



Topic: Horse Activity Recognition with Large-Scale Textile Pressure Sensor Array

Goal: This project aims at unobtrusively analyzing sport horse's activities under real-life condition to enhance their health condition and performance. Large-scale textile pressure sensor array, that has been the kernel outcome of EU project SimpleSkin (<http://www.simpleskin.org/?videos>) and also other sensors will be used.

Workflow:

Month 1: get familiar with sport horse, the pressure sensor array and corresponding data recording/processing framework
Month 2: ethics control, building textile sensor into horse saddle
Month 3: data recording with real horses
Month 4: data mining algorithms development
Month 5: build live demonstrator
Month 6: documentation, paper and thesis writing

Advantages:

- 1) You'll have an easy start: the work will be based on the advanced hardware platform developed within EU project; and ready-to-use framework for data recording and processing (used already in lecture, more details: <http://www.wearcomlab.de/teaching.html>, under tab: Winter Semester-> Ubiquitous Computing Lab)
- 2) Germany as the right place for sport horses (Germany ranks the 1st on the Olympic Equestrian medal table)
- 3) possibility of writing a paper based on the thesis

Requirements:

- . Experience in or lectures on Data Mining (better including deep-learning)
- . Good programming skills with Matlab or Python or C++(Qt)
- . Experience in or lectures on image/video processing
- . Love sport and animals
- . Good written and oral English (oral German if possible)