

Unveiling Facial Anxiety in Social Videoconferencing: Exploring the Test for Zoom Fatigue and Its Underlying Causes

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Abstract

In the wake of the COVID-19 pandemic, social video conferencing has emerged as a prominent means of communication. However, users may experience feelings of worry and exhaustion as a result of this sort of connection, which can have an impact on both their well-being and their performance. The purpose of this dissertation is to investigate the factors that lead to face anxiety and weariness during social video conferencing, as well as the effects these factors have on participants, and to make suggestions for how these problems might be alleviated. A literature review, user research, eyetracking, and electroencephalogram and electrocardiograph testing make up the three primary components of the dissertation.

This review of the relevant literature gives an overview of the various hypotheses and research that have been conducted on facial anxiety and weariness in video conferencing, with a particular emphasis on the nonverbal mechanisms that contribute to these phenomena. In order to investigate the neurological and cognitive components of facial anxiety and weariness in social video conferencing, the user research makes use of a controlled experimental design with electroencephalogram (EEG) and electrocardiograph (ECG) testing. And a prospective product design suggests a new function for social videoconferencing, that promises to alleviate facial anxiety and weariness by allowing users to customize their self-view and modify the direction in which they are looking. This feature would allow users to adjust their gaze direction.

This dissertation makes a contribution to the developing field of study on social video conferencing by delivering fresh perspectives into the psychological and physiological effects of facial anxiety and weariness on users.

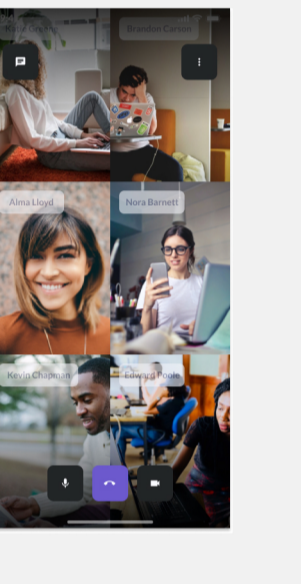
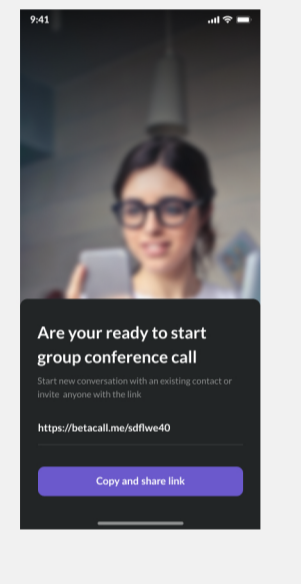
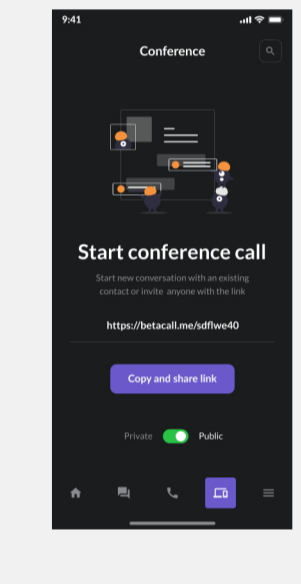
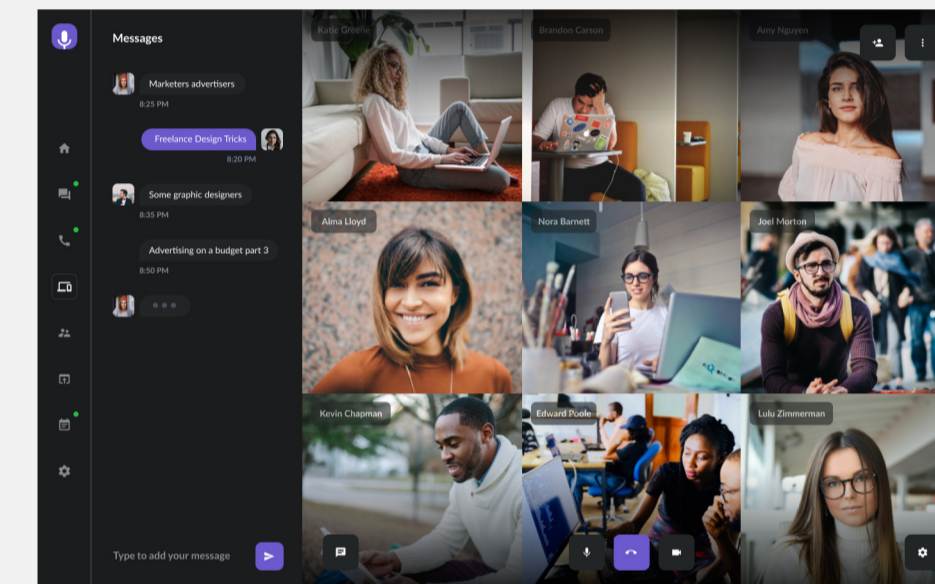
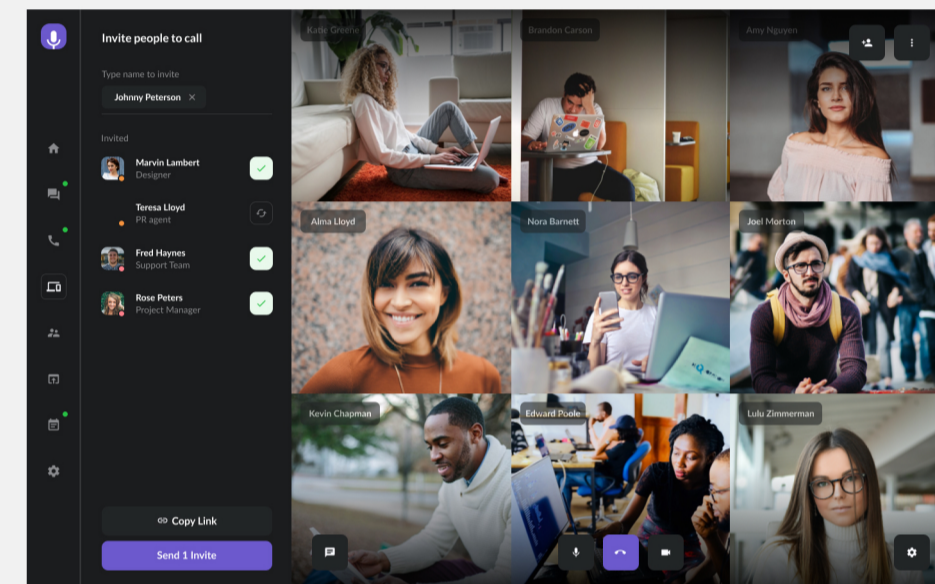
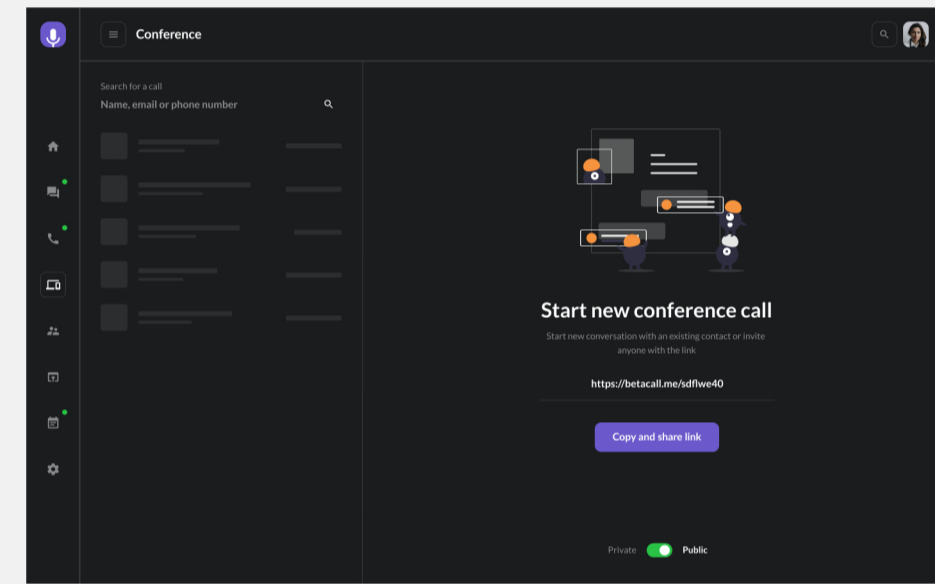
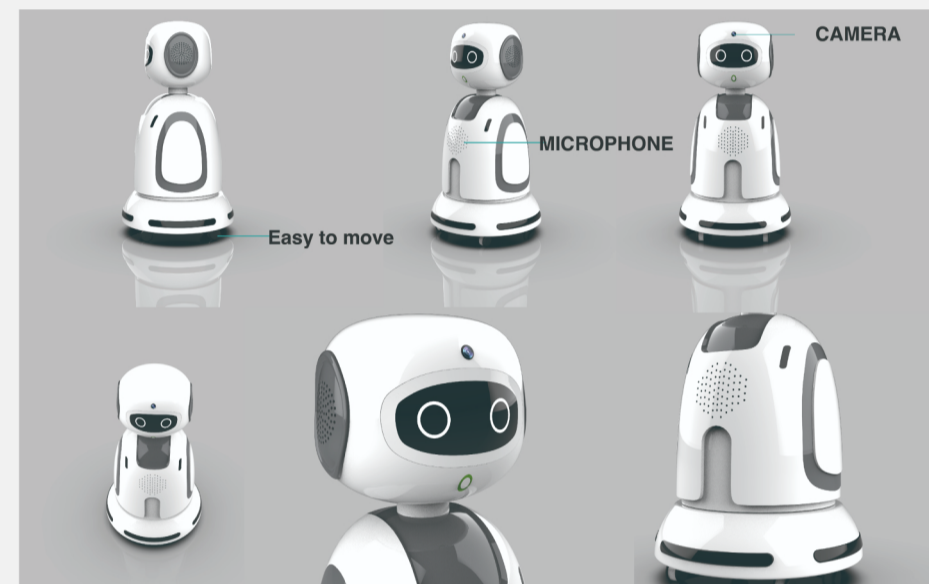
Introduction & Background

Videoconferencing fatigue is often called Zoom Fatigue. Zoom has become the most widely used platform for this function. The term "Zoom Fatigue" became popular among journalists to describe the collective tiredness caused by participating in videoconferences, which had become more common during the COVID-19 pandemic (Wiederhold, 2020). In the year 2020, there was a substantial rise in the number of people using videoconferencing, primarily due to the fact that videoconferencing is very similar to face-to-face conversation. Today, hundreds of millions of individuals make use of various tools, including Zoom, Microsoft Teams, and Cisco Webex (René Riedl, 2022).

This is because social videoconferencing enables people to maintain social connections and interactions. However, while social videoconferencing may bring some benefits, such as a reduction in feelings of isolation, an improvement in well-being, and support for mental health, it may also bring some negatives, such as leading users to experience feelings of anxiety, tension, and weariness. Despite the fact that these video conferencing systems have been around for a while, "video conferencing weariness" has just recently received significant media attention.

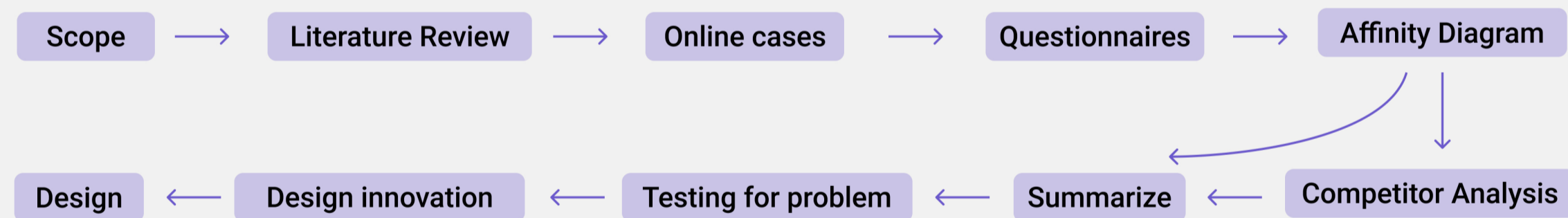
The exposure to and appraisal of one's face looks and expressions by other participants in social videoconferencing can be a source of anxiety for those participating in these interactions. The term "facial anxiety" is a psychological term that refers to the dread or discomfort of being seen or judged by other people based on one's facial characteristics or expressions. Facial anxiety is a relatively new field of research.

Diagram/Design



Wireless Bluetooth connection and easy to use and hold

Study Methodology



One of the factors that contributes to Zoom fatigue is facial anxiety, which is the anxiety caused by seeing one's own face on the screen during virtual meetings. Facial anxiety can arise from various sources, such as self-presentation concerns, self-consciousness, dissatisfaction with one's appearance, or social comparison with others. Facial anxiety can affect both men and women, but research suggests that women may experience higher levels of Zoom fatigue than men because women are more likely to dislike the appearance of their faces (Devon Frye, 2022). Moreover, *The Fatiguing Effects of Camera Use in Virtual Meetings: A Within-Person Field Experiment* was published by Kristen M. Shockley, Allison S. Gabriel, Daron Robertson, Christopher C. Rosen, Nitya Chawla, Mahira L. Ganster, and Maira E. Ezerins on 2021 that facial anxiety can interfere with the quality of communication and collaboration during virtual meetings, as it may reduce one's voice and engagement.

I mainly focused on how social video conferencing affects participants' brain activity and cognitive processes, resulting in face anxiety and probable weariness. Therefore, I took electroencephalogram (EEG) and Electrocardiograph (ECG) to test for Understanding Facial Anxiety in Social Video Conferencing research study plan.

Eligibility Individuals between the ages of 18 and 26 who are fluent in video conferencing technology and have participated in social video conferencing at least once a week for the preceding six months are eligible. Participants were chosen based on their previous experiences with social video conferencing as well as their self-reported degrees of facial anxiety. And to ensure robust data analysis, aim to recruit a varied sample of at least 10 people.

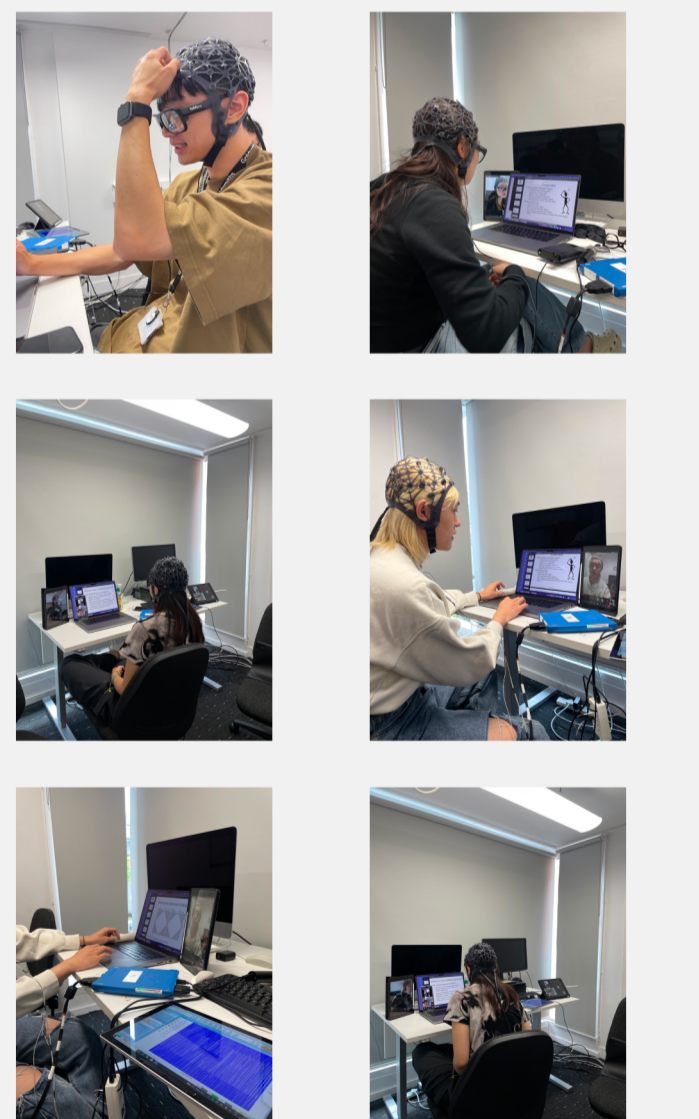
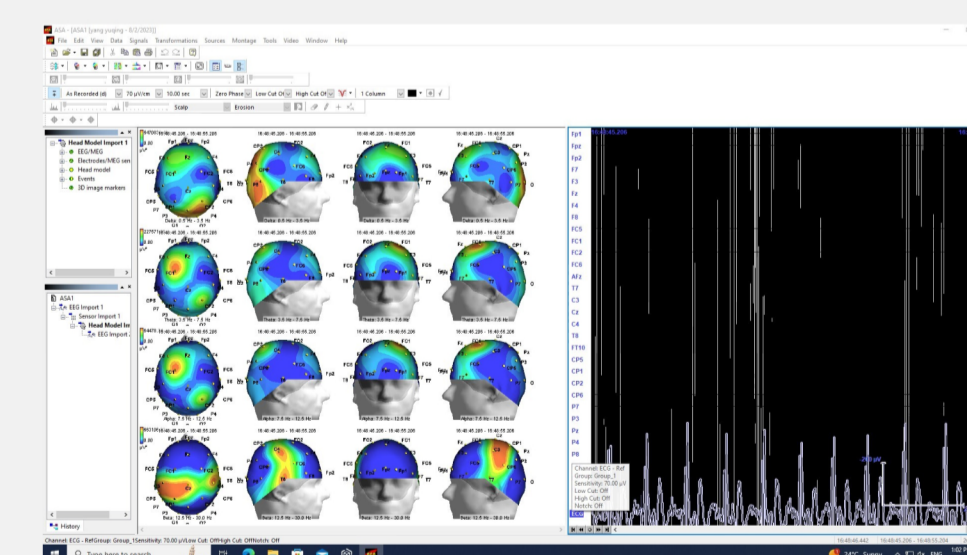
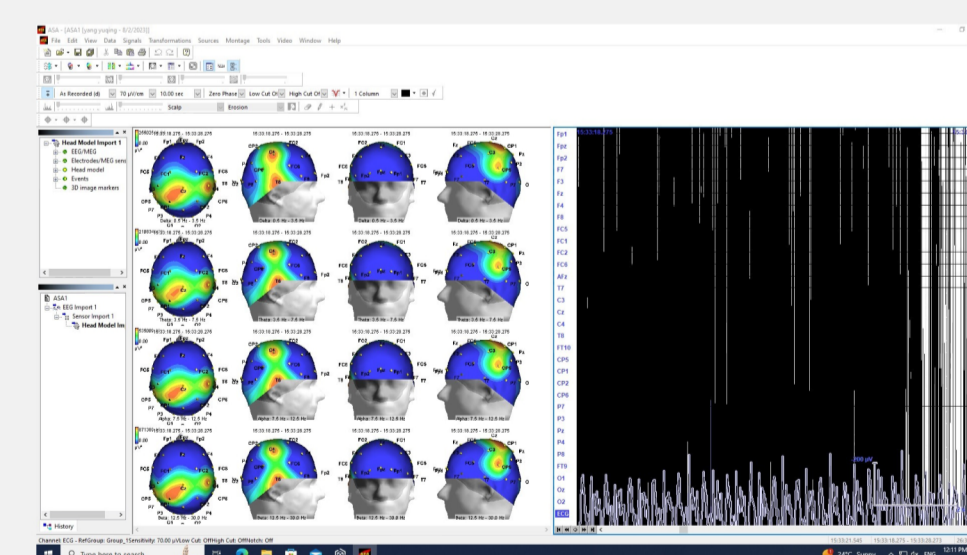
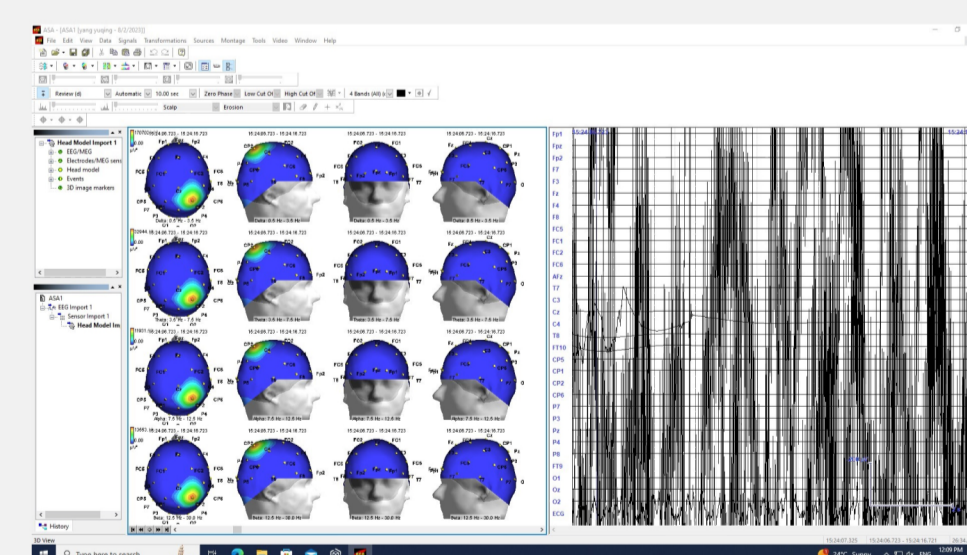
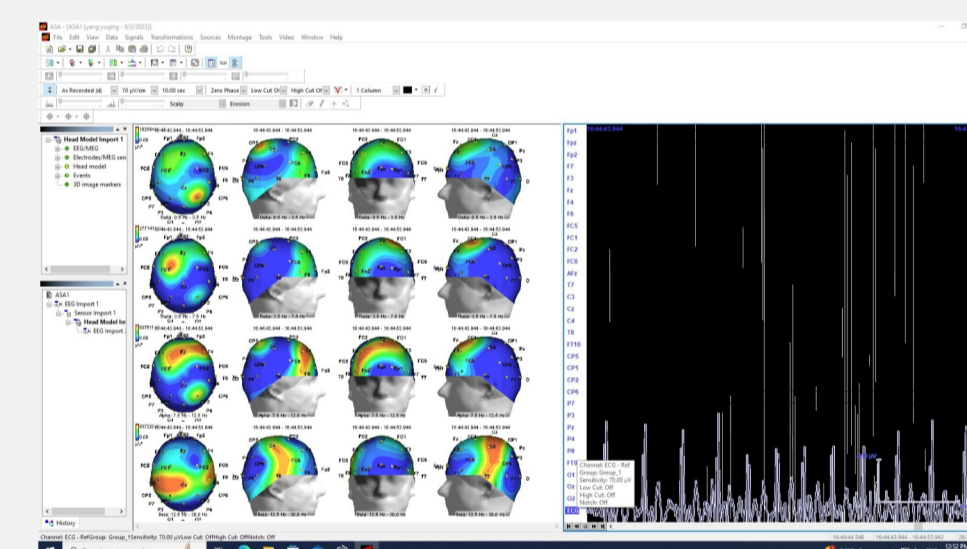
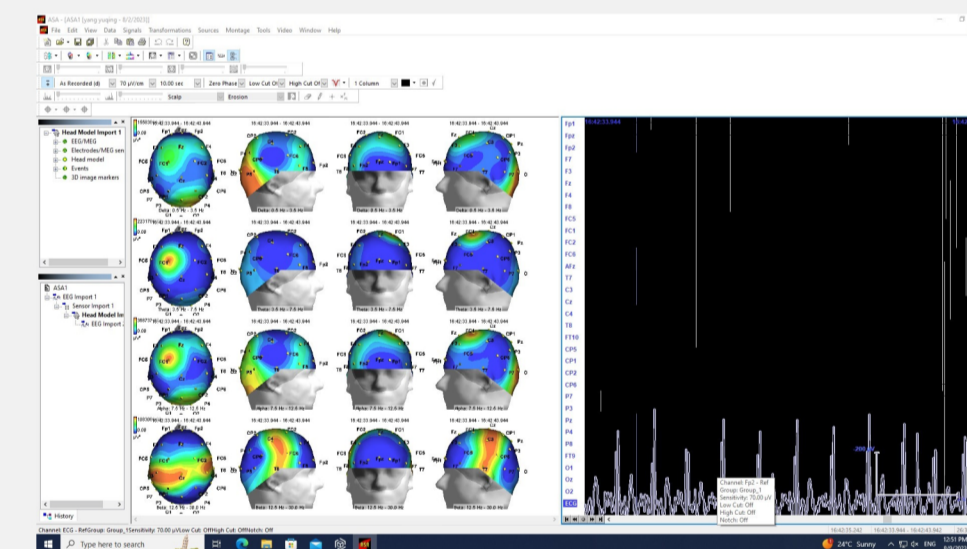
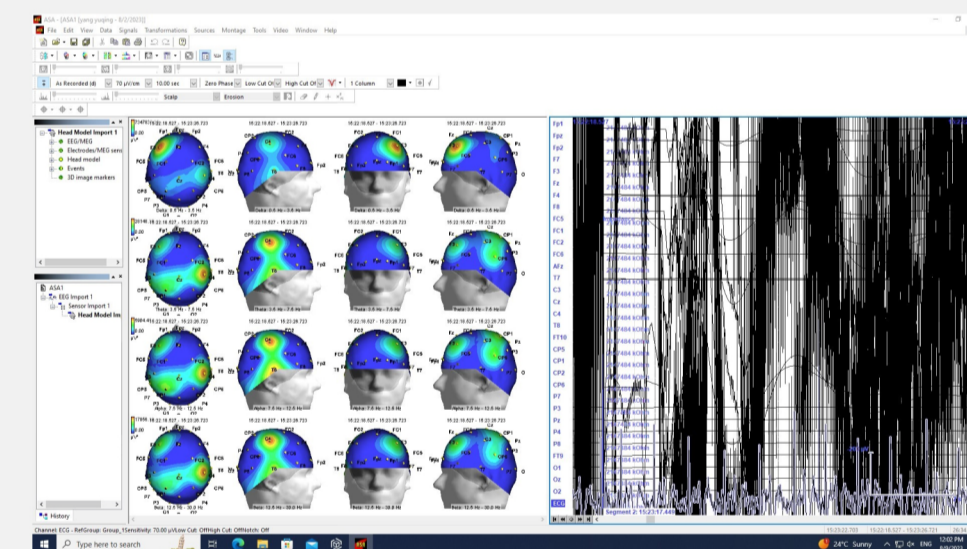
Research Results

According to the web search results, the part of the brain that controls the facial anxiety or emotion is mainly the amygdala, which is a small region located behind the right ear. The amygdala is involved in making judgments about ambiguous or intense emotions, and it has distinct neurons that can detect the intensity and ambiguity of facial expressions (Ralph Adolphs, Ueli Rutishauser (PhD '08), 2017). Amygdala is considered to be a key component of the brain's emotion network, and it may play a role in various psychological disorders, such as autism and anxiety.

Participants were selected based on their previous experience participating in social video conferences and their self-reported levels of facial anxiety. To ensure the accuracy of the data analysis, I recruited 10 different samples, 7 girls and 3 boys. All variables were controlled to be the same, the only variable being before and after well-dressed or good make-up.

Post-Test To assess participants' facial anxiety levels during virtual encounters, according to the test session, participants will complete the Multidimensional Fatigue Scale or a similar scale to determine their level of Zoom fatigue. In addition, after collecting and analyzing the EEG and ECG test data of the participants before and after well-dressed, the results of this research test can be drawn. **Girls are generally more anxious about their faces than boys, and better dressing will be to a certain extent, reduce facial anxiety and thus reduce Zoom fatigue.**

Testing & Evaluation



Conclusion & Future Work

This study shed insight on the multidimensional nature of facial anxiety and its dynamic relationship with self-presentation by a painstaking investigation of the participants' experiences, emotional responses, and self-perceptions during the Facial Anxiety Potential Test (FAPT).

In keeping with the findings of Rabintra Ratan, Dave B. Miller, and Jeremy N., gender and cultural differences were observable, with females expressing higher levels of worry and cultural backgrounds influencing the sensation of weariness brought on by video conferencing. This research endeavoured to make a contribution to the discussion that is now taking place on these inequities by recruiting a participant pool that was gender-diverse. In conclusion, the findings of this research magnify the delicate tapestry of face anxiety in virtual contacts, highlighting the convergence of psychological, technological, and physiological factors that form the experiences of individuals.

There will be a requirement in the future for more empirical study to assess the validity and applicability of the suggested framework and hypotheses. This will come about as a consequence of this. The following are some ideas that could be explored in further research: to enhance the size of the sample as well as the diversity of the participants by recruiting people who come from a variety of cultural backgrounds, ages, and occupations. In addition, it is important to make use of objective measurements of zoom fatigue, such as physiological indications like blood pressure or cortisol levels, as well as behavioural markers like facial expressions or speech patterns. Additionally, increase the number of experimental research that modify the important variables, such as the length of time spent videoconferencing or the type of videoconferencing done.