

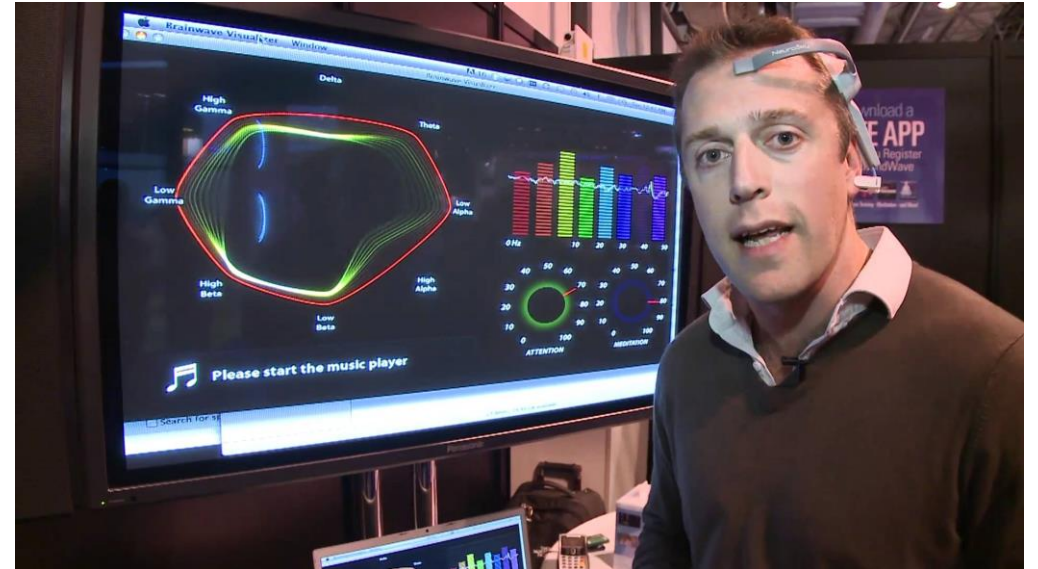
Mobile Computing

Project: No, that's not what I mean

-Recognition of Affective Prosody

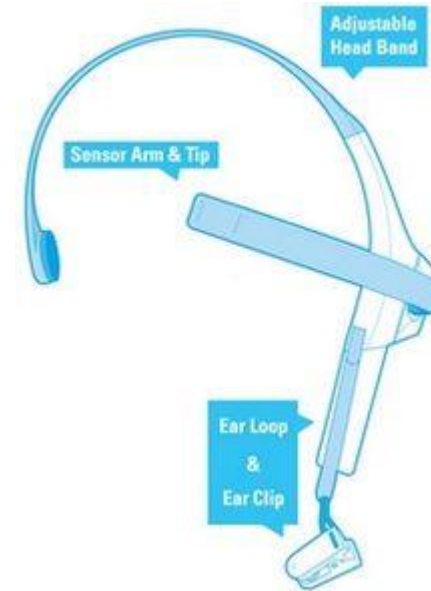
Skills Acquired

- Machine Learning
- Working with Sensors (IoT)
- User Interface
- User Centered Design (HCI)
- Mobile App Development
- Brain Computer Interface (BCI) R&D



Resources

- 1 [Neurosky](#) device
- Android Device for mobile app
- Data Collection Agreement
- Assigned Reading
 - [About Brain Response Channels](#)
 - Semantic Congruity and Expectancy ([1](#), [2](#))



Task Umbrellas

- These will be the main task umbrellas under which your team will come up with sub-tasks for each member
 1. N300 module detection across users
 2. ML algorithm – model selection, training and testing
 3. Scientific Design of Experiments for Detecting Semantic Congruity
 4. User interface for detecting semantic incongruity and feedback
 5. Bonus: User Interface feedback survey from 10 users.

Tasks: N300 module detection

- Sample sub-task (Assigned to : Person A)

Tasks: ML algorithm

- Sample sub-task (Assigned to : Person A)

Tasks: Design of Experiments

- Sample sub-task (Assigned to : Person A)

Tasks: User interface

- Sample sub-task (Assigned to : Person A)

Bonus: User Interface feedback survey

- Sample sub-task (Assigned to : Person A)

Deliverables

- Mobile/ Desktop app
- Project Report
- User Acceptance Testing Survey Results (4 from team members and 4 others)

Testing Rubric

- Will be announced in class
- Will be discussed in team meetings

Project Summary

- Isolating processes within the brain that are specific to human behavior is a key goal for social neuroscience. The current research was an attempt to test whether recent findings of enhanced negative ERPs in response to unexpected human gaze are unique to eye gaze stimuli by comparing the effects of gaze cues with the effects of an arrow cue. An enhanced negative ERP (N300) will be recorded in response to negative stimulations. The findings will be interpreted as reflecting a domain general mechanism for detecting unexpected events specially in terms of syntax and semantics ([Cite](#))
- We will first test if we can detect this response and iteratively design experiments to make this detection better.
- The desktop or mobile app will be used to collect data and finally to give user feedback when such response was detected.