

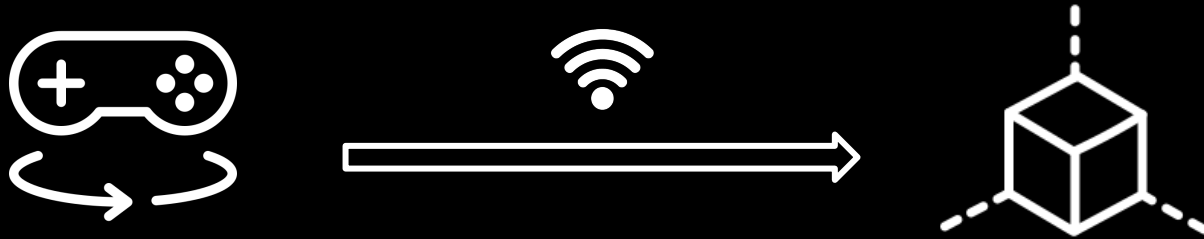
# Remotely Controlled 3D Character using **Three.js** and **TTGO** watch

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by  
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and  
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# Problem Statement

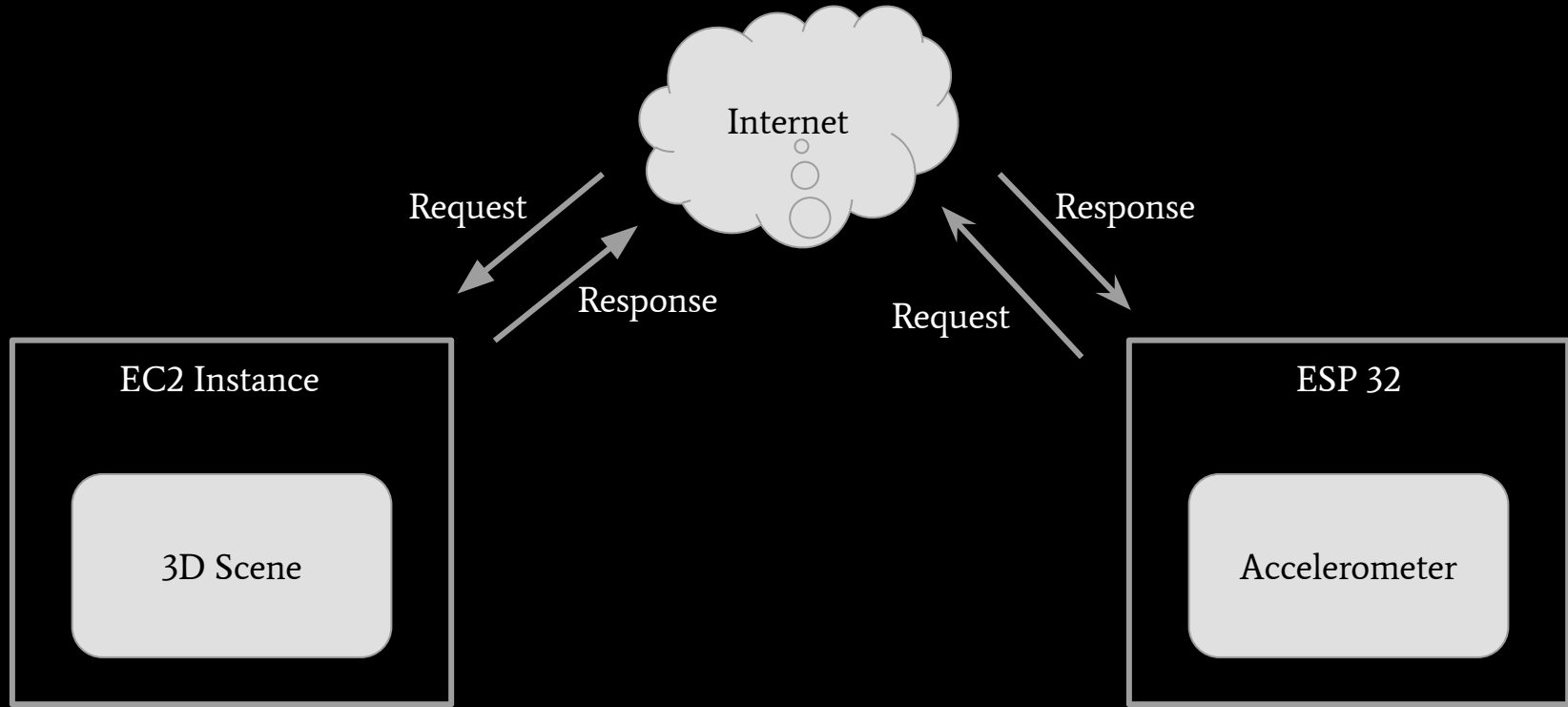
Creating a web application that seamlessly integrates the TTGO watch's accelerometer with a 3D scene, enabling real-time interaction through sensor data, aiding an immersive user experience.



# Components of the System

Web page	Controller
<ul style="list-style-type: none"><li>● Hosts on AWS EC2</li><li>● Contains files and dependencies for 3D scene</li><li>● Handles data from Controller</li></ul>	<ul style="list-style-type: none"><li>● Uses the built-in accelerometer of ESP32</li><li>● Connects to a device with hotspot for internet</li></ul>

# Component Interaction

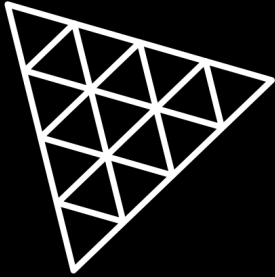


# Design trade-offs

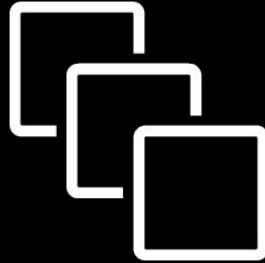
- Speed of control
  - TTGO watch integration may result in slower speed of control but it can be improved with interaction.
- Control over the 3D graphics
  - 3D graphics is a new area for us to explore resulting in less control over the character and environment.

# Tech Stack

three.js



AWS EC2



Arduino IDE



# Expected Challenges

- Noise filtering in sensor data
  - Unexpected spikes in values
- Real-time rendering
  - HTTP request being fast enough
  - Loading 3D scene real time
- Computing limits with EC2
  - EC2 handling 3D web app

# Timeline and Task sharing

9th Nov	Setting up communication between server and ESP32 - Nupoor  Installing and rendering three.js model on EC2 - Rahul
16th Nov	Collecting sensor data on EC2 - Rahul  Processing data received from Arduino - Nupoor
28th Nov	Integrating sensor data with web app



**Thank you!**