A Survey on Life Logging Data Capturing

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Devices (a small selection)

- Mobile Phone
- Heart Rate Monitor
- SenseCam
- Fit Bit
- Bluetooth Logger
- Personal Computer
- BodyMedia SenseWear Pro II armband
- Looxie
- ReadiBand – sleep tracking from your wrist
- Equivital
- WearComp1
Overview RoadMap

- Existing Devices
- Life Logging Data
- Issues
- Use of Data
- Future Usage Framework
- Conclusion
Overview

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Existing Devices Categories

- Life Logging
  - Wearable
    - Cameras
    - Entertaining
    - Biometric
    - Personal Computer
Existing Devices

- **Wearable Cameras**: SenseCam, Video glass, Looxcie, Go-Pro
  - Memory Enhancement
  - Life Style Detection and Health Management

- **Biometric Devices**: HR-monitor, ReadiBand, Bodymedia – sleep tracking from your wrist
  - galvanic skin response (GSR) and skin temperature (ST), physiological responses such as changes in heart rate or increased sweat production, sympathetic nervous activity

- **Amateur Fitness Devices**: Fit-Bit, Nike+Pod
  - Record fitness data, normally small and comfortable to wear

- **Other Wearable Devices**: Logger, GPS checking device,
  - GPS

- **Unwearable devices**: Personal Computers, CCTV system
Overview

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## Data Types

<table>
<thead>
<tr>
<th></th>
<th>Pictures</th>
<th>Location</th>
<th>Bluetooth</th>
<th>Noise</th>
<th>Movement</th>
<th>Heart Rate</th>
<th>Email/Web page</th>
<th>SMS</th>
<th>Wi-Fi/3G</th>
<th>User Feeling</th>
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<tbody>
<tr>
<td>SenseCam</td>
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<td>✔</td>
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* User survey, result. Per 23
## Technical Comparison

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<tr>
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<th>Data Sharing</th>
<th>Recording Functionality</th>
<th>Intended Usage Time</th>
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<tbody>
<tr>
<td>SenseCam</td>
<td>manually</td>
<td>Frequently (every 30 secs)</td>
<td>18 hours/day</td>
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<tr>
<td>Looxcie</td>
<td>manually</td>
<td>anytime</td>
<td>User-dependent</td>
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<tr>
<td>HMA-P</td>
<td>automatically</td>
<td>Every 5 Mins/less</td>
<td>18 hours/day</td>
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<td>HR Monitor</td>
<td>manually</td>
<td>anytime</td>
<td>Workout</td>
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<tr>
<td>PC</td>
<td>automatically</td>
<td>anytime</td>
<td>PC-On time</td>
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<tr>
<td>Eye-tracker</td>
<td>manually</td>
<td>anytime</td>
<td>User-dependent</td>
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<tr>
<td>Shimmer</td>
<td>manually</td>
<td>anytime</td>
<td>User-dependent</td>
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<tr>
<td>Logger</td>
<td>Automatically/Bluetooth Syn</td>
<td>anytime</td>
<td>User-dependent</td>
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<tr>
<td>ReadiBand</td>
<td>manually</td>
<td>Sleep anytime</td>
<td>Sleep time</td>
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Issues

- Privacy/Security
  - Personal Computer for recording.
  - Strictly obey privacy protection contract
  - No external intervention

- Storage
  - SenseCam pictures size 30K to 300K, at least 10 times increase
  - See [MMM’12 paper on how to store lifelong data/pictures (2012)]

- Application
  - Multidisciplinary cooperation for human healthy, Entertainment
  - Big challenges for computer scientists to record, store, organize and use data. cold start etc. Step by step progressing

→ We have to carefully examine how we interact with private sensor data
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What is next? Big challenges...

- Cheapest/Portable Way to Capture LifeLogging
- Realtime lifelog of Pictures/GPS/Bluetooth/Activity
- Individual Narrative Diary Generation
- Display personal logging data in a more readable way.
- Data Storage: Public Management Platform, Cloud Storage, Personal Computer
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- In this presentation, we talk about how we gather data for personal lifeLogging, and compare the different types of data gathering devices.

- Besides, we also talk about what we can do in future, issues we should concern in gathering, usage of different types of data.

- Recommendation:
  - Your requirement
  - Complete log, Phone+wr+complus or wear video
References


Questions?