognition on touch screens in order to develop an understanding of how touchscreen traces can be digitally represented, compared to each other, and abstracted in order to provide the means for classification.

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