Team Project FSS 2024

Activity Recognition for Health Psychology Studies

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Project Motivation: Health Psych Research

- We have been closely collaborating with the [Chair of Health Psychology](#)
- One of the interesting research areas from their perspective is the impact of eating habits on an individual's psychology and overall (mental + physical) health.
- There are also several social science factors involved in this area.
- In order to study this, they need reliable data acquisition methods.

Project Motivation: Data Acquisition Problem

- **Challenge**: Reliable, unbiased data in social science/health psychology
  - **Issue**: Self-reported surveys prone to errors, bias
  - **Bias sources**: Fear of judgment, embarrassment
- **Solution**: Ubiquitous smart home sensors, microphone in kitchen
  - **Approach**: Privacy-preserving data collection
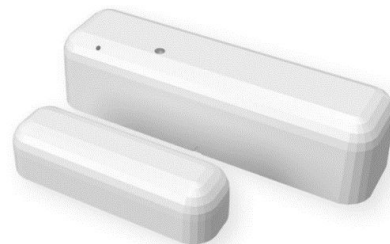
Project Motivation: Audio-event recognition

- **Project focus**: Activity recognition via audio data
- **Methods**: Testing various audio-based recognition techniques
- **Components**: Privacy-preserving data acquisition, pre-processing, on-device label predictions
- **Further Exploration**: Context-event relationship
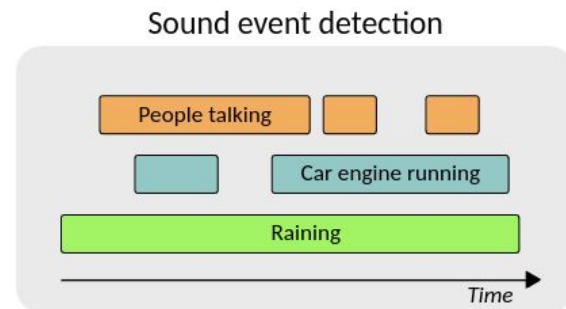
A. Mesaros et al.: arXiv:2107.05463 (2021)

Team Project: General Details

- **Title**: Activity Recognition for Health Psychology studies
- **Language**: English
- **Duration**: 12 months
- **Min/Max no of participants**: 3-8
- **Pre-requisites**: General knowledge of AI and ML methods, Python
- **Contact person**: Darshit Pandya (darshit.pandya@uni-mannheim.de)