

# Automatic Recognition of Context and Stress to Support Knowledge Workers

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## Problem

### Stressed worker

- Knowledge workers get overwhelmed by information, work under high demands and often have a fragmented way of working due to interruptions.
- Consequence: Well-being at work can be declined, which may finally result in burn-out.

### Approach

- Computer as means to address well-being at work.
- Much information about the user's context or state can be captured.
- The computer can provide feedback and support that is optimally adapted to the current situation and state of the user.

## Goal

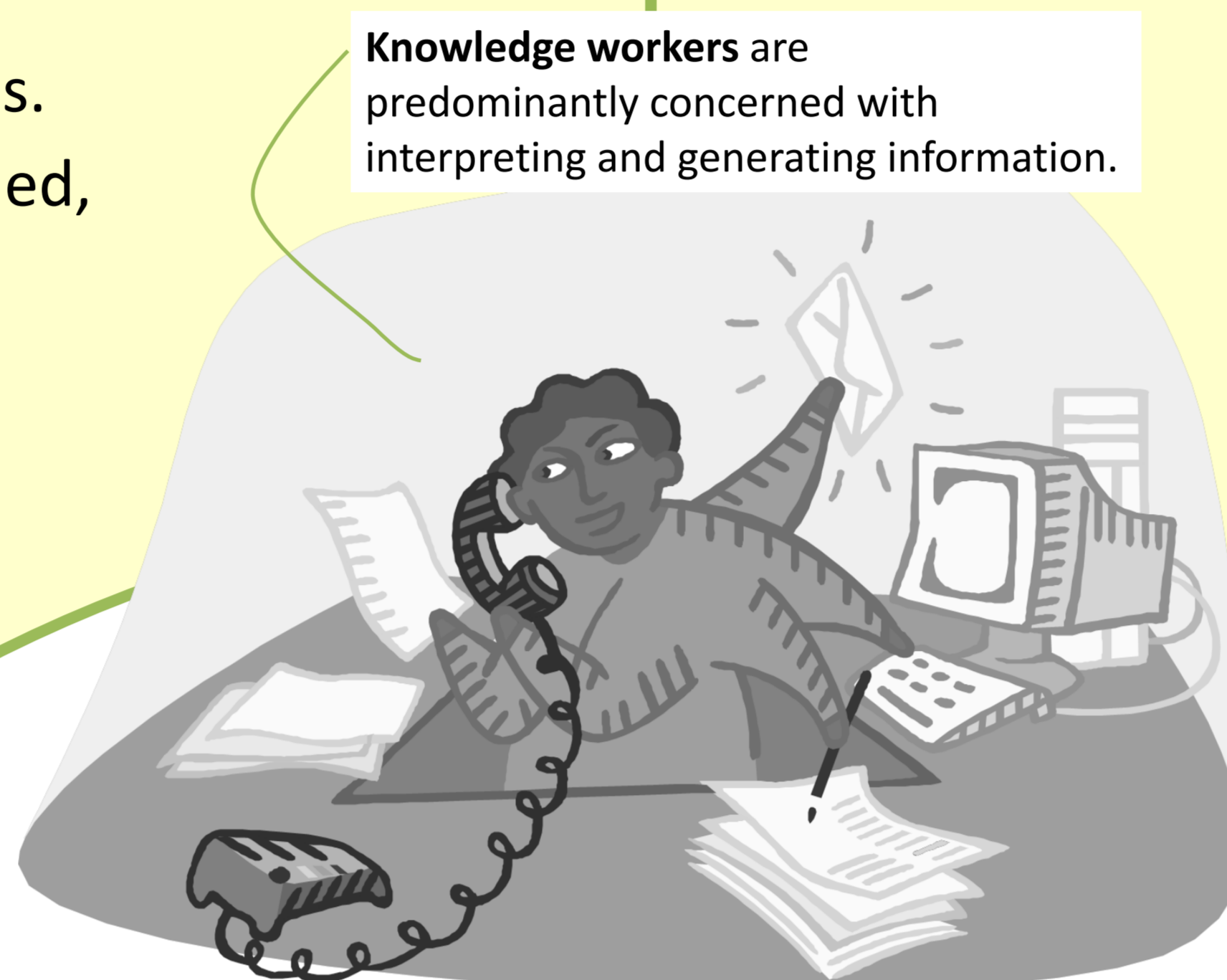
### Happy worker

- Feeling in control, having energy, feeling good about oneself, getting everything done, better coping in stressful situations...

### How?

- Self-coaching/ self-management is supported.
- Tool helps to understand activity patterns and their health consequences in a longitudinal context.
- Tool is an instrument for behavioral change.

Knowledge workers are predominantly concerned with interpreting and generating information.

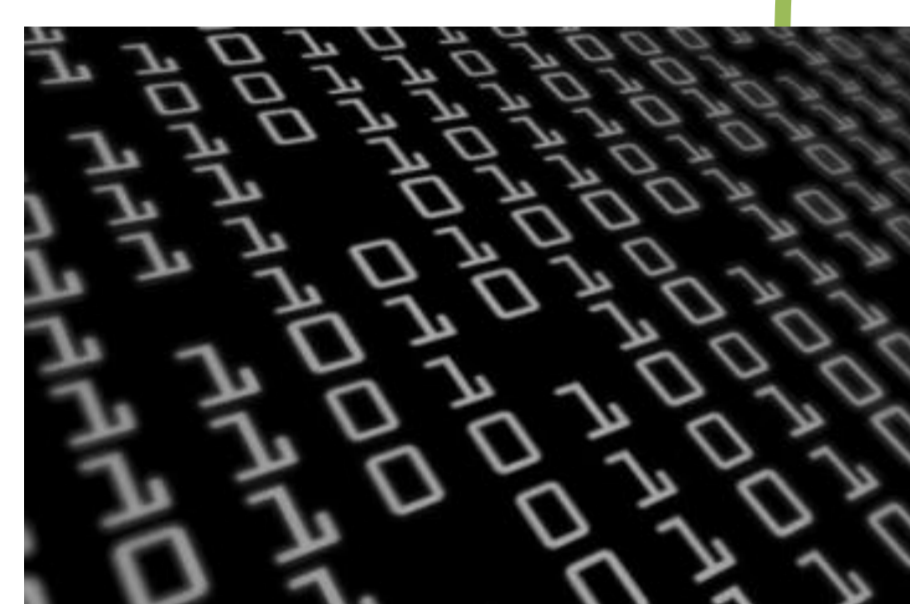


## Requirements

- Ease of use and requiring little or no attention from the user.
  - Capturing information from a network of relatively cheap and simple sensors.
- Personalized privacy that is understandable for the user.
  - Just-in-time process and reason about the captured parameters as well as to provide feedback in real-time.
- Machine learning algorithms adapting to the specific user and personalization of the tool.

### 1) Data from sensors

- Computer logging
- Camera, Kinect
- Body sensors, etc.

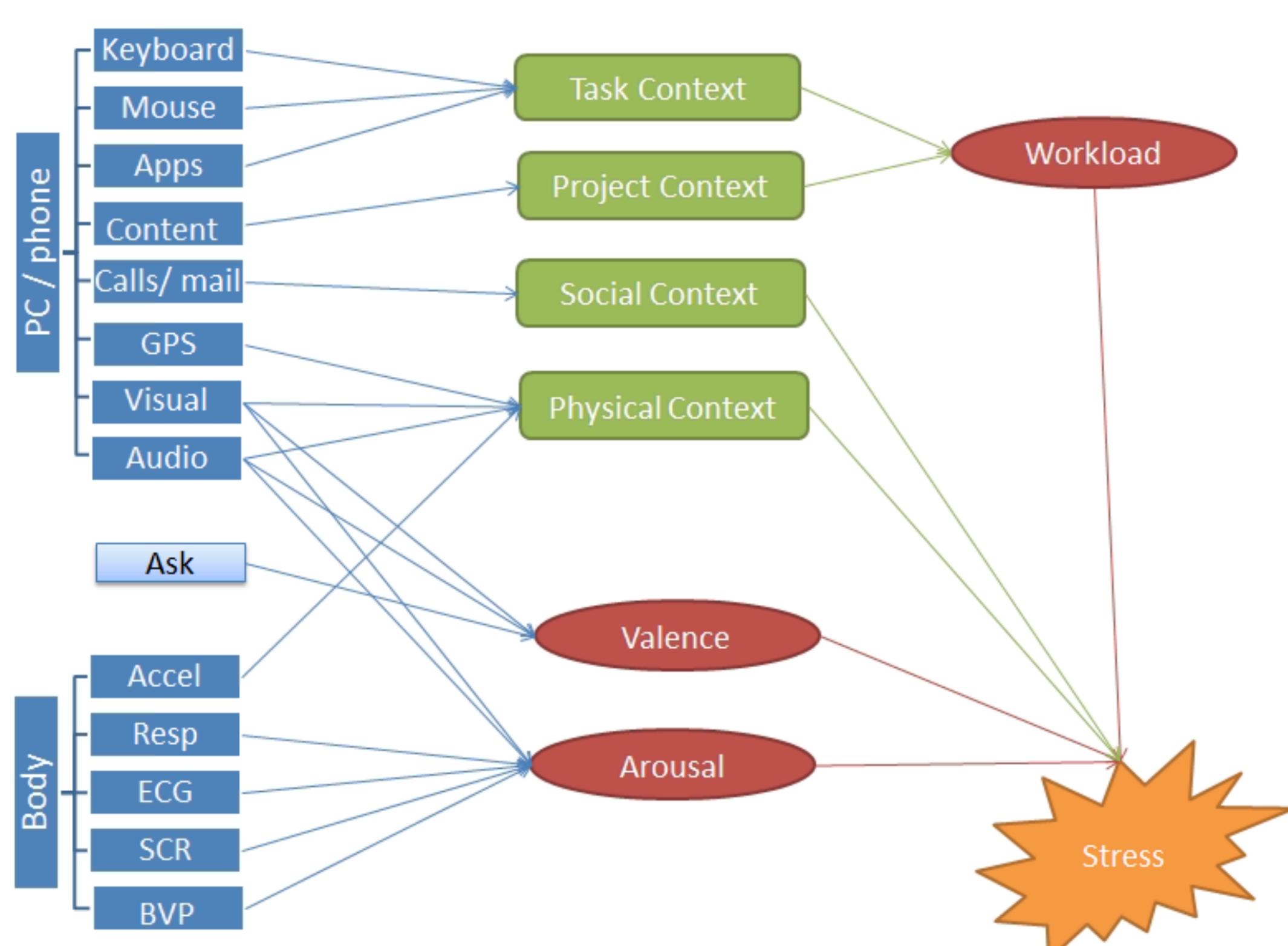


### 4) User interaction

- On computer
- Mobile phone
- Ambient, etc.



## 2) Recognizing Context & User State



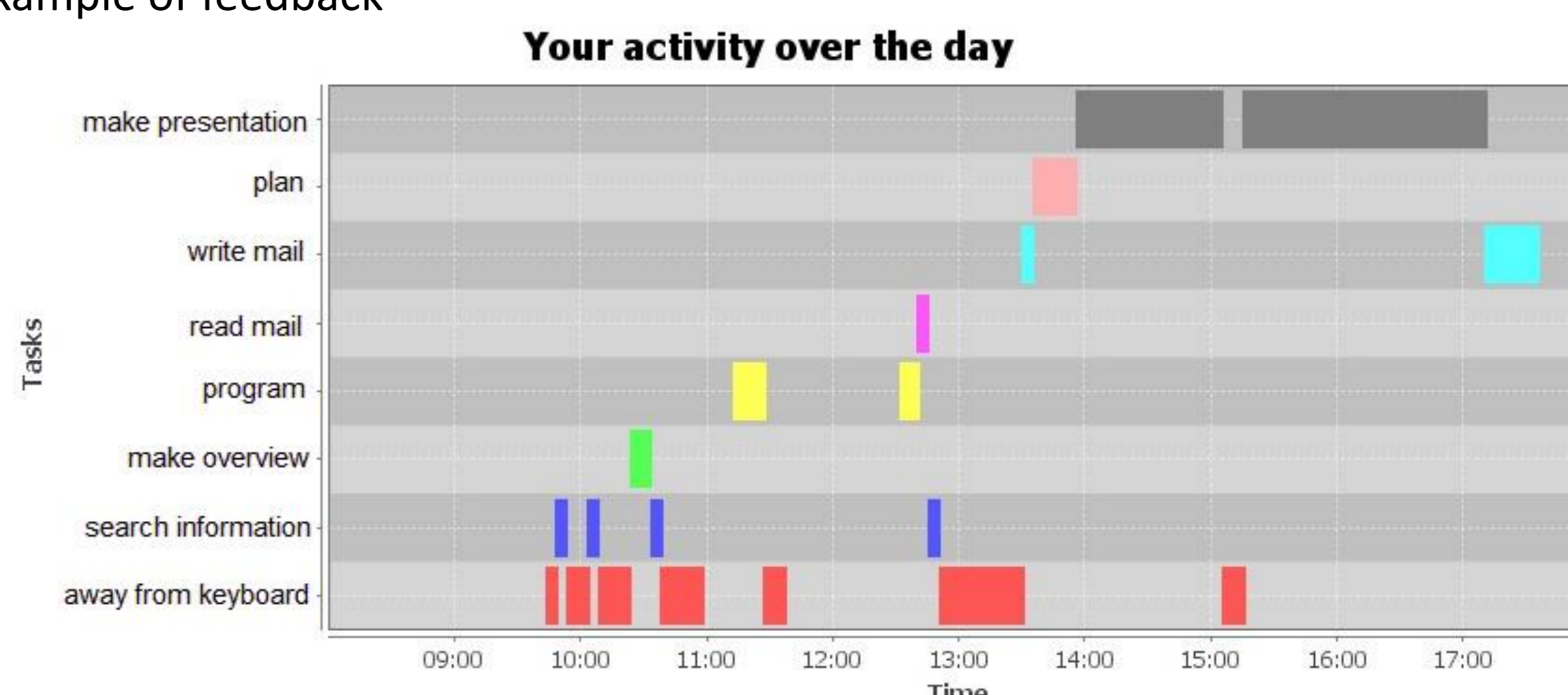
Machine learning will be used to infer different aspects of context and user state from various sensors.

## 3) Providing Feedback & Support

Different kinds of feedback will be tested:

Mirror	E.g. show overview of tasks performed.
Judge	E.g. too much switching in the morning.
Help	E.g. tip: try to focus on one task.
Intervene	E.g. irrelevant e-mails will be blocked.

Example of feedback



Model of user, context & state.