Eidgenössische Technische Hochschule Zürich
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Distributed Computing

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BA/SA/Group:

Real-Time Sensor Processing

The input systems of gaming consoles such as the Kinect sensor or the Wii Remote have drastically changed how people interact with games. Most users are very excited about the new possibilities such that developers are trying to use them not only in games but also for everyday use like, e. g. controlling your household appliances through gestures. Since today's smartphones also possess a plethora of sensing capabilities, developers and researchers are also very keen on putting these opportunities to good use. A few phones already have features like "tilt to zoom" or "tap to scroll", which go into the right direction. However, we still think that there is a huge potential to improve smartphone user interaction based on readily available sensors.

The goal of this thesis is to come up with interesting ideas on how real-time sensor processing can be used to improve interaction with smart phones and then realize these ideas in practice. As an example, we think of using accelerometer and gyroscope readings to gauge (and maybe also predict) the movement of a smartphone held in the hand while a person walks. These inputs could then be used to shift the display contents accordingly to stabilize them (similar to a camera image stabilization) and thereby (possibly) increase the readability.

Requirements: Creative thinking, advanced programming skills, the determination to put your ideas into action, and the ability to work independently are necessary to work on this topic successfully. Android programming knowledge is helpful but not mandatory.

Interested? Please contact us for more details!

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