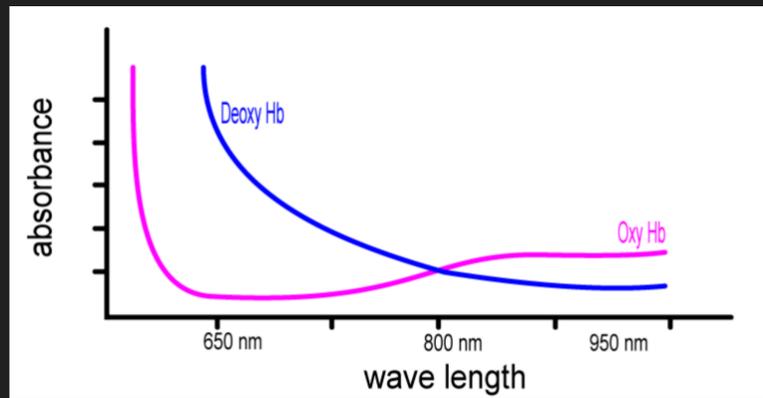


# ♥ XI METER

## Project Overview

Pulse Oximeter measures the blood oxygen saturation and pulse rate using a clip. The clip consists of two light-emitting diodes(LEDs) that emit light at two different wavelengths: one in the red spectrum and the other in the infrared spectrum. these lights pass through the tissue and are detected by a photodiode on the other side of the clip. The use of the clip helps take measurements from the earlobe. This is a compact and portable oximeter that is battery-powered and outputs the results to a phone application. This makes this device portable and user-friendly for medical professionals and also individuals that want to monitor their cardiac health

## Oxy vs. Deoxy Hemoglobin



## Meet the Team



Janvincent Gawaran



Sarmad Dawood



Sean Doan

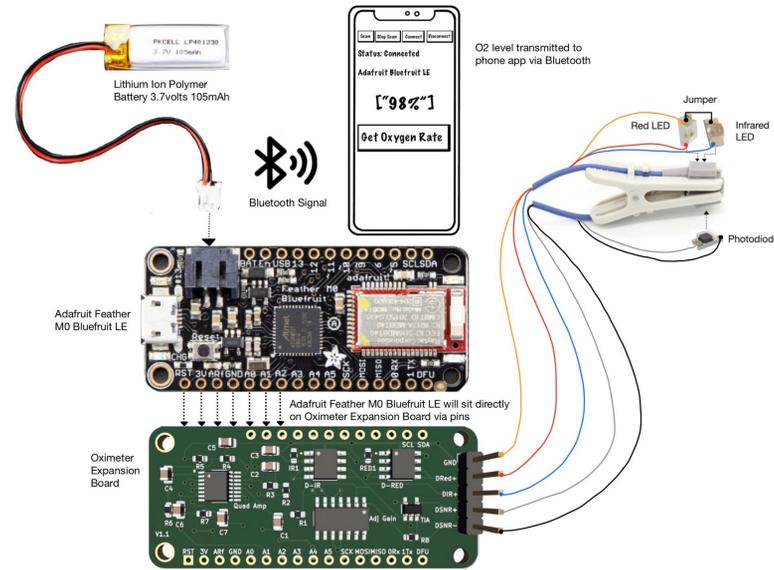


Gabriel Miller



Michael Martineau

## Hardware Diagram



## Final Design



## Why Is It Needed?

An oximeter is a non-invasive medical device used to measure the oxygen saturation level (SpO2) in a person's blood. By placing the device on a patient's fingertip or earlobe, it utilizes light absorption techniques to determine the percentage of oxygen-carrying hemoglobin in the blood. This information assists healthcare professionals in monitoring respiratory and cardiovascular health, identifying potential issues, and managing ongoing treatments.

## Sponsors

A Gift from Andrew Y.J. Szeto, Ph.D.

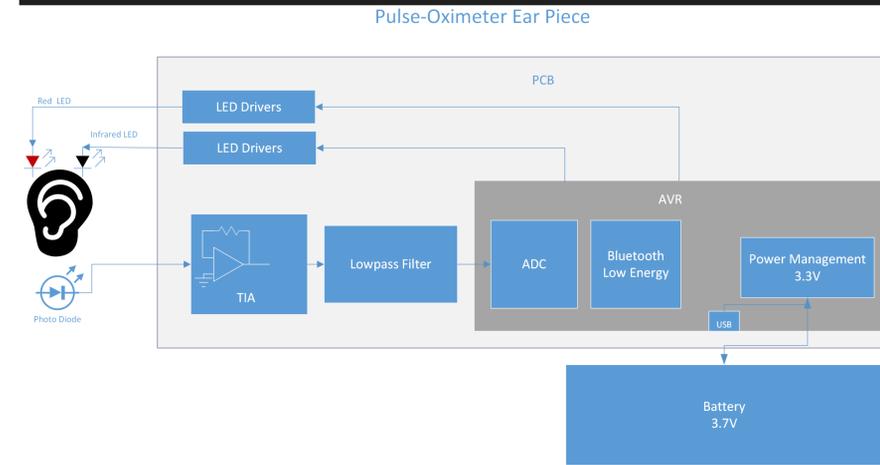


SAN DIEGO STATE UNIVERSITY

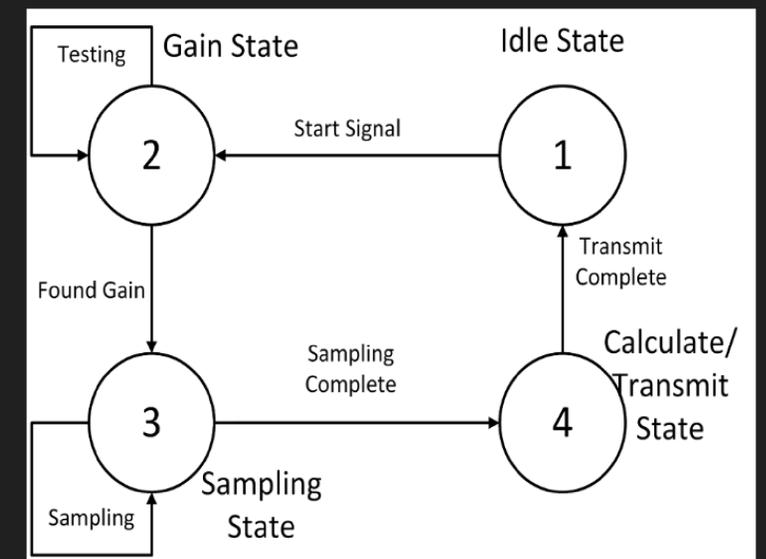


San Diego State University

## System Diagram



## Operating States



1. Oximeter is idle, awaiting "start" signal
2. oximeter determines the best gain option on TIA by changing the resistance on PGA to avoid signal saturation
3. Oximeter samples signal for a set period of time to collect data.
4. Oximeter uses collected data to determine O2 percentage in blood.