**Master Thesis/Internship/Semester Thesis**

**Open Source Platform for Management and Analytics of Medical Data from Wearable Activity Trackers**

**Keywords:**
Mobile App, Medical Data Analytics, Physical Activity Tracking, Sleep Behavior, Accelerometer, Embedded System, Wearables.

**Project Goal:**
Development of a platform aimed at managing wearable health trackers, and an easy-to-use analytics tool for various types of data collected during diagnostic and rehabilitation assessments.

**Project Description:** Monitoring physical activity is one of the indispensable methods in diagnostics and rehabilitation. However, the available commercial devices used to track activity are either limited to a particular clinical setting (by their size, ease-of-use or price), and/or are embedded in a commercial structure which does not offer transparency and access to raw measured data. To tackle these issues, we have developed a low-cost, activity tracker, based on a 3-axis accelerometer. The aim of this project is to implement a data management platform for the developed activity tracker. Two challenges will be considered: (a) Configuration and uploading of on-line data pre-processing/compression algorithms on the device microcontroller, and (b) Off-line data post-processing on an open source multi-platform app. The management app will enable to program the activity tracker with a selected algorithm, as well as to read the data from the tracker, process them off-line, and visualize the results. Integration with a health data bank such as MIDATA is envisioned in the context of the project.

**Requirements:** Programming skills are required. Experience with microcontrollers is a plus.

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**More info and further projects at:**
http://www.mhsl.hest.ethz.ch/education/projects.html