Computer Science

Visualizing Biometrics in VR Simulations to Reduce Workplace Stress

Tyler Newlin, Connor Pflederer, Cody Lockridge, and Dan Chepkwony
Mentored by Huseyin Ergin, Ph.D

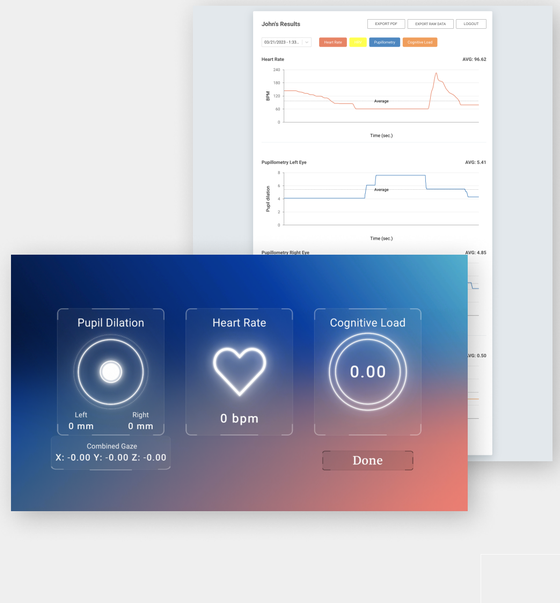
Overview

Alicia Mckoy at Peak Mind aimed to improve the mental wellbeing of employees. Peak Mind researchers have been studying stress and stress reduction techniques. The company partnered with HP and acquired access to the HP Omnicept Headset, which is capable of collecting biometric data while users are in a simulation. Our team was tasked with using the HP Omnicept SDK (Software Development Kit) to collect data from the headset, visualize it, and store it on their web application to aid in their research.

Peak Mind
Peak Mind
Peak Mind

Features

- Display data collected with the HP Omnicept Headset in real time
- Allow for researchers to flag significant points in the simulation
- Visualize data collected from completed simulations in a web application
- Export data as raw datasets or PDFs



Tech Stack

- React.js
- Unity (C#)
- Flask (Python)
- AWS
- HP Omnicept SDK
- Docker

Conclusion

Now, the software is being used on Indianapolis police officers to destress after their shifts. Peak Mind's research scientists are analyzing the data collected with our software to understand how their simulations affect users. As a team, we have learned how to develop well-tested, well-documented software that can be used by real people.