



Figure 1. Recording Rig

# EMOTION IS ALL IT NEEDS

## DATA RECORDING RIG FOR A NEW TYPE OF FOUNDATION MODEL

### The AI Revolution

Foundation models, such as Chat-GPT and Dall-E, have revolutionised AI. They are trained on large data sets from the Internet using huge amounts of computer power. The current foundation models can convincingly replicate human speech and generate striking images in response to text prompts.

### Limitations of Current Foundation Models

The intelligence of the current foundation models is limited by the data that they have been trained on. They can make plausible statements about human emotions, but they don't feel these emotions or understand how human emotions are generated in response to the environment. Human emotion plays a critical role in decision-making and human interaction. Without emotion, we would not care about anything or anyone. Foundation models cannot reach human levels of intelligence without a proper understanding of human emotion.

### Data Recording Rig for a New Type of Foundation Model

For my undergraduate project I am developing a recording rig that captures the emotions and subjective experiences of the person who is wearing it. It stores the following data:

*What the wearer is seeing and hearing.*

- *The electrical conductivity of the wearer's skin (GSR), which changes in response to emotionally significant events.*
- *Brain activity of the wearer. This is measured using electroencephalography (EEG), obtained through the Emotiv Epoc X headset.*

*Facial expression of the wearer.*

The raw data is processed to extract the text of dialog with the wearer, the sentiment of this dialog and the emotional state of the wearer. The recording rig is shown in Figure 1. An example of the data recorded by the device is shown in Figure 2.

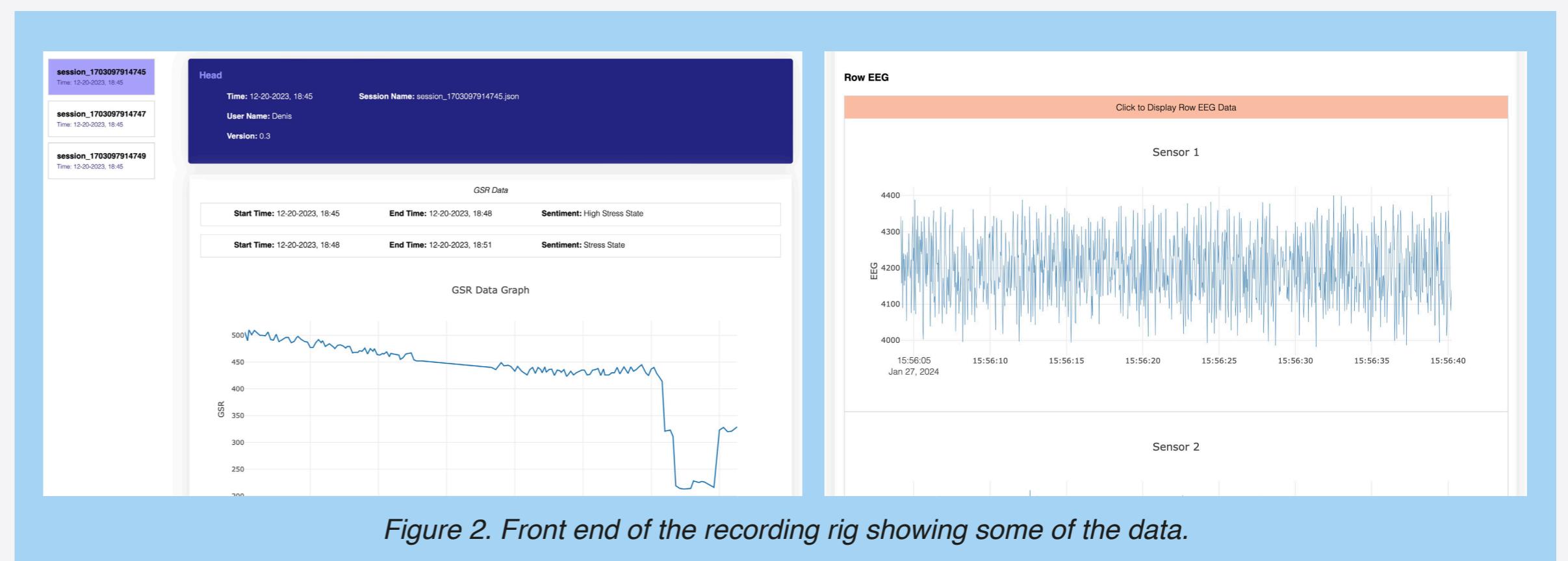


Figure 2. Front end of the recording rig showing some of the data.

### Security and Privacy

To protect other people's privacy, faces are blurred in similar way to Google Street View (see Figure 3). Future versions will also blur numberplates and other forms of personal information. Blockchain technology is used to reduce fraud.

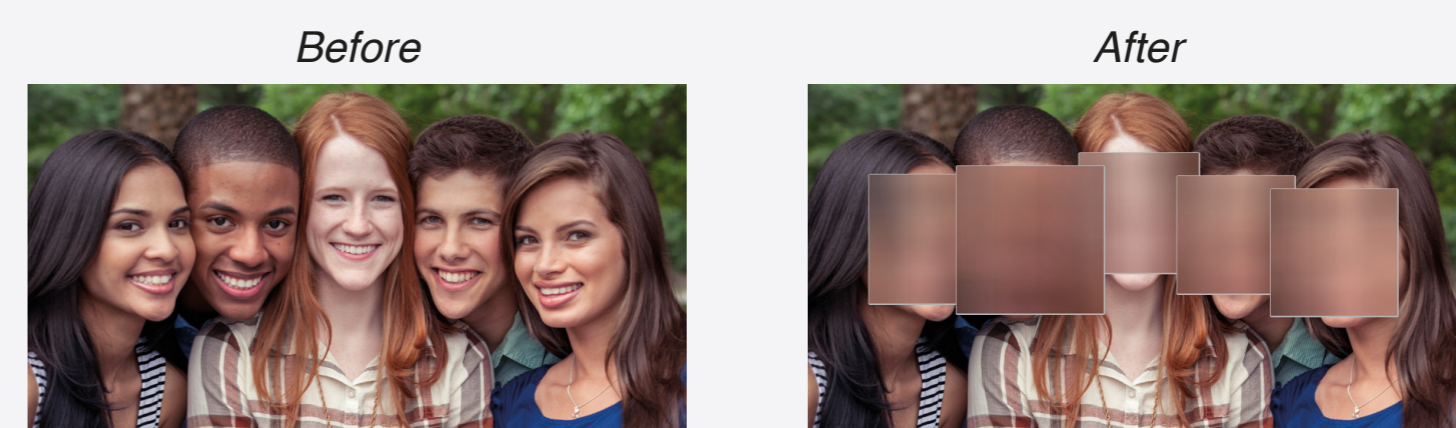


Figure 3. Blurring of faces to protect privacy.

### Applications

The data captured by this recording rig could be used to train a new type of foundation model that could generate human-like emotional responses to its environment. The applications of this type of foundation model include:

- **Realistic personality models.** People could record their emotions and experiences and train a model to replicate them. This would be much more convincing than the current personality models that are created by companies, such as Synthesia.
- **Focus groups.** An emotional foundation model could accurately simulate the reactions of audiences to products or films. This would substantially reduce development time and cost.
- **Script writing.** Separate models could be created from data recorded by different actors. These could generate realistic dialog for films that will feature these actors.
- **Customer support.** Emotional foundation models could empathise with customers in more believable ways than the current large language models.

This recording rig could also be used to monitor patients suffering from psychological illnesses, such as depression and epilepsy - providing real-time diagnosis and feedback to the user and care provider.