METHODS/TECHNIQUES

RPPG BASED HEART RATE ESTIMATION USING DEEP LEARNING:

In this project, we used MTTS-CAN toolbox for implementations of deep based methods.

We planned to carry out our measurements with deep learning methods, which was our main approach. We hoped that deep learning reduced error rates as a result of these measurements. We used the model of MTTS-CAN to obtain the heart rate signals. This method processes RGB values captured by cameras with functions that also contain certain calculations for various external factors. These external factors include non-physiological variations such as the flickering of the light source, head rotation, and facial expressions. In this method, there are Temporal Shift Modules that will facilitate the exchange of information between frames. These modules provide superior performance in both latency and accuracy. MTTS-CAN also calculates the respiratory rate along with the heartbeat. Since respiration and pulse frequencies cause head and chest movements of the body, calculating these two values together had a great impact on the accuracy of the values compared to independently calculated models. [5]

REASON TO CHOOSE DEEP LEARNING METHODS:

There are many traditional methods and approaches. According to the information from literature studies and our studies , we can say that deep learning-based methods generally give more correct and faster results than traditional methods. we can say that deep learning-based methods play an important role in the development of rPPG technologies and their introduction into our daily lives.