UNIVERSITÄT BIELEFELD

CITEC
Cognitive Interaction Technology

Master Thesis: Facial Expression Analysis in Stress Test Video Data collected in an Experimental Study.

Human-centered Artificial Intelligence (HCAI) Group

As a part of a bigger project, we have developed a scalable Digital Stress Test (DST) that can be performed with the smartphone. Using the DST, we aim to conduct stress studies remotely and collect a large database of videos capturing stress-related behavior. Based on these videos, we want to analyze the stress induction potential of DST compared to the state-of-the-art presence stress test.

The goal of this thesis is to analyze and compare stress-related facial expressions in videos using Machine Learning methods. Therefore, you will work with a dataset of videos with participants performing different stress experiments. You will analyze perceived, observed and physiological stress responses based on the obtained measures and use them for the video-based stress analysis. You will build a pipeline for preprocessing, feature extraction, and machine learning modeling and compare two different stress settings.
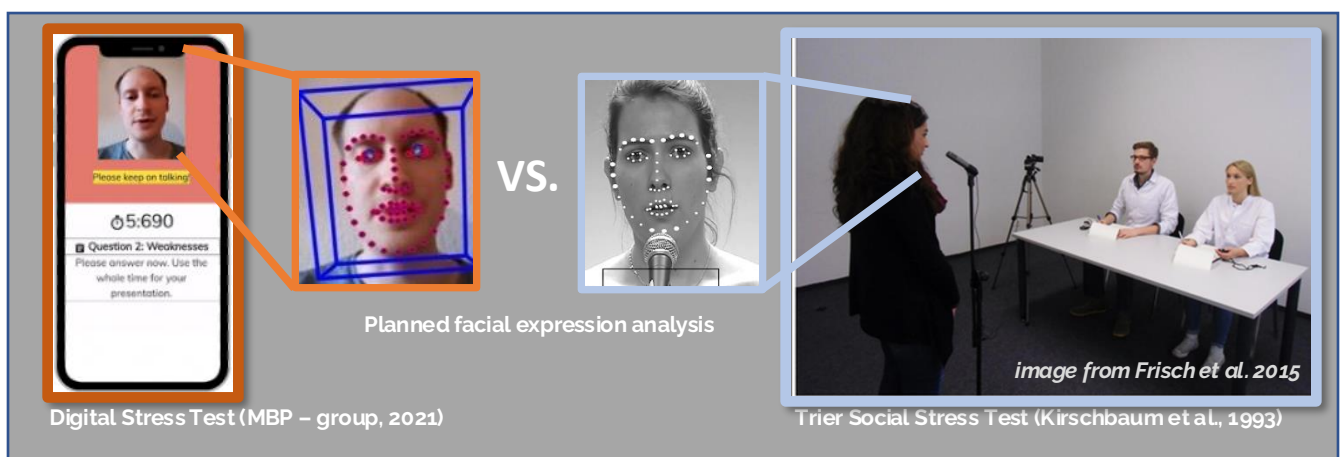
Just write us an email to set up a meeting!

Start: any time

What you should bring:

- Interest in non-verbal behavior analysis
- Good communication skills in German
- Python programming experience
- Independent and structured way of working

What we offer:

- Innovative research in an interdisciplinary environment
- Close collaboration with researchers from HCAI
- Participation in publishing a scientific paper

VS.

Planned facial expression analysis

Digital Stress Test (MBP – group, 2021)

image from Frisch et al. 2015

Trier Social Stress Test (Kirschbaum et al., 1993)

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More about Human-centered Artificial Intelligence Group