

VERSION 1.0

# Milestone 1 Presentations

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# BarBuddy

Oulu, Rebecca, Steven, Sherry

Link to Github Repo: <https://github.com/acceberH/515proj.git>

Or Page: <https://acceberh.github.io/515proj/>



# Agenda

1 Problem

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2 Solution

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3 User flow diagram

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4 Data pipeline

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5 Budget

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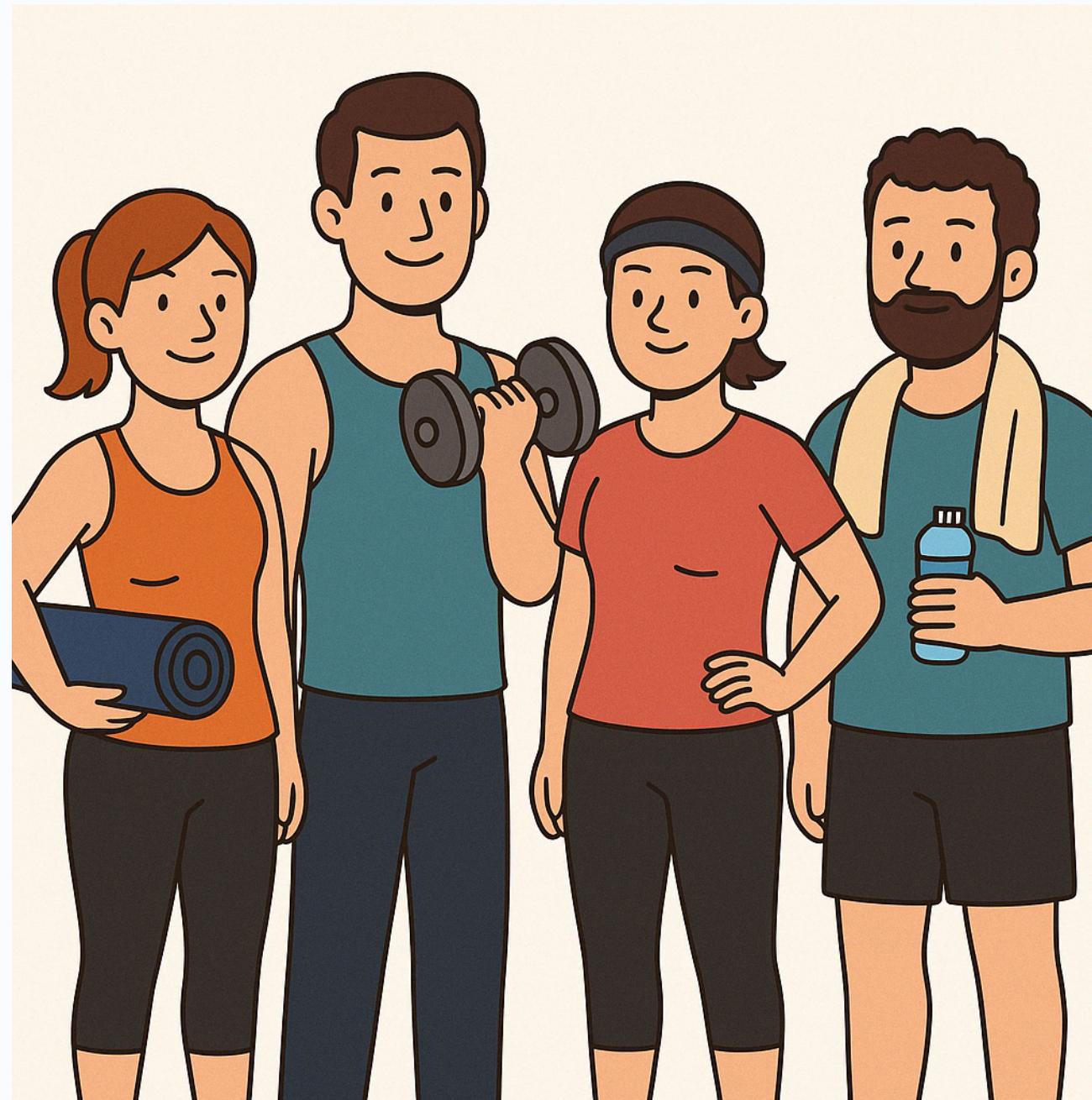
6 Prototypes

## Problem statement

Many people lack real-time feedback during free weight training, making it hard to correct improper form and risking injury.

## Intended user group

The intended user group would be home gym enthusiasts that seek real-time feedback to improve form, performance, and safety during strength training.



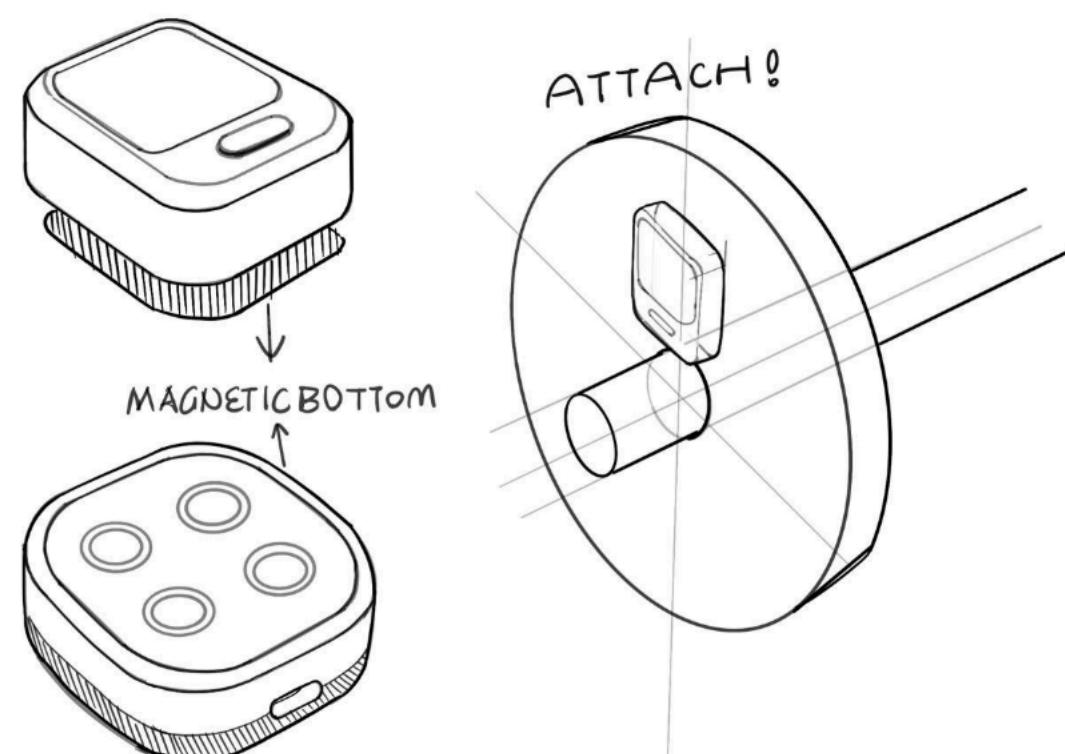
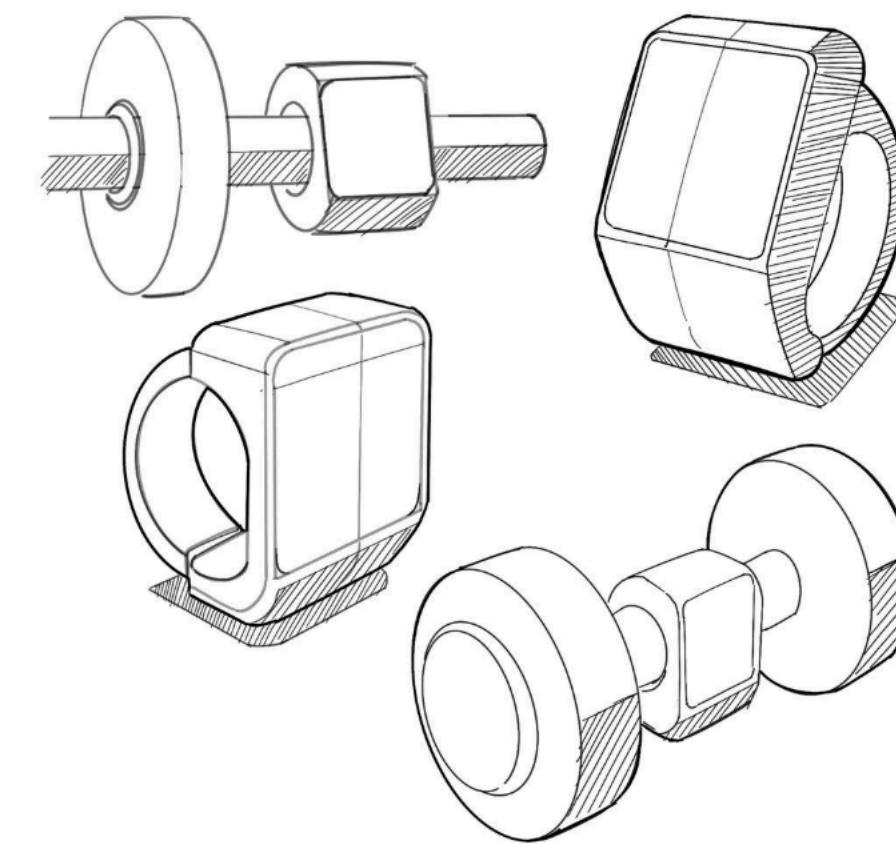
# Solution

## Sensor

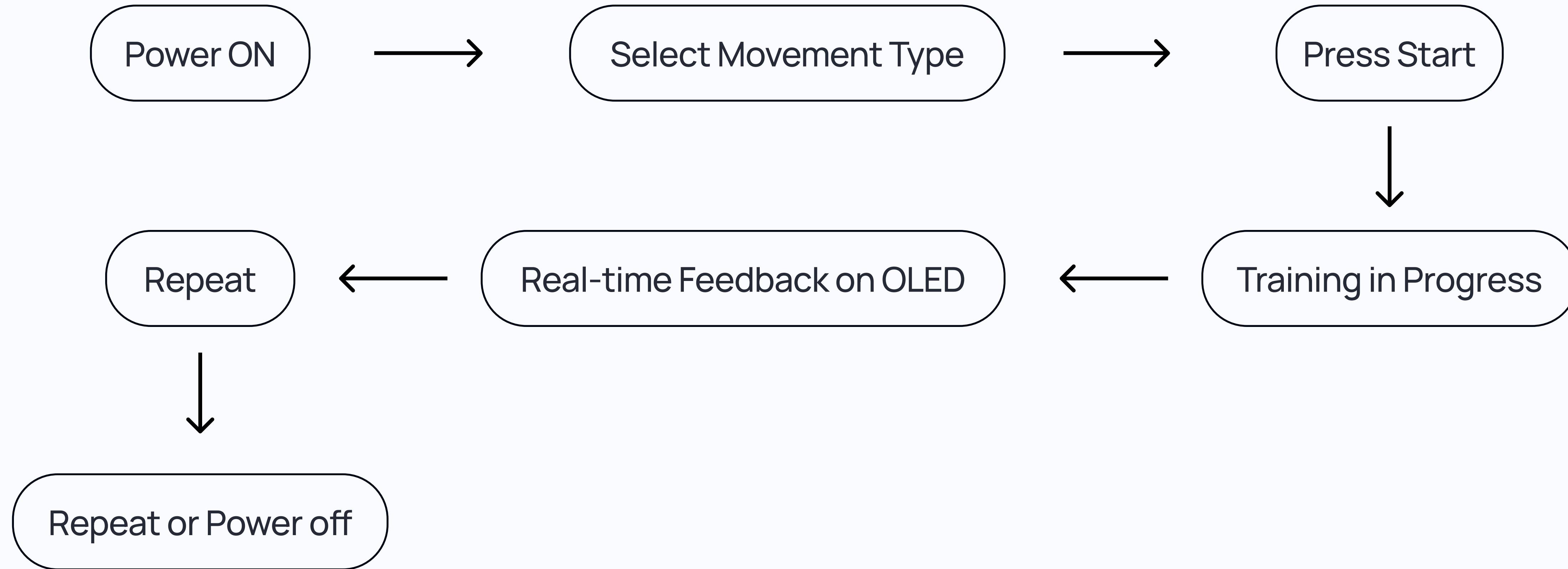
A device with sensor attached on barbell/dumbbell to track movement smoothness

## Camera(Next Step)

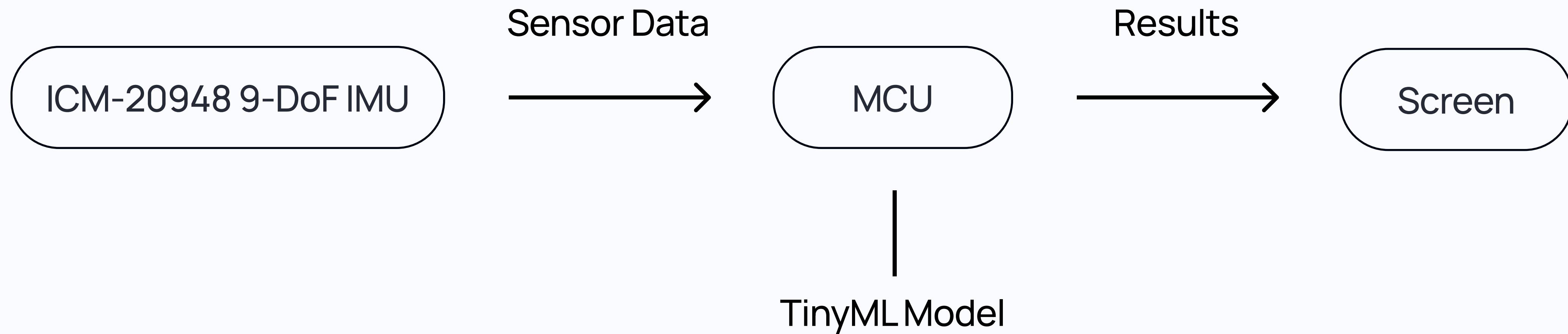
A camera captures the movement and a OLED screen gives real time feedback



# User Flow Diagram

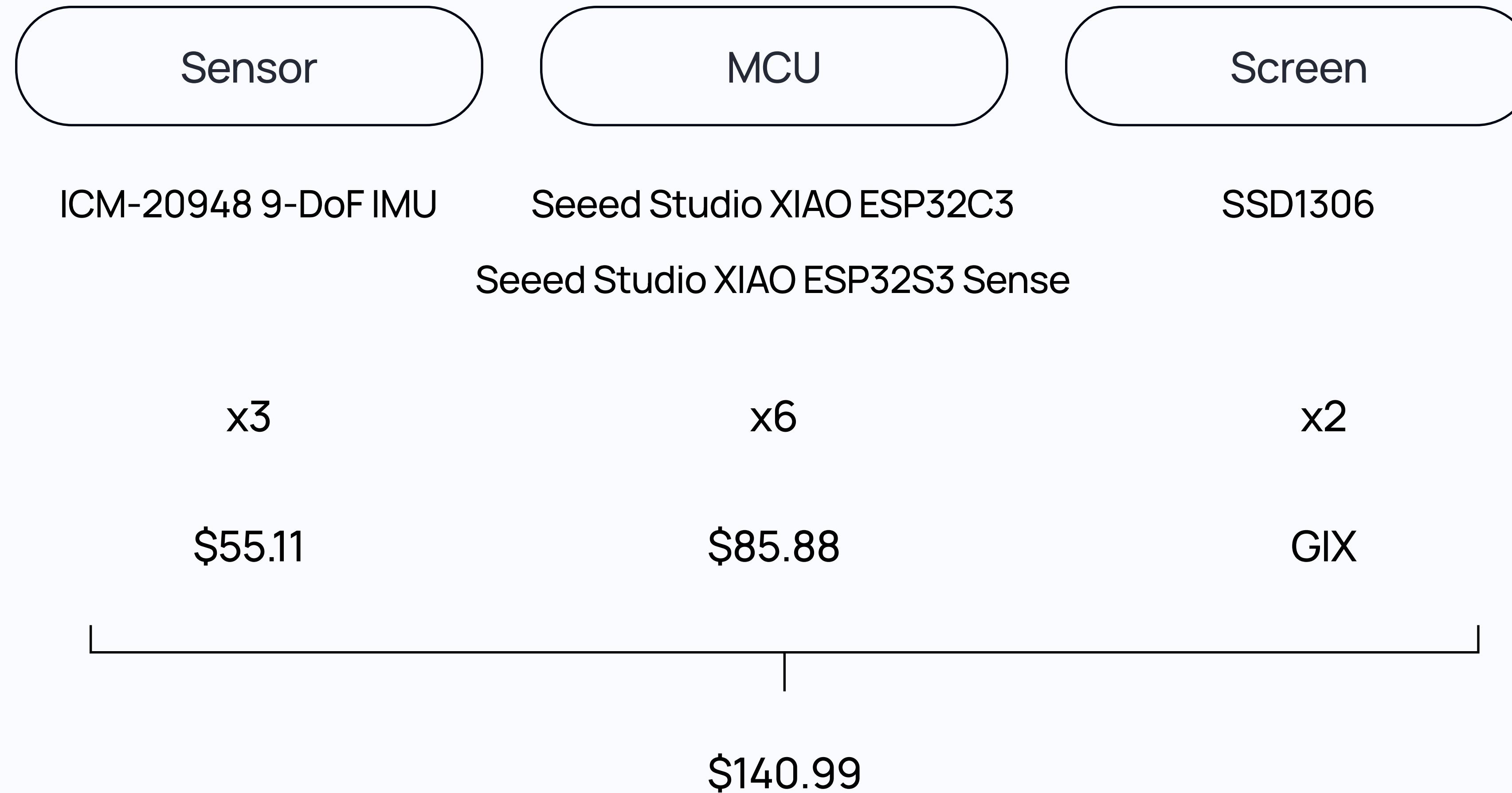


# Data Pipeline

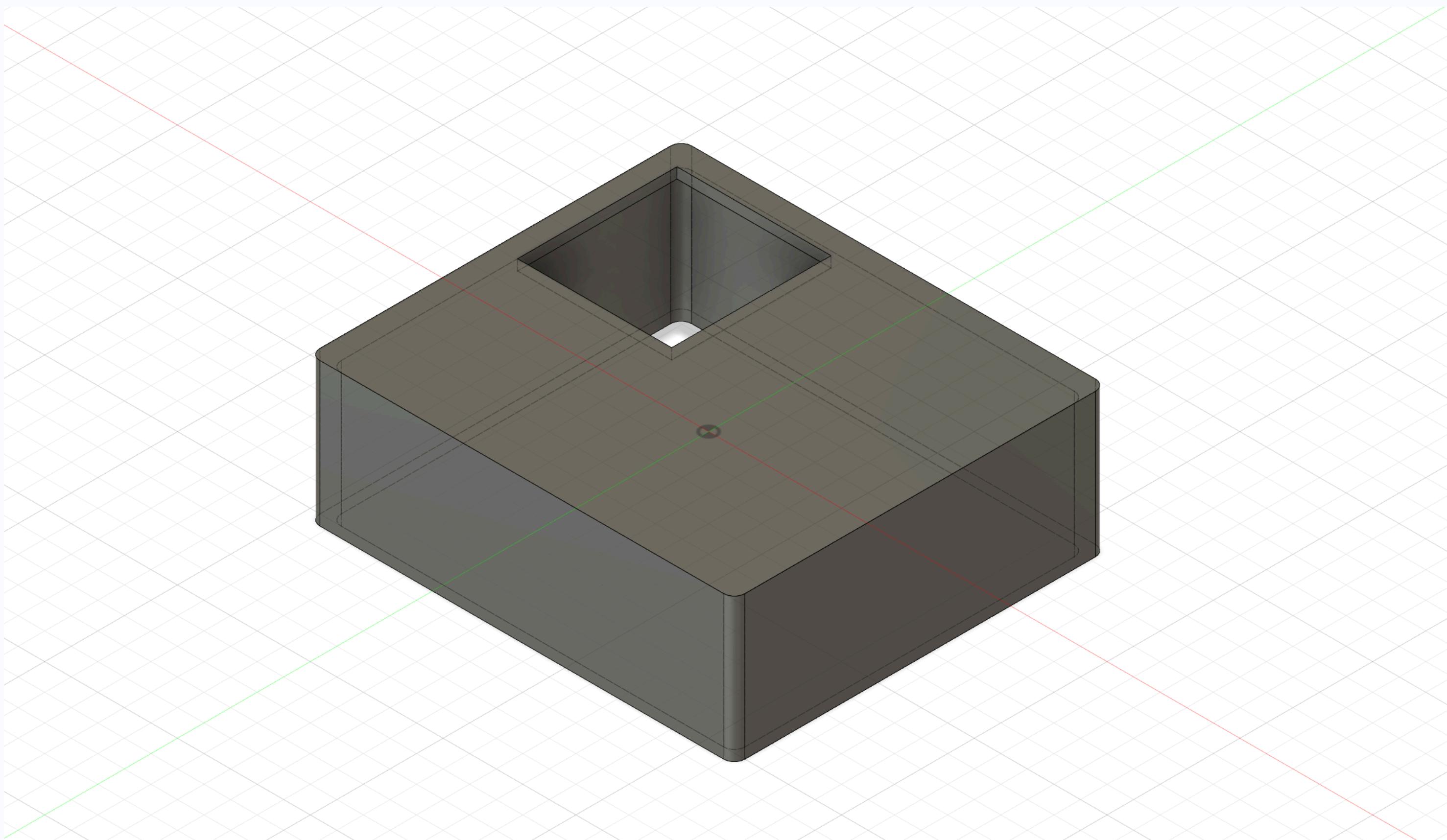


The ICM-20948 IMU captures motion data and sends it to the ESP32 MCU via I2C. The MCU runs a TinyML model to classify the movement as correct or incorrect. The result is instantly displayed on the SSD1306 screen, enabling real-time feedback without external devices.

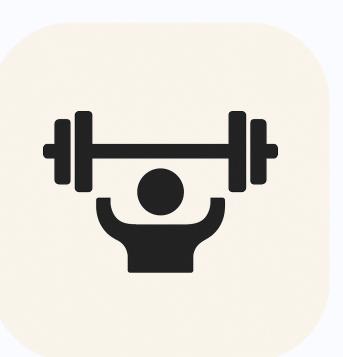
## 5 Budget



# Enclosure



# Thank You



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