SensoGraph: Simplifying Biosensor Data Collection

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and Analysis

Abstract

UX Research has been based on qualitative feedback from users about their reaction to test interfaces through methods such as Questionnaires, Contextual Interviews and User Tests. It would be immesnly more impactful if the responses in their feedback could be measured on a physiological level. A number of biofeedback approaches are increasingly making the transition into UX research, enabling researchers to shed light on the factors that triggers cognitive reactions.

Objective

The UX Lab at Goldsmiths, University of London is equipped with many biosensors which can collect useful datd during UX tests, but there's a lack of a tool that can demystify what the collected data means. The aim of this study is to understand biosensors and how the data collected from them in the lab can be leveraged to understand. The objective of this study is to conceptualize an interface for the analysis of biosensor feedback such as EEG(brain activity), ECG(heart rate), and EDA (electrodermal activity).

Diagram / Designs



Methodology

Secondary Research

I looked for studies that used MATLAB and specifically EEGLAB to fast track some of the steps in my data pre-processing and analysis.

To understand the best way to create this new interface,

multiple methods were used. Some students were recruited from the MSc UX Engineering program following a **pilot recruitment survey** for in-depth interviews. Based on the data collected, I created **Personas** of the standard user for this application.

User Interview

During the interviews, information was collected regarding their familiarity with biosensors and data anlaysis with them. We also discussed their projects and the kind of tests that they need to conduct on their users

Mapping the User Journey

A user journey map was made to understand the pain points and opportunities from the planning step of the study till the day of the tests.

Tests and Findings

The Low Fidelity Prototype was tested on students of Goldsmiths, University of London and a post test interview was taken from all participants. Going forward, I would also like to include people from the staff for user testing as well.

Observations:

- People were able to find the items that they were told to look for
- There were some minor changes suggested by some of the users, such as changes in the placement of certain menu items, etc.