



Specialization Module / MA Project / BA / MA

Smartphone Gesture Recognition On Piecewise Linear Approximated Sensor Signals

Description:

Smartphone Gesture Detection is one of the key enablers for alternative Human-Smartphone interaction methods. While waking up the smartphone's Application Processor (AP) with each sensor sample, the AP is prevented to make use of its sleep modes for energy savings. Piecewise Linear Approximation (PLA) is a known lossy but computational efficient technique to reduce the amount of sensor data before further processing.

In this work, a PLA-based smartphone gesture recognition should be implemented and compared to state-of-the-art gesture recognition methods. The following tasks should be done within the scope of this work:

- literature research about PLA approaches and gesture recognition methods
- implementation of a PLA-based smartphone gesture recognition
- comparison of recognition accuracy and performance analysis
- documentation of the results

Requirements:

- Experience in Android App programming and sensor signal processing

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