Hardware

- BCI
- Eye tracker
- Notebook
- Mouse and keyboard (if we want a comparison between mouse and eye tracker)

Test Environment

- Target group:
    - Participants/Students in the age of 20-30 years
    - It is expected that novice and experienced eye tracking users participate at the study.
    - Duration: around 45 minutes?
- Calibration of the eye tracker
- Read the description and start the tasks
- Questionnaires (post-tasks and demographic information)

Eye Tracking Analysis Tool

- Heatmaps
    - How long or how often are certain areas of the web page viewed?
- Opacity Maps
    - Almost the negative image of a heatmap
    - Which areas were not considered? Only the bright areas received the attention of the users.
- Gazeplots
    - Visualization of the complete view
    - The numbering of the circles indicates the order in which the users viewed a surface. The size of the circles gives information about the duration of the observation.
- AOI (Areas of Interest)

Main questions

Search Results

- Do people read the search results from top to bottom or are results skipped?
- On how many results does a person look before he/she choose one?
- How long does it take to select a search result?
- What information in the search results are considered as useful?

General structure of the webpages

- Which elements of the website are perceived by the users and which ones will be completely skipped?
- What are the main elements of the web application?
- Which texts are interesting and which are not important?
- How long and intensive are elements of a user interface (menu, navigation) viewed?
- Does the page layout help to find the information you need quickly without a complex search?

Star Rating

- Does the participant look on the given video rating before he/she rates it?

- How long does he/she look on the given rating?
- Has the given rating an effect on the participant's decision?

Emotional Rating

- Does the selected emotion of the participant agrees with the actual emotion of the BCI or does he/she misjudge his/herself? -> Is it possible to display the actual BCI emotion on the webpage???

Tasks

1. Please search the video titled "XXX". (measure the time -> Intuitive? Fast?)
2. Please select "play" and watch the video until the end.
3. Do you like this video? Please rate it.
4. What kind of feeling do you have after watching the video? Please select your emotion.
5. Please increase the volume to 100%.
6. Please search for any video that you like and repeat the steps 2 to 4. If the video is too loud, you can reduce the volume again.

Choice of the Study Technique

- Paper-based Post-Task-Questionnaire
- Demographic questionnaire
- Recording of the screen
- Data logging: A logfile for each participant -> Integrate calibration results in the logfile to determine how many calibration iterations were necessary to achieve a valid calibration result
- Live observation
- Thinking Aloud

Evaluation

- Basic chapter (aim of the project, basics of eye tracking and BCI)
- Describe target group
- Test environment (room, hardware, software, duration)
- Choice of Study Techniques; eye tracking analysis tool
- Hypothesis
- Analysis of the current data
- Conclusion