## Inspiration

As CS students at large research universities, we all know students who suffer from mental health issues, especially depression. Many of these students don't even realize that their mental health is declining until it is too late. As a result, we decided to create a service called Self by Auralytics to help students monitor their mental health and track their behavior on their computer to develop better habits and see what is affecting them.

After coming up with the initial idea for Self, we realized that the same technology could be applied to improving the customer experience for businesses. We decided to make another service as part of our larger Auaralytics project called Aware that monitors customers emotions to provide a sense of the customer experience in a business so that business owners can learn how to improve their environment.

## What it does

Self by Auralytics uses the front-facing camera on the user’s laptop to analyze their emotions as they use their computer. After analyzing their emotions, the program generates an Emotional Score that gets put into a live graph of Emotional Scores for the session. This is intended to provide the user with insight into how their emotions may be affected by their actions on their commuter. In addition, the software matches these Emotional Scores to what websites the user has open to demonstrate to the user how these websites may be affecting their health. If Self detects a steady decline in Emotional Score, then it will suggest resources for the user to seek help.

Aware uses the same emotion recognition technology and Emotional Score system to analyze the sentiment of up to 100 customers within view of a camera in a business. It uses the data it generates to gage the overall mood within the business and to measure customer satisfaction. If the software detects a spike in either direction, it marks the instance for review by the business owner to understand what may be affecting the customer experience at that time.

## How we built it

We used a combination of Go and OpenCV to capture images which are then run through a set of Python programs that process the image and send it to our databases in Microsoft Azure. We then use Azure’s Cognitive Services and FACE API to detect emotion from the pictures so we can calculate the Emotional Scores. This data is then sent to the React program that the user interacts with to display the graph.

## Challenges we ran into

Finding a project that was compatible across most of our skillsets was initially difficult for us. However, our biggest challenges involved integrating our various programs that we wrote in different languages to generate a cohesive application.

## Accomplishments that we're proud of

We are incredibly proud to have created software that can serve the community and help combat the mental health epidemic that often plagues universities.

In addition, we’re proud of the fact that we were able to create such versatile and flexible software that can be used in applications from mental health to business.

## What we learned

For some of our team members, there was a lot of exposure to new languages. In addition, this was all of our first project with Azure and with the general theme of machine learning.

## What's next for Auralytics

What we would like to do is turn Self into a more comprehensive software that can be used across mobile platforms along with computers to provide a more complete mental health profile for students to look at. We would also like it to recognize specific tasks within programs or websites that can affect a student’s emotional level.

For Aware, we would like to develop a piece of hardware for businesses to use in house or to make Aware compatible with existing camera systems.