



HCI Exercise

Summer Term 2024

Choose one of the suggested projects

You can choose one from the Lab or take your own idea.



Machine Learning
Data Analytics



Interface: **Visual Attention**

An interface to collect behavioral data during visual explorations tasks



Mobile App: **Happy Green**

A mobile app to support watering and taking care of your own plants at home

T³

Web Interface: **The Tensor Tournament**

A web interface to advertise and organize the machine learning competition T³



Mobile App: **Breast Self- Examination**

A mobile application to support you in breast cancer prevention



Parkinson Gait

A dashboard to visualize gait data from PD patients



Baby Track

An App to track newborn's feeding and sleeping hours

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Your own project

Do you have a start-up or project idea you want to work on?

Interface: Visual Attention Data Collection

An interface to collect behavioral data during visual explorations tasks

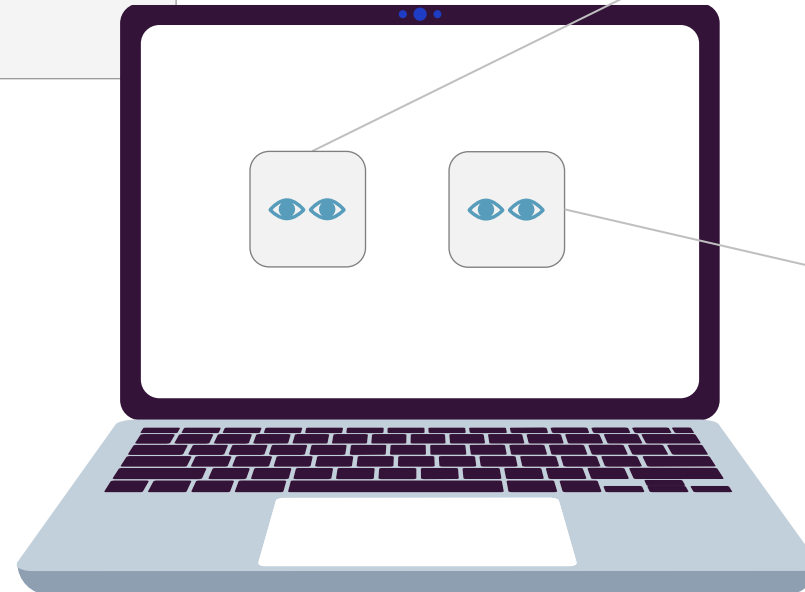


Machine Learning
Data Analytics



Background

We want to understand how humans allocate visual attention in complex environments, to equip machines with the same ability. To this end we need to collect behavioural data of humans performing visual explorations for different tasks.



Visual Attention Data Collection

Behavioural multimodal data collection. Subject can perform mouse-contingent image explorations, then input a caption (text) describing that image.

Behavioral Data Visualization

Facilitate visual display of recorded data

Mobile App: Happy Green

A mobile app to support watering and taking care of your own plants at home

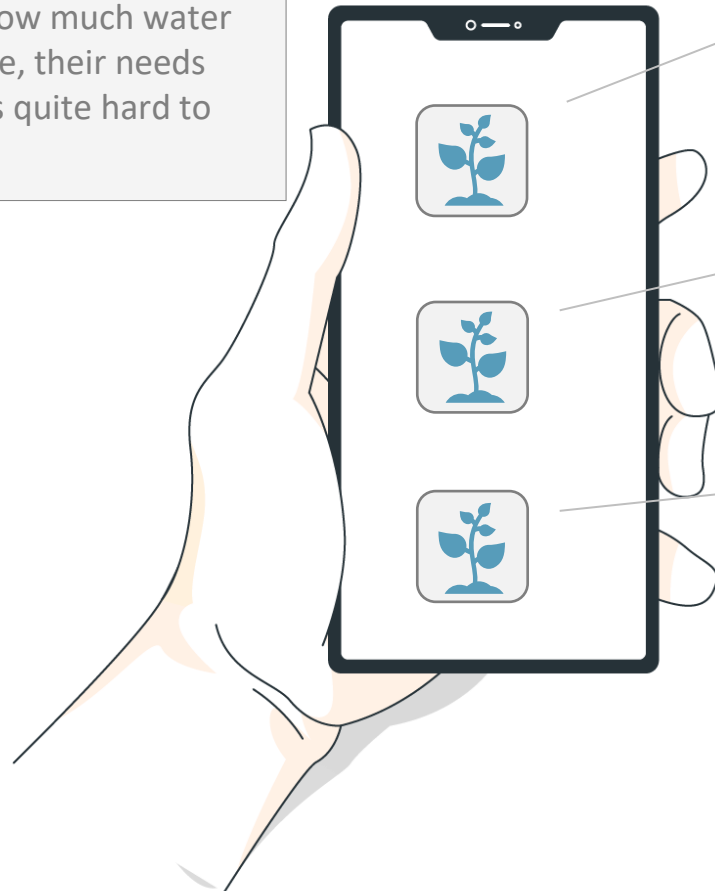


Machine Learning
Data Analytics



Background

I always forget to water my plant and most of the time honest don't even know, how much water and care they need. Furthermore, their needs change over the seasons and it's quite hard to keep track.



Dynamic Reminder

A mobile app or a stationary screen (on a static display like a "Raspberry App") that informs me in the morning what I need to do to keep my plants happy (water, fertilise, change place) depending on the season.

Personalization

Integration of photos of my plants, share them and my successes (& setbacks) with friends, and give my plants nicknames.

Sharing

Integrate an exchange platform to share plant offshoots with friends.

Web Interface: The Tensor Tournament

A web interface to advertise and organize the machine learning competition T³

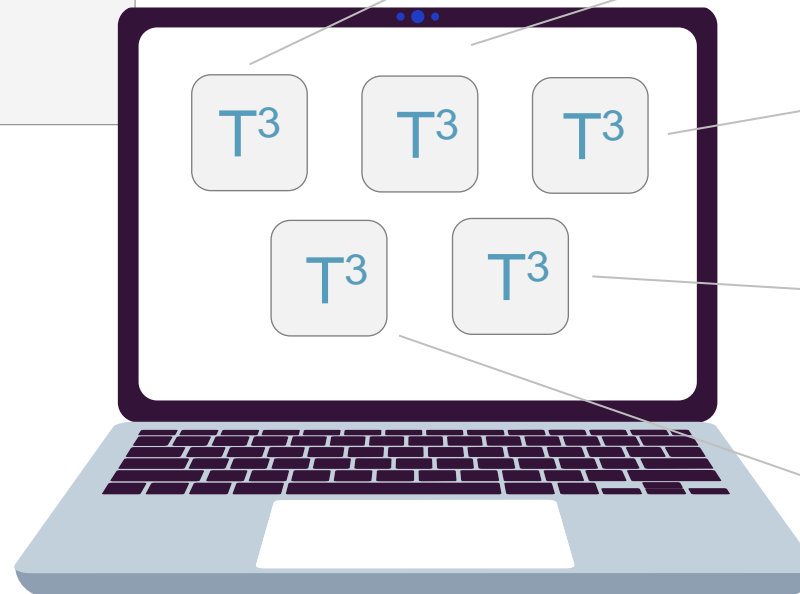


Machine Learning
Data Analytics



Background

The Machine Learning and Data Analytics Lab plans on arranging machine learning competitions for students each year under the "The Tensor Tournament" brand. These competitions are organized on a website that allows for team registration, and during the main competition allows teams to upload their solutions and view a live leaderboard.



Advertisement

Homepage that motivates students to participate

Registration

A registration page that allows users to register for the competition and build teams.

Login

A login page that allows registered users to login for the competition

Submission

A submission page that allows teams to upload solutions and receive feedback on their performance during the competition.

Leaderboard

A leaderboard page that ranks teams during the competition

Mobile App: Breast self-examination

A mobile application to promote breast self-examination and preventive behaviour

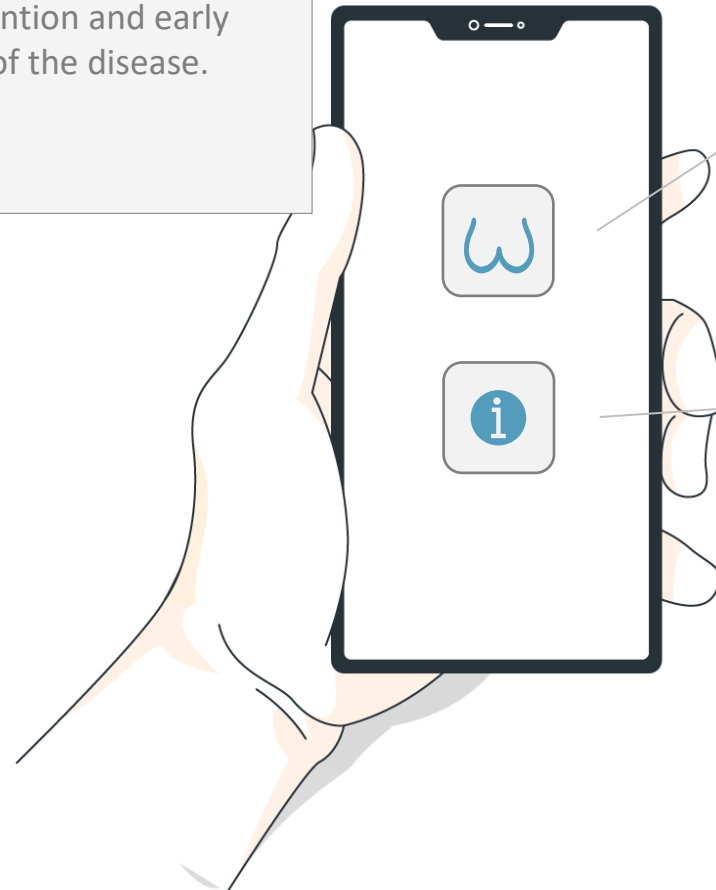


Machine Learning
Data Analytics



Background

1 in 8 women in Germany will be diagnosed with breast cancer in her life. Prevention and early detection can reduce the risk of the disease.



Breast self-examination

Guide the user interactively through the self-examination with clear instructions and information.

Educational content

Provide engaging information content aiming at increasing health literacy and promoting healthy behaviour.

App: Baby Track

An App Interface That Provides an Overview of Feeding Times for Newborns

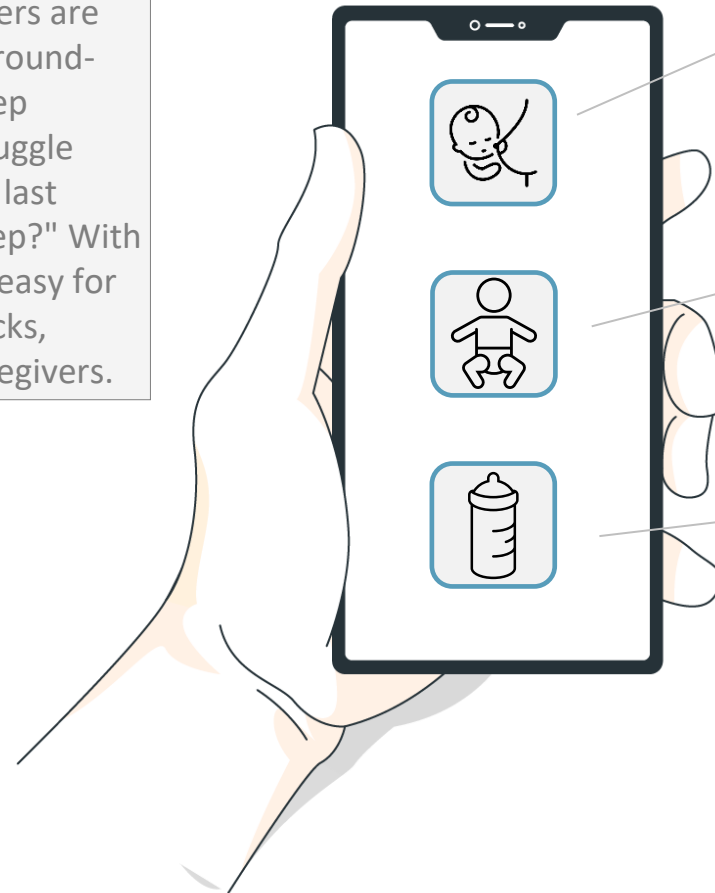


Machine Learning
Data Analytics



Background

In the early days of parenthood, caregivers are often overwhelmed by the demands of round-the-clock feeding and unpredictable sleep patterns. It's common for parents to struggle with questions like: "When did my baby last eat?" or "Is my baby getting enough sleep?" With so much to remember and monitor, it's easy for vital information to slip through the cracks, leading to stress and uncertainty for caregivers.



Tracking

Tracking the Sleeping and feeding of the newborn. Additional bio-parameters like weight, temperature..

Personalization

Reminder for Feeding, sleeping times.

Data Overview

Showcase the data over a chosen period, giving an overview of the child's eating and sleeping patterns.

Web Interface: Parkinson Gait

A web interface to visualize and manage gait data from PD patients

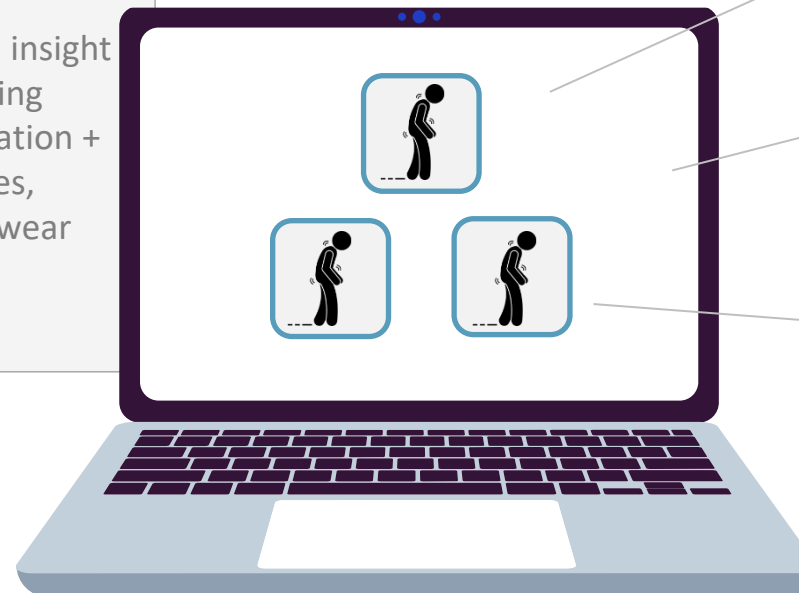


Machine Learning
Data Analytics



Background

Parkinson's disease affects the patient's life quality, causing movement disorders and even depression. The disease severity and some of its motor symptoms reflect in the gait. By monitoring the patient's gait we can gain insight into their symptom fluctuations, supporting physicians in adjusting treatment (medication + physiotherapy) accordingly. Within studies, patients are quipped with IMUs and can wear them in free-living conditions allowing longitudinal data collection.



Login

Homepage easy to use for physicians to register and login.
Access to multiple studies.

Patient overview

An intuitive overview of patients, their medical data (age, disease diagnosis period, main symptoms) + days where they did gait measurements.

Gait-Data visualization

A customizable overview of the various gait parameters of individual patients and across patients.

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Student Research Competition (SRC)

Largest HCI Conference in Europe



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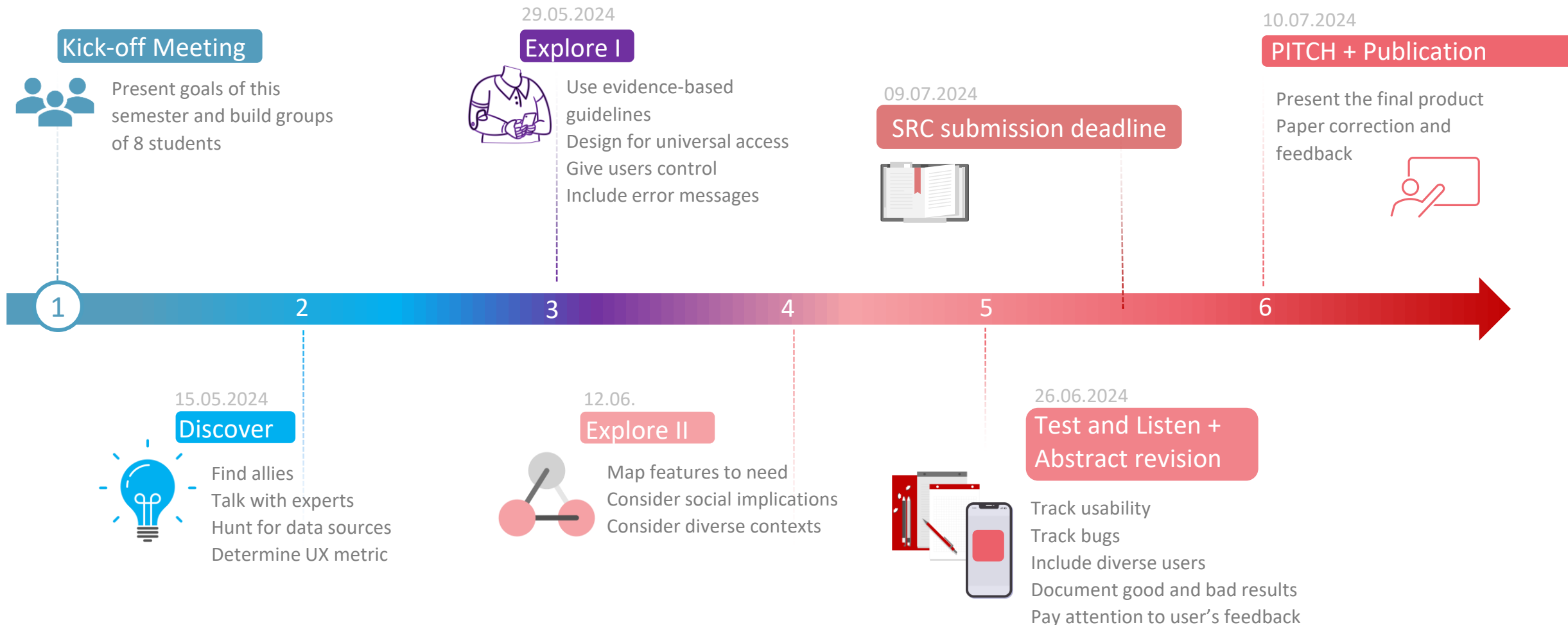


- Submission deadline: July 9th, 2024
- Notification: July 16th, 2024
- Publication-ready deadline: July 30th, 2024



<https://muc2024.mensch-und-computer.de/de/call-for-papers/hci/student-research-competition>

You will work on one project idea over the course of the semester



Tasks

Please prepare the following for the next session



Build groups of approx. 8 people (via StudOn)



Choose one of the projects (or your own idea)



Answer: which main obstacle/problem are you solving with your application



Prepare a short One-pager (proposal) to present your group and the project + upload it on StudOn