**Inspiration**

The three of us love lifting at the gym. We always see apps that track cardio fitness but haven't found anything that tracks lifting exercises in real-time. Often times when lifting, people tend to employ poor form leading to gym injuries which could have been avoided by being proactive.

As students, the four of us program a lot. One thing we often see (in doing so) is our peers doing is putting aside their health to cram nonstop when they know they should take a break. People work so hard, they forget the huge difference small steps towards improving health can make. RemindMeow helps them remember in a way that can’t help but make them smile.

**What it does and how we built it**

Our product tracks body movements using EMG signals from a Myo armband the athlete wears. During the activity, the application provides real-time tracking of muscles used, distance specific body parts travel and information about the athlete’s posture and form. Using machine learning, we actively provide haptic feedback through the band to correct the athlete’s movements if our algorithm deems the form to be poor.

RemindMeow is a browser extension which each reminds its user to practice healthy break activities in regular intervals. These notifications include reminders to walk and stretch, eat a fruit/vegetable, as well as bedtimes. The extension communicates these goals through the use of a fun-loving digital cat avatar, which the user can both name and customize, designed by our very own Pulitzer Prize-winning, Nobel Laureate, Fields Medal Honoree, and MacArthur Genius Grant Recipient Australian artistic director in residence here on sabbatical, Sophie Qi Xuan Wen, PhD.

**How we built it**

We trained an SVM based on employing deliberately performed proper and improper forms for exercises such as bicep curls. We read properties of the EMG signals from the Myo band and associated these with the good/poor form labels. Then, we dynamically read signals from the band during workouts and chart points in the plane where we classify their forms. If the form is bad, the band provides haptic feedback to the user indicating that they might injure themselves.

We constructed a browser extension using Chrome APIs to listen to user focus on browser windows and measure activity. We then set alarms for the user based on their settings to remind them of healthy habits to keep after extended periods of online activity.

**Challenges we ran into**

Interfacing with the Myo bands API was not the easiest task for us, since we ran into numerous technical difficulties. However, after we spent copious amounts of time debugging, we finally managed to get a clear stream of EMG data.

**Accomplishments that we're proud of**

We made a working product by the end of the hackathon (including a fully functional machine learning model) and are extremely excited for its future applications.

**What we learned**

It was our first time making a hardware hack so it was a really great experience playing around with the Myo and learning about how to interface with the hardware. We also learned a lot about signal processing.

**What's next for SpotMe**

In addition to refining our algorithms and depth of insights we can provide, we definitely want to expand the breadth of activities we cover too (since we’re primarily focused on weight lifting too).

The market we want to target is sports enthusiasts who want to play like their idols. By collecting data from professional athletes, we can come up with “profiles” that the user can learn to play like. We can quantitatively and precisely assess how close the user is playing their chosen professional athlete.

For instance, we played tennis in high school and frequently had to watch videos of our favorite professionals. With this tool, you can actually learn to serve like Federer, shoot like Curry or throw a spiral like Brady.