

IoT Presentation

WatchMeAI



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Project Team Members



Idan Horowitz

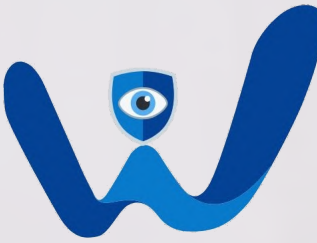


Elon Dagan



Matan Birnboim





Overview

194

Value the Person of Jesus

with great peace, and assurance of their righteousness in Christ. This is with grace. A revolution of favor, a revolution of restoration, and a revolution of people's lives transformed by a powerful encounter with our Lord Jesus.

The grace revolution is a revolution of relationship. The old covenant of law was about rules, religion, and regulations. The new covenant of grace is all about relationship. The old covenant of law created separation between God and His people; the new covenant of grace brings intimacy between God and His children.

The old covenant of law created separation between God and His people. The new covenant of grace brings intimacy between God and His children.

Let me take you to see what really happened when the law was given at the foot of Mount Sinai. Before God's people had even heard the Ten Commandments, they proclaimed, "All that the Lord has spoken we will do" (Exod. 19:8). This statement reflects man's pride and self-confidence. This is not an indictment against the children of Israel, but against all men who boast they can keep all of God's laws. When people say that they can keep God's laws even before they have heard what those laws are, that is putting confidence in the flesh. That is pride.

195

A Revolution of Relationship

So at the foot of Mount Sinai, when man boasted in his own self-sufficiency that he would keep God's laws, God's tone immediately changed. The Lord said to Moses on Mount Sinai, "You shall set bounds for the people around, saying, 'Take heed to yourselves that you do not go up to the mountain or touch its base. Whoever touches the mountain shall surely be put to death. Not a hand shall touch him, but he shall surely be stoned or shot with an arrow; whether man or beast, he shall not live.'" (Exod. 19:12-13).

My dear friend, that's the law of the old covenant. Just take a moment and imagine what it was like at the foot of Mount Sinai. The mountain was completely in smoke, because the Word of God was ascending like the smoke of a furnace, and the mountain quaked and groaned (Exod. 18:18). This is the same thing that happened at Mount Sinai when the Ten Commandments were given. It was a terrifying experience. The Lord said to Moses, "You speak with us, and we will hear; but let not God speak with us, lest we die" (Exod. 20:18-19).

The old covenant of the law was a covenant that was void of relationship. It was a covenant of distance and separation from God. The people, seized by fear, didn't want God to speak to them. That was (and still is) the effect of the law.

When God's people presumed on their own righteousness (reflecting the pride in every person's heart, making them believe they can actually do all that God demands), God unleashed upon them His righteous standards and immediately a division and distance came

01

Our Story

Try Pitch

02

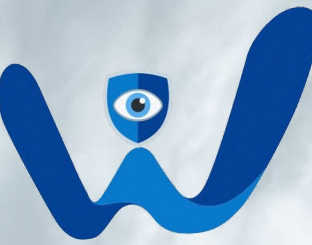
Our Product

03

Algorithms, Signals
& Data

04

Company Goals





Our Story



Our Story

Our story begins with concerns.

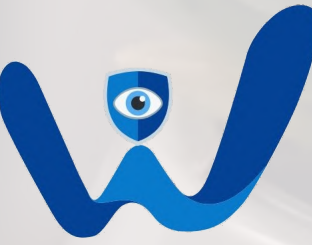
Concerns that occupy the thoughts of people of all ages. Girls and boys, women and men, old people and young.

When going on a hike, when sitting in their house, or simply when trying to get home at night, everyone wants to be safe.

But if something happens, no one will know. Who will help them?

We must make sure that as they walk from place to place, or when they sit at home, they will feel safe.

This is our story, the story of all of us.



Our Story

The problem



Our Solution



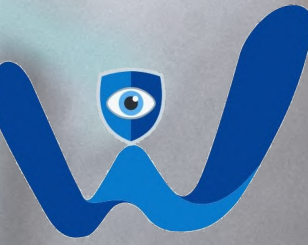
Examples



Our Product

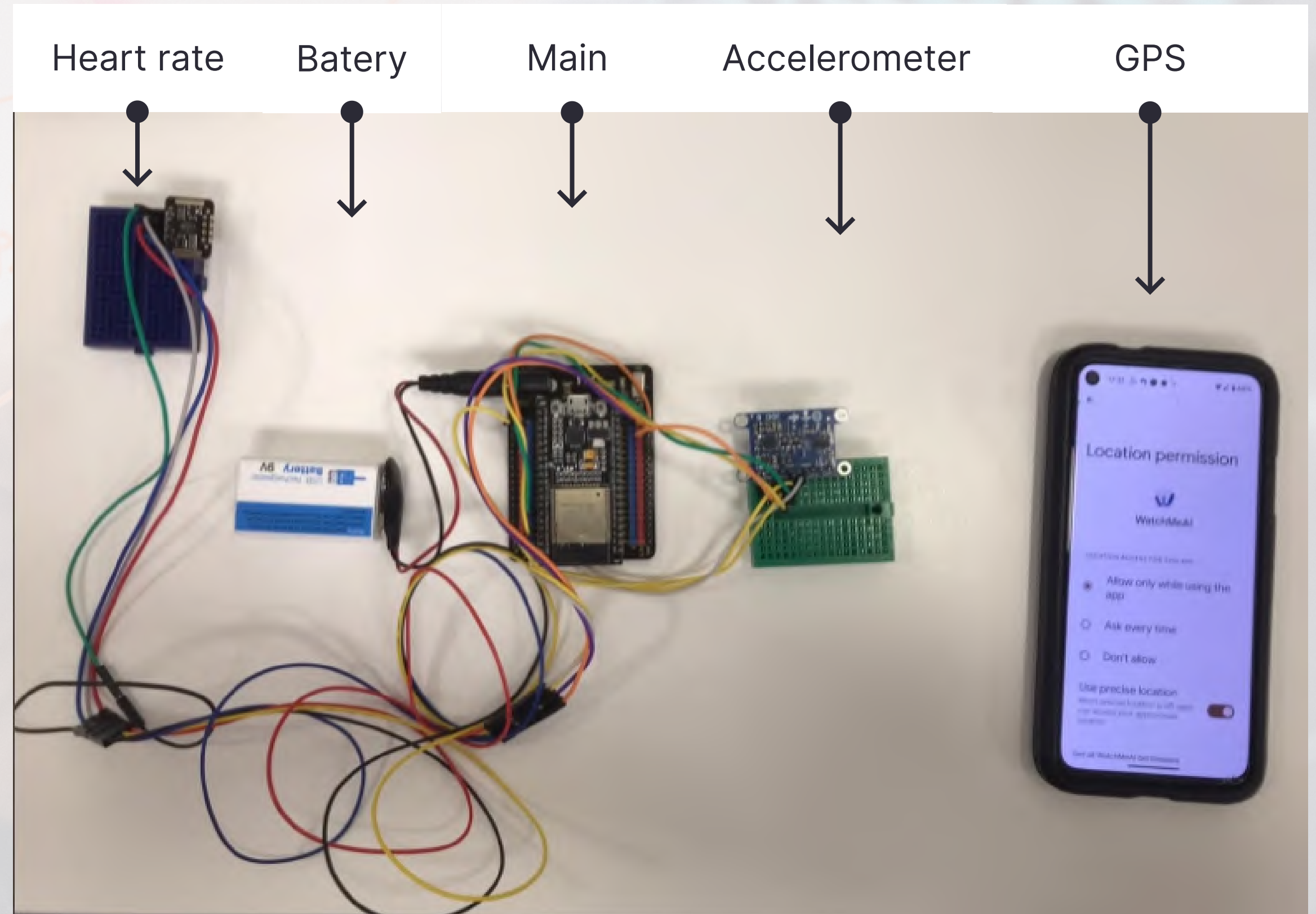


<https://www.youtube.com/watch?v=4ouJbpXEDs8>



Our Product

Illustration:



A large, stylized blue letter 'W' serves as the background. In the center of the 'W' is a blue shield-like shape containing a detailed eye with a brown iris and a white highlight.

Application



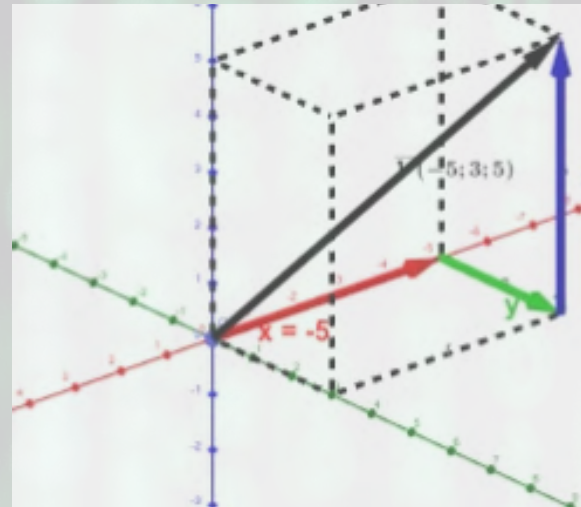
Algorithms, Signals & Data

Data Flow:

1.Means of Measurement:

Accelerometer

x,y,z



GPS

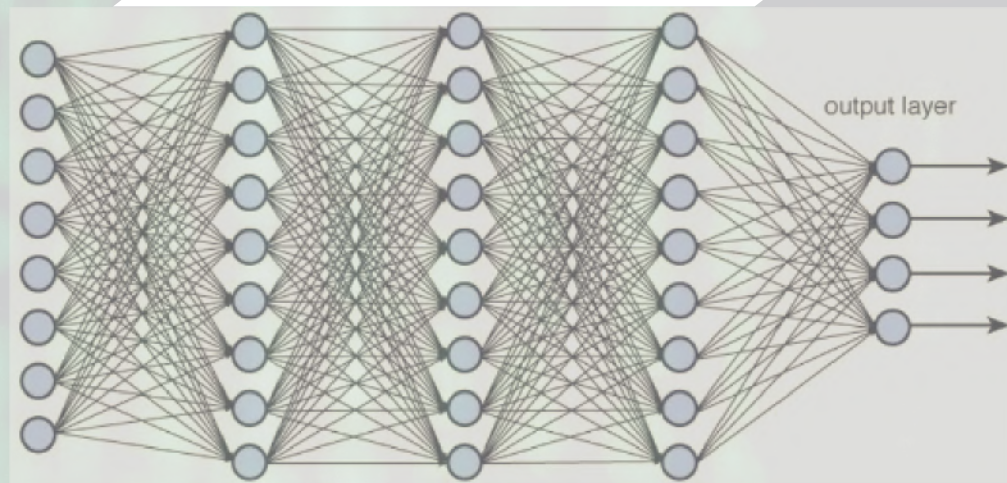


Heart rate



2.Analysis:

norm & neural
network



3.Inference:

walking
running
falls
no signal

Abnormal

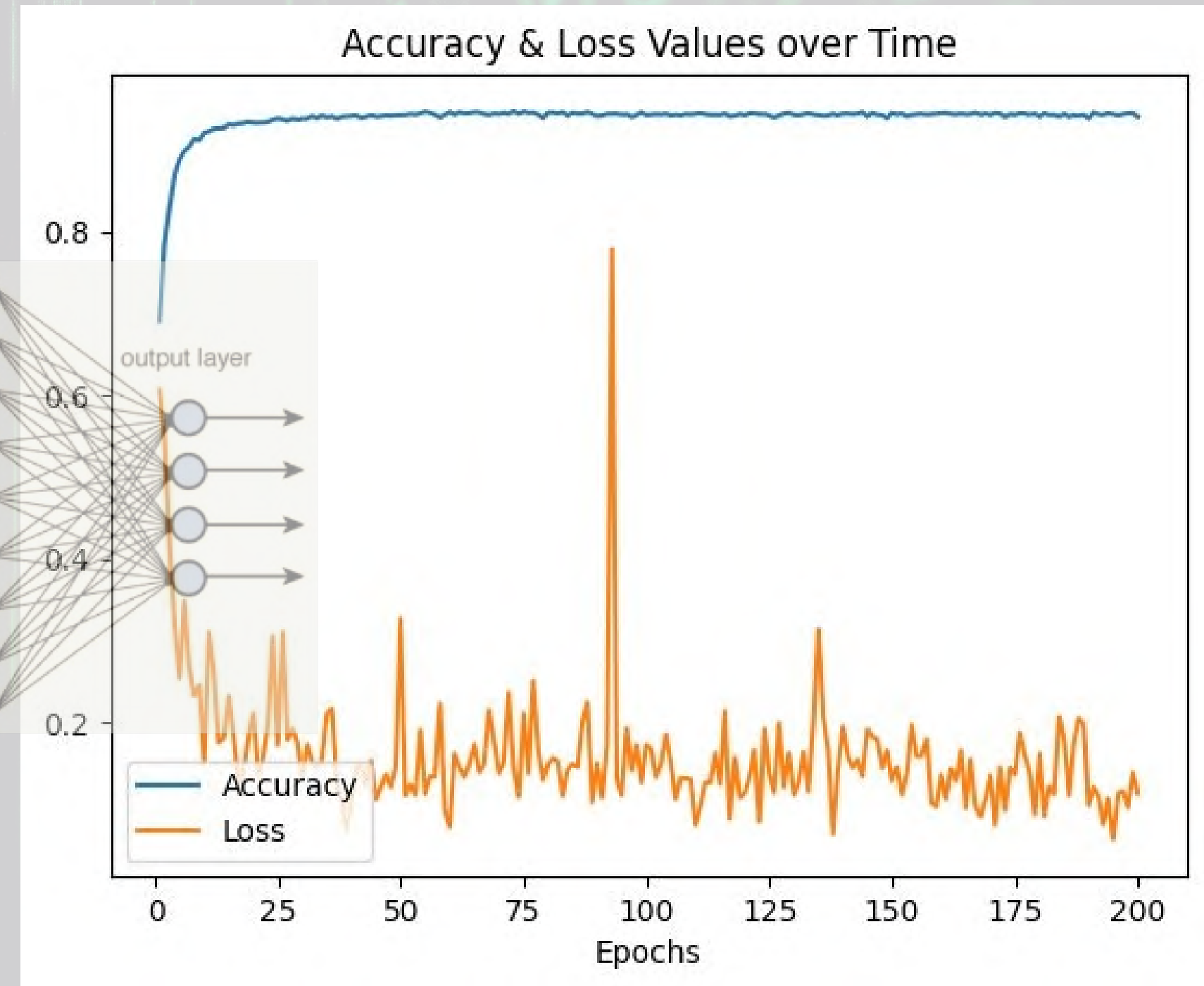
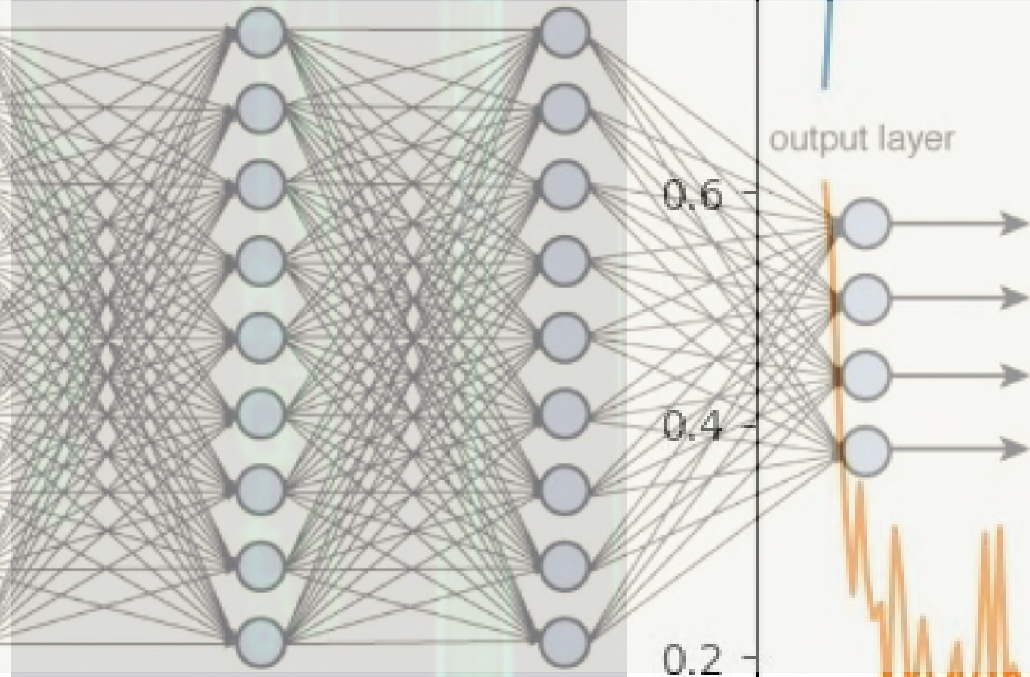
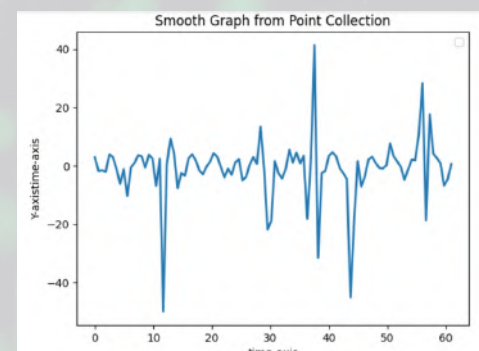
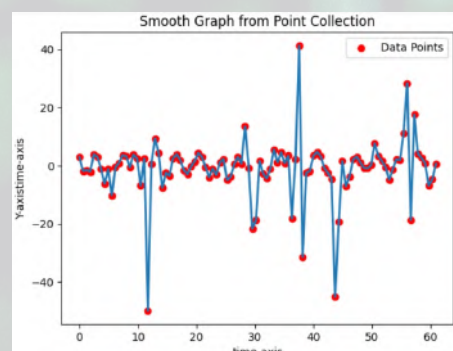
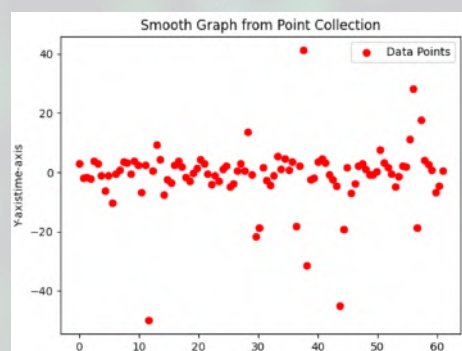
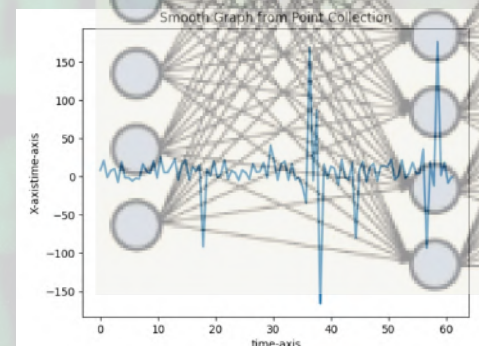
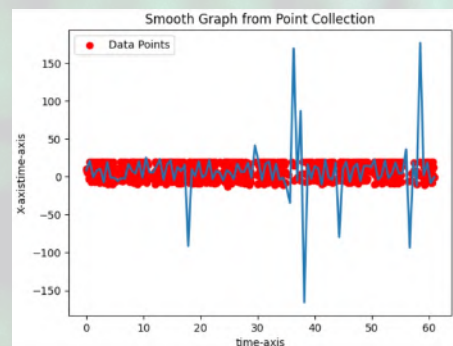
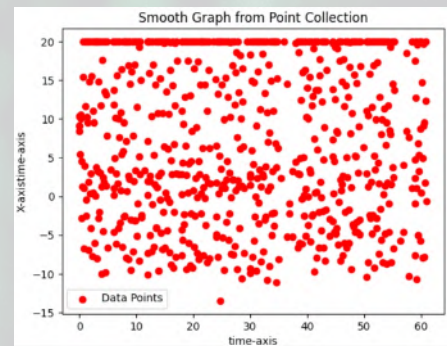
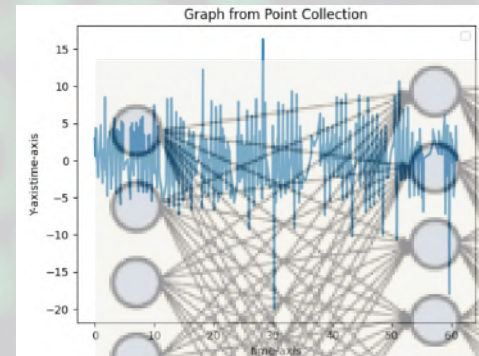
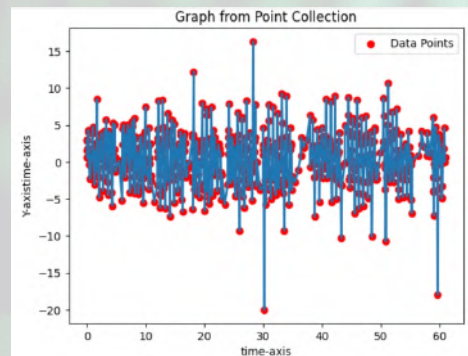
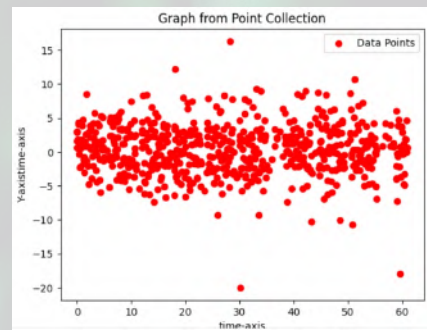
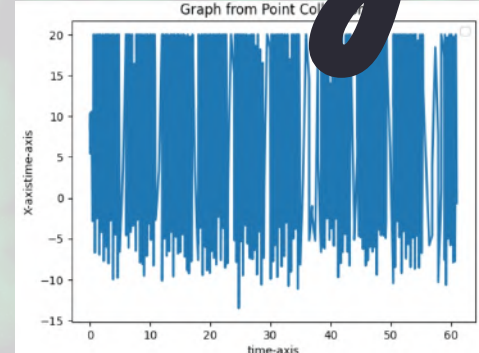
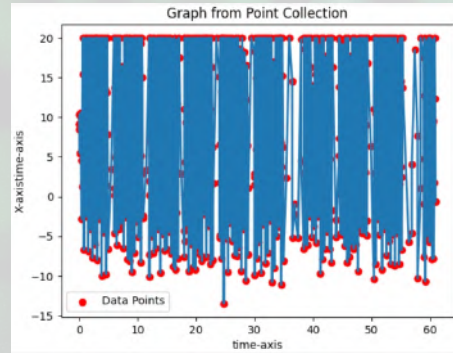
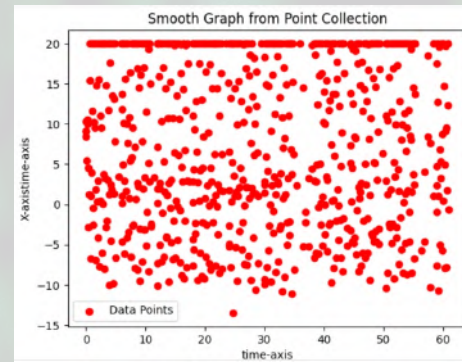
Stress

Body Mode

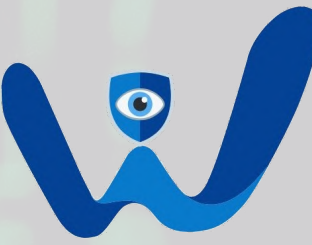
Emergency



Signals & Data



Signals & Data

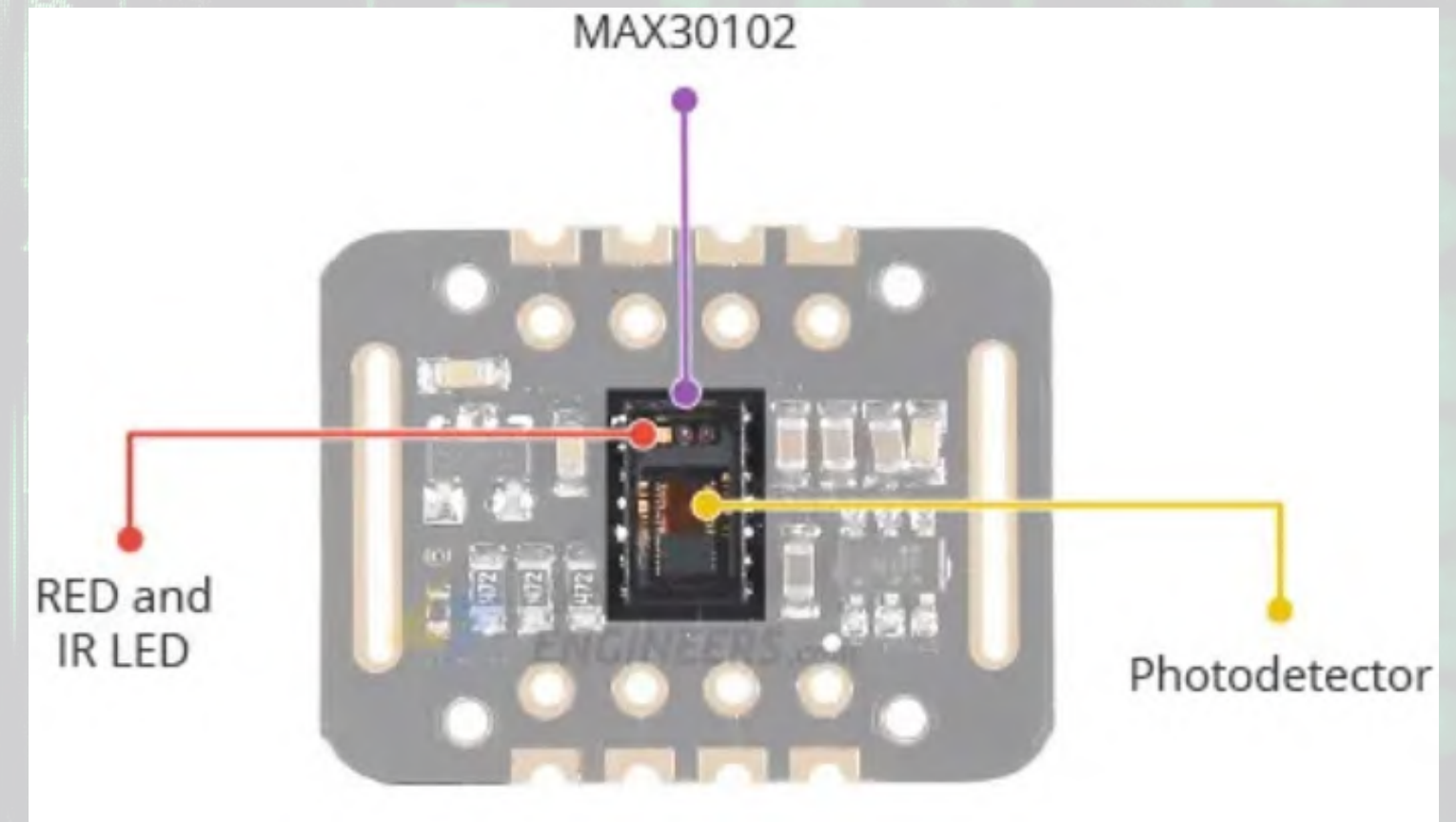


Interfacing MAX30102 Pulse Oximeter and Heart Rate Sensor with Arduino

Behind the window on one side, the MAX30102 has two LEDs – a RED and an IR LED. On the other side is a very sensitive photodetector. The idea is that you shine a single LED at a time, detecting the amount of light shining back at the detector, and, based on the signature, you can measure blood oxygen level and heart rate.

I2C Interface

The module uses a simple two-wire I2C interface for communication with the microcontroller. It has a fixed I2C address: 0xAEHEX (for write operation) and 0xAFHEX (for read operation).



Signals & Data



Interface MPU6050 Accelerometer and Gyroscope Sensor with Arduino

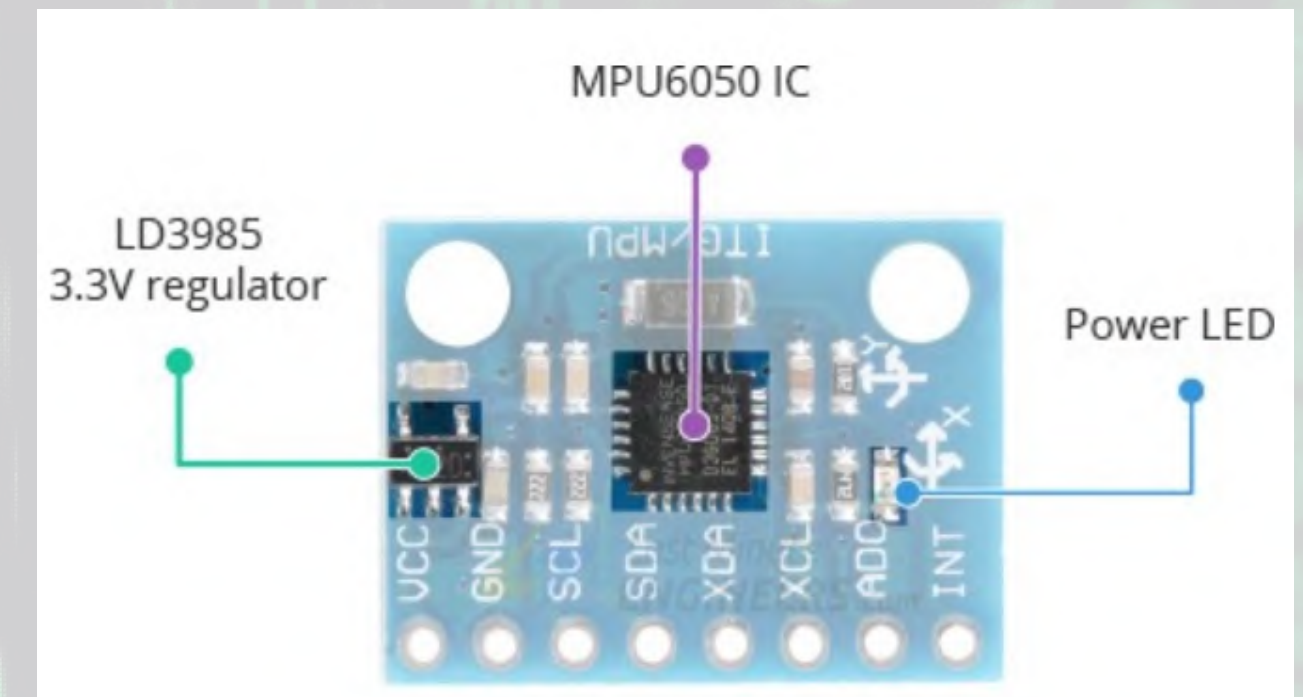
Accelerometers are based on Micro-Electro-Mechanical Systems (MEMS fabrication technology).

As a result of deflection, the capacitance between fixed plates and plates attached to the suspended structure changes. This change in capacitance is proportional to the acceleration along that axis.

The sensor processes this change in capacitance and converts it into an analog output voltage.

The I2C Interface

The module communicates with the Arduino via the I2C interface. It supports two different I2C addresses: 0x68HEX and 0x69HEX. This allows two MPU6050s to be used on the same bus or to avoid address conflicts with other devices on the bus.



Application Algorithms



- **Walk/Run Classification**
- **Heart Rate Monitor**
- **Fall**

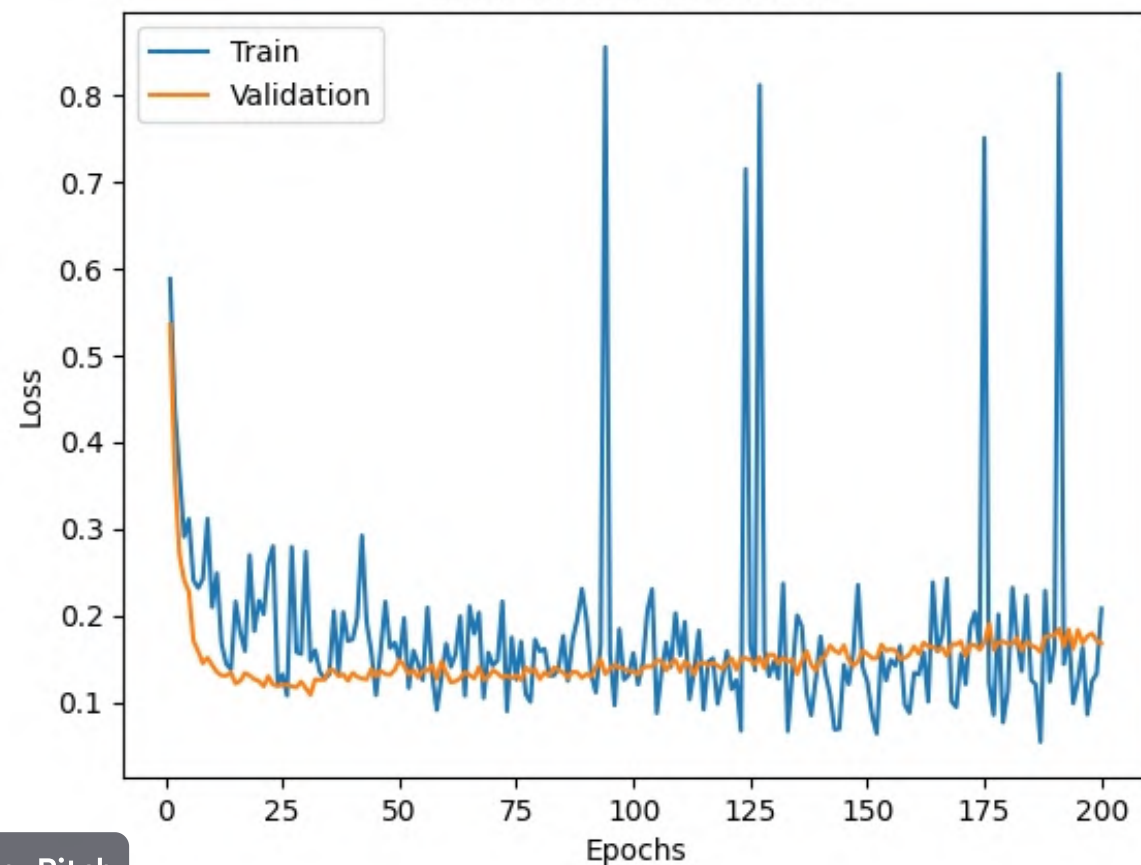
Walk/Run Classification



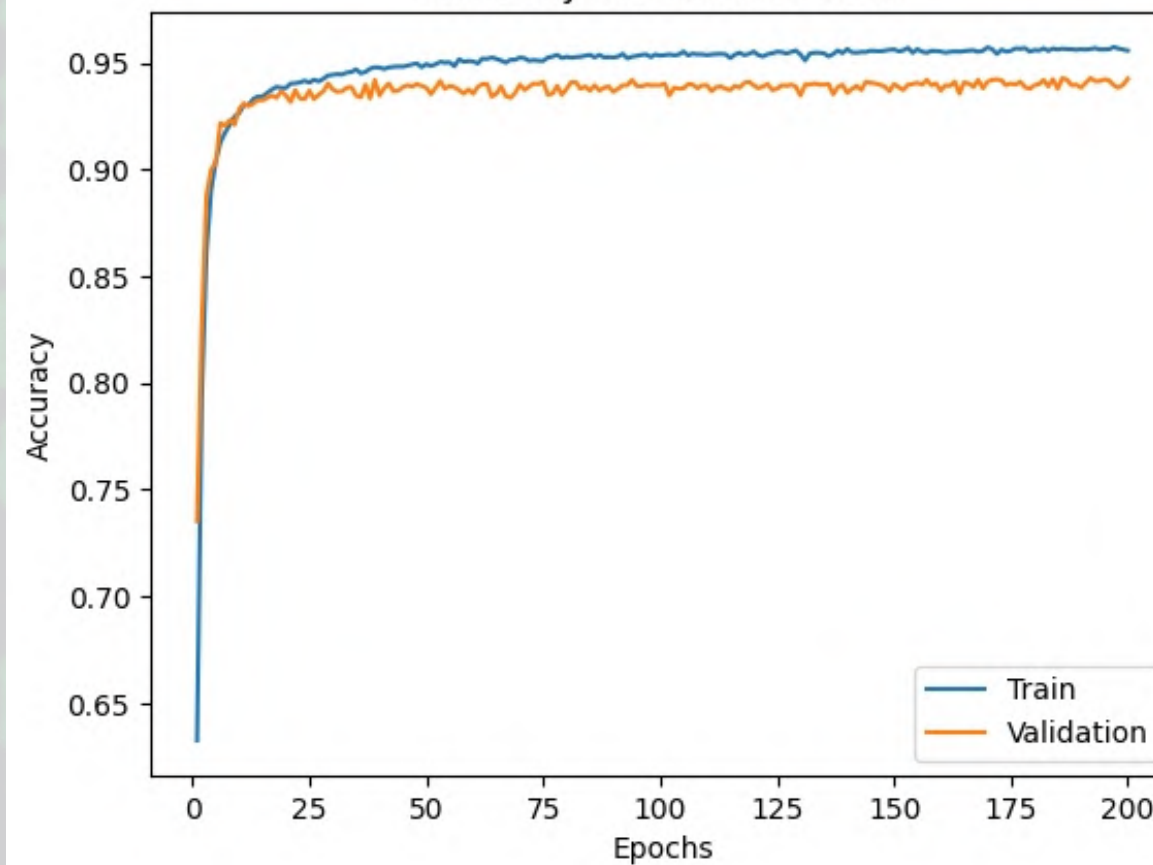
Using Communal Data

- **Data Preprocessing**
- **Neural Network**

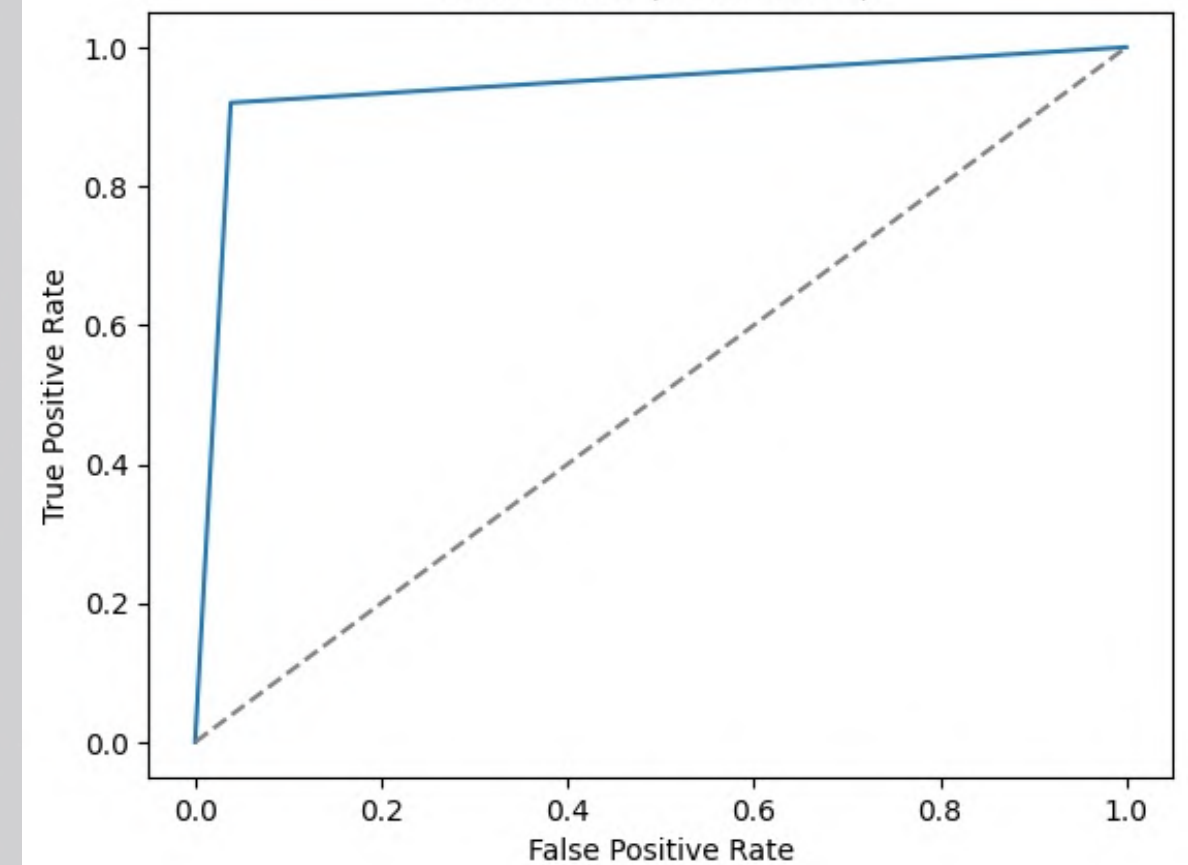
Loss Curves Over Time



Accuracy Curves Over Time



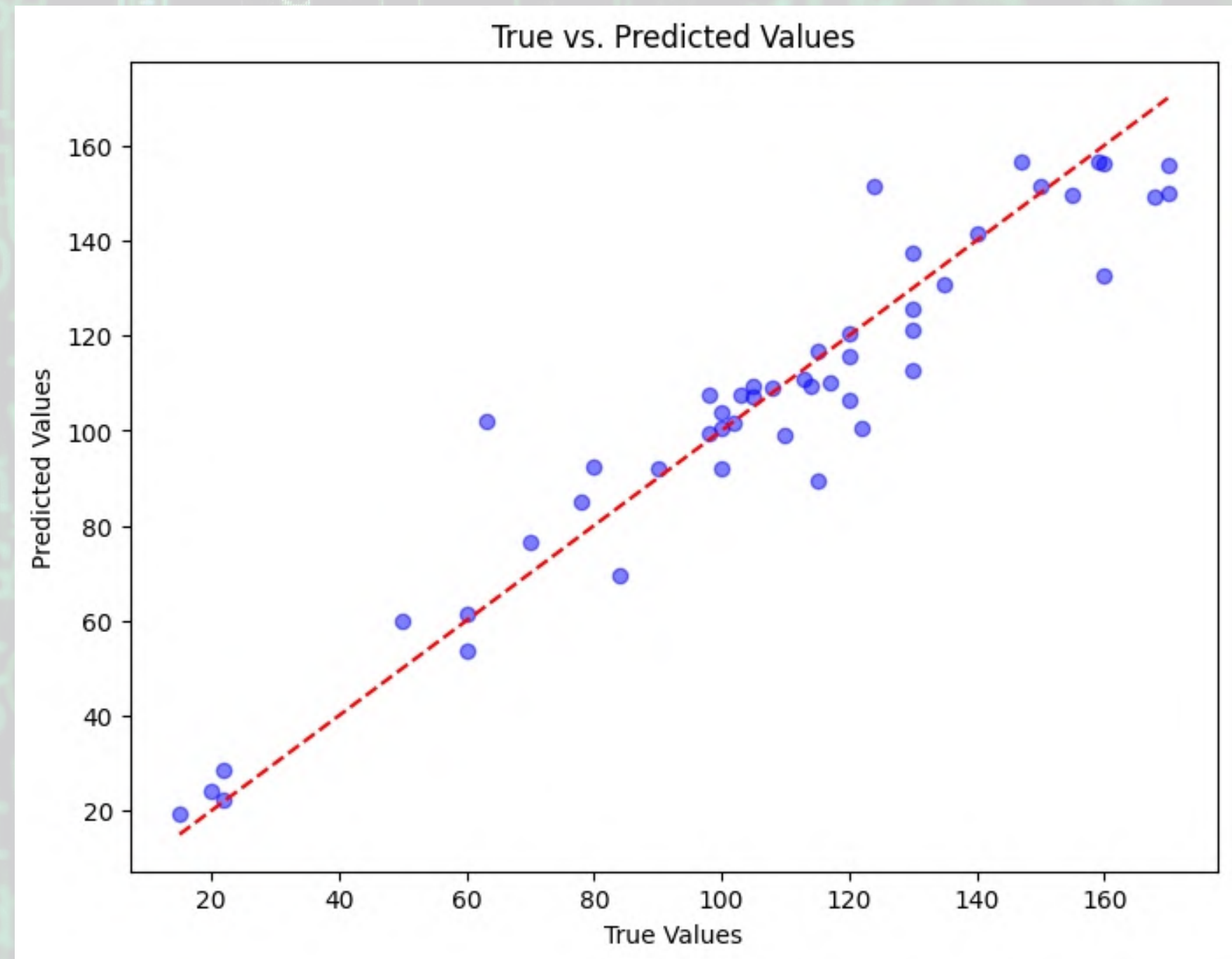
ROC Curve (AUC = 0.94)



Step Counter

Using Communal Data

- **Feature Extraction**
- **Model Selection**
- **Hyperparameter Tuning**





Company Goals



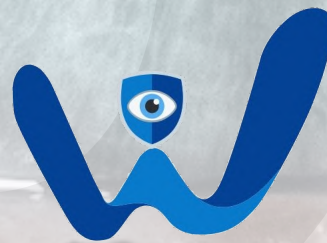
Company Goals

We at WatchMeAI strive to be a make an impact in the world, providing intelligent, AI-based solutions for the benefit of populations seeking assistance, safety and decrease of anxiety in dangerous situations.

Based on a product with a few simple sensors and a convenient mobile phone application, we aim to produce a security mechanism that works independently, reliably, intelligently and effectively.

WatchMeAI

The End



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