

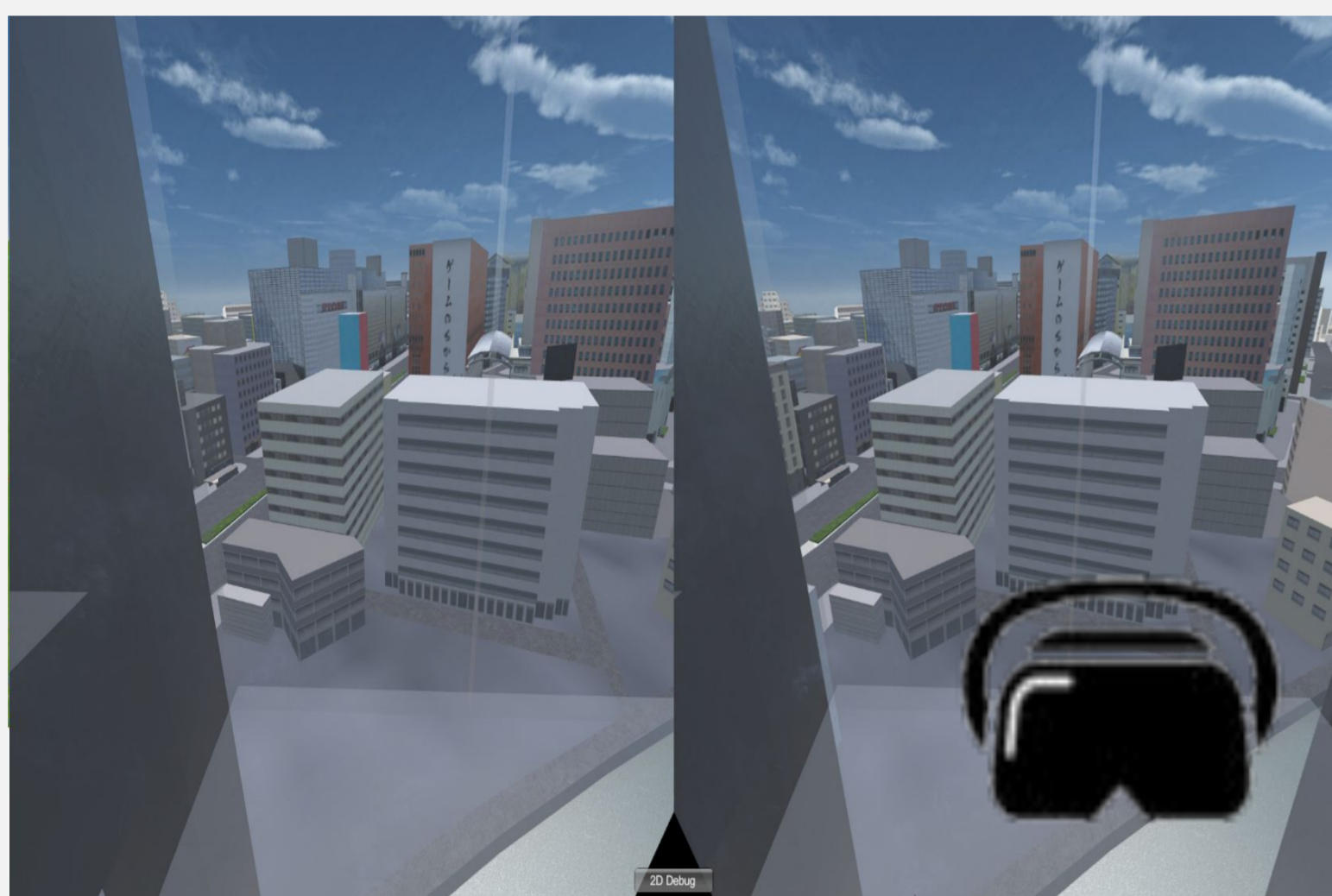
REAL-TIME ANXIETY PREDICTION IN VIRTUAL REALITY EXPOSURE THERAPY

INTRODUCTION

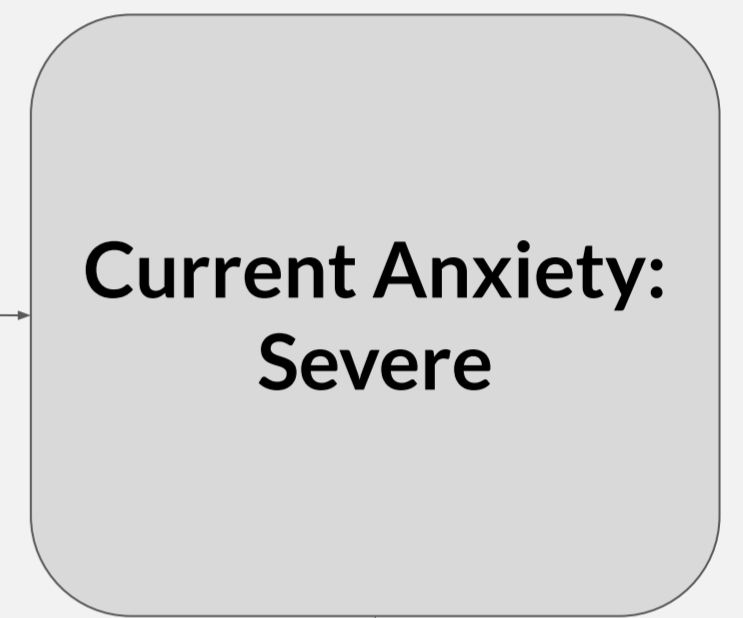
VRET Environment

Therapist

Info Panel



Exposure change based on user info



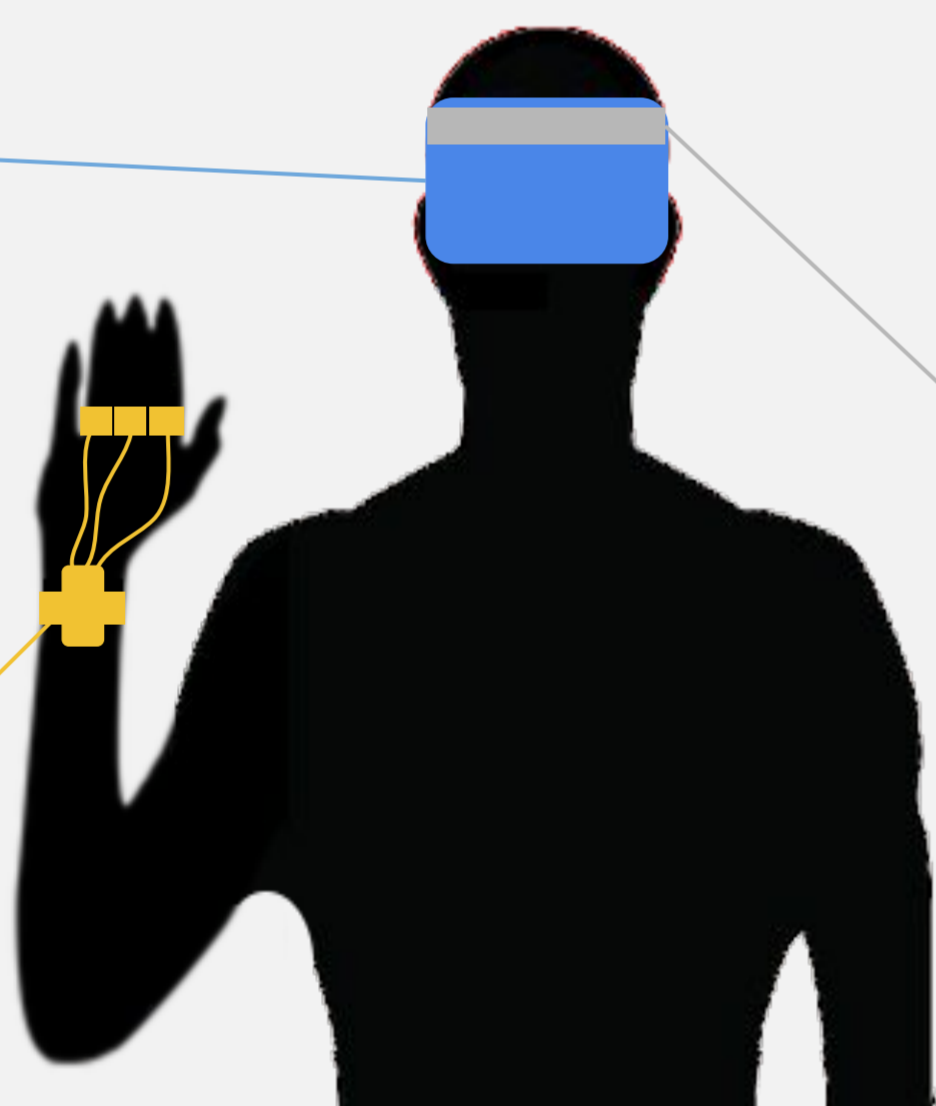
User



HMD



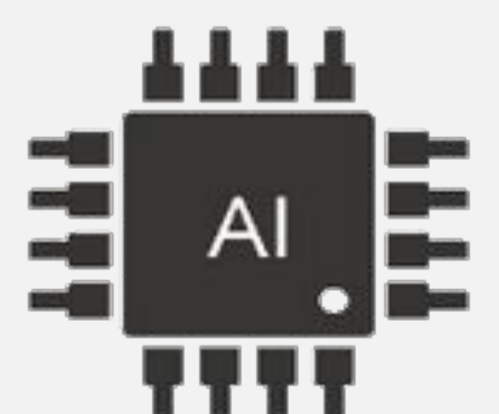
Shimmer GSR & PPG



Myndplay Brainband EEG

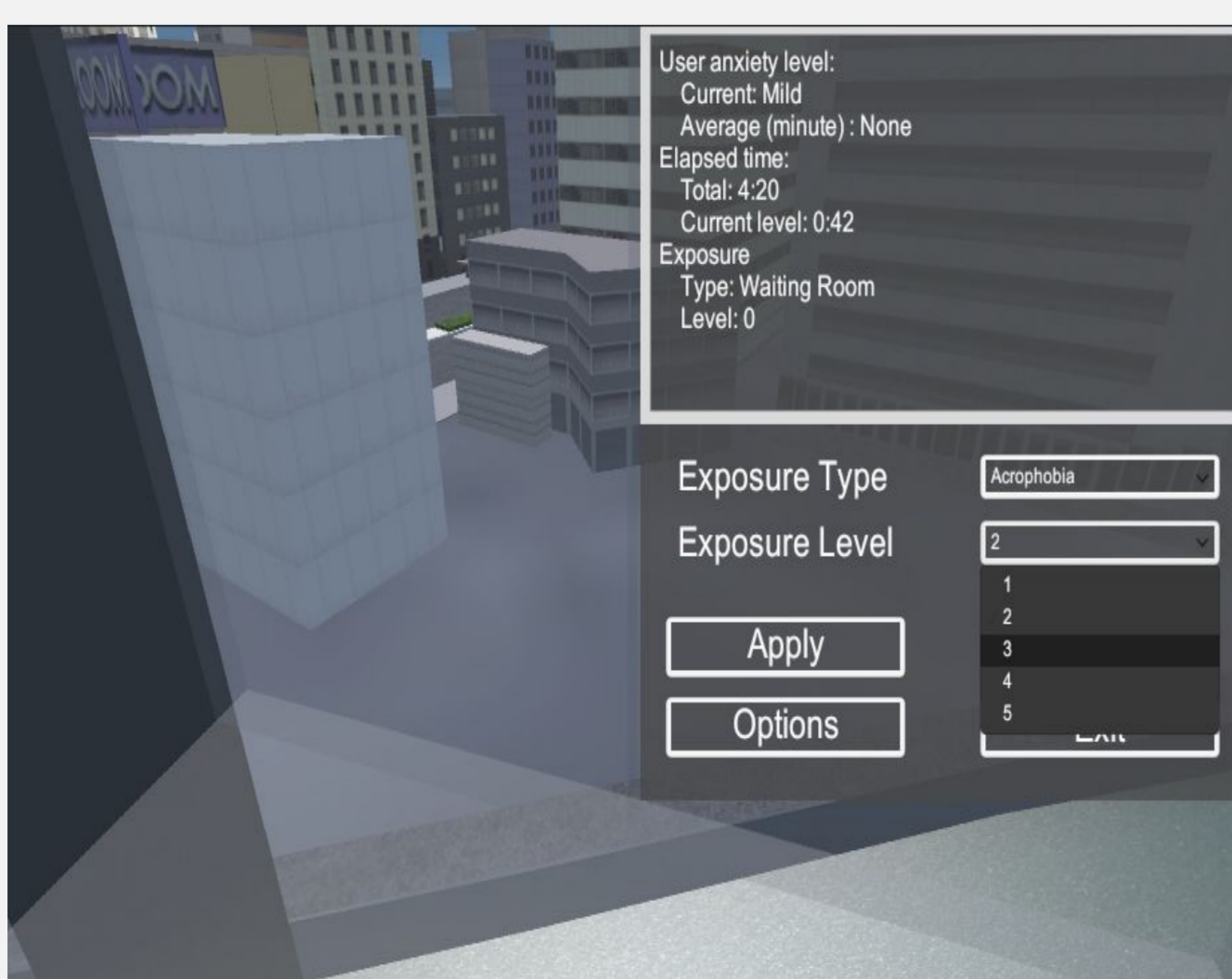
Heart rate, Skin Conductivity, Brain Activity

Anxiety Classification



CURRENT WORK

- Developed a working prototype that allows the anxiety prediction interface to be used with different exposure environments.
- Developed an environment based on a variant of the well-established cognitive task; Stroop Colour-Word Task.
 - Differentiates between three different stages of anxiety: (1) no anxiety, (2) mild anxiety and (3) severe anxiety.



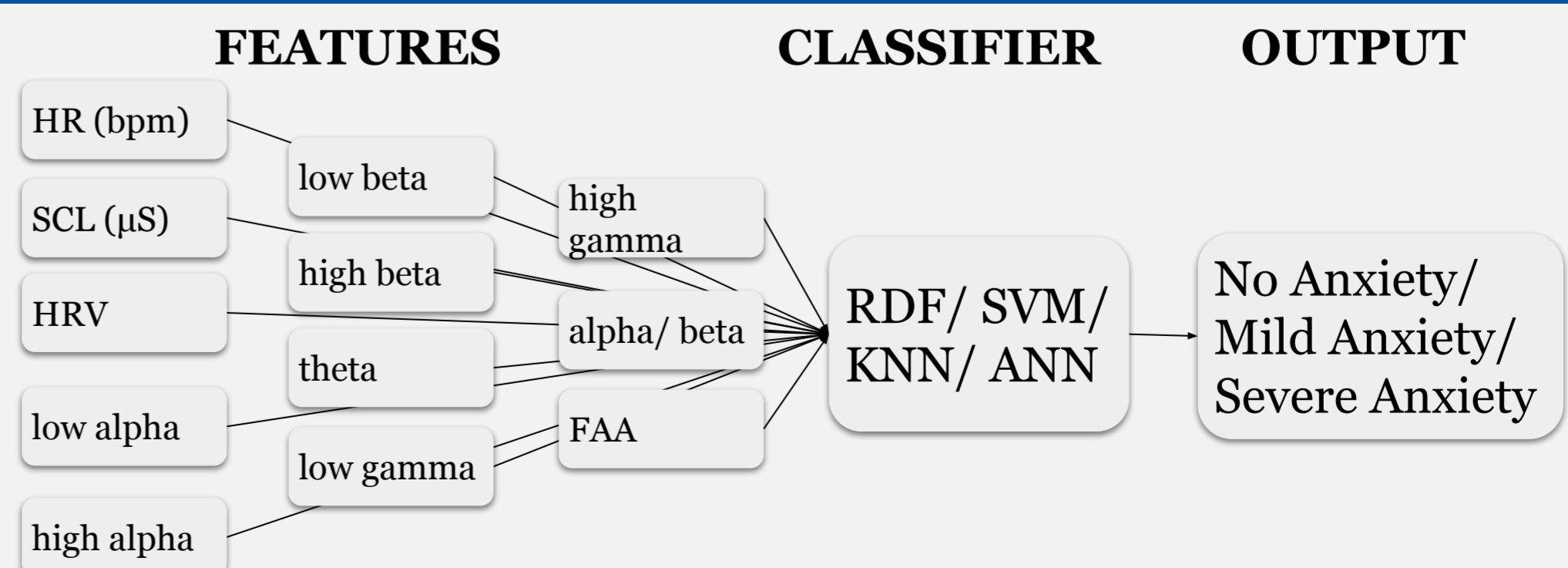
Graphical User Interface that is visible to the therapist and provides user information

UN GOALS

- Promoting good health and wellbeing by improving the quality of therapy.
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CLASSIFICATION MODEL



Structure of Anxiety Classification Models

HR: Heart rate, bpm: beats per minute, SCL: Skin conductivity level, μS: microSiemens, HRV: Heart rate variability, FAA: Frontal Alpha Asymmetry, RDF: Random decision forest, SVM: Support vector machine, KNN: K-nearest neighbour, ANN: Artificial Neural Network