CPRE 491 Weekly Report #4

Team 11

Project Title: Smart Water Shutoff

Date: 10/24/2021

Members:

-Alex Murray– Embedded programming

-Tyler Denning - Motors and Valves

-Natalia Almeida - System Sensors

-John King - Mobile application development

-Augusto Savaris - Machine learning

-Andrew Fehr - Electronic devices and circuits

- Kangcheng Xu - Motors and Valves

What we've accomplished in the past week/what we've been researching

-Alex Murray– I helped in setting up the I2C communication to the ADC from the Raspberry Pi as well as did this weeks lightning talk.

-Tyler Denning - Assisted with fixing the valve control and routed wires and components for packaging.

-Natalia Almeida - I have been researching on how to get better data from the vibration sensor

-John King - Created the first screen of the application, began work on allowing arbitrary data to be displayed on the graph api present in the screen.

-Augusto Savaris - experimented with different data analysis techniques for a time-series data (other than a simple recurrent net) that could yield better ML model accuracy

-Andrew Fehr - Helped implement an electronic control on the valve motor

- Kangcheng Xu - make valve work and use arduino to control it

What we're planning to do in the coming week

-Alex Murray– Begin the work on the server that I meant to get done this week.

-Tyler Denning - Testing different amplification methods for better signal detection

-Natalia Almeida - work on connecting adc to raspberry pi

-John King - Chart points on the graph api and gain familiarity with it.

-Augusto Savaris - help finish setting up the data collection with the raspberry pi

-Andrew Fehr - Help with getting the adc/raspberry pi working correctly

- Kangcheng Xu - try to combine some component together

Issues we had in the previous week

-Alex Murray– Raspberry Pi was difficult to get set up to do the I2C communication with the ADC

-Tyler Denning - Got hung up on valve control, Kangcheng fixed it.

-Natalia Almeida - Having issues connecting i2c from adc to raspberry pi, looking at the adc hardware to locate the source of issue

-John King - Was busy over the weekend, so have not yet tested to see if the charting api works as expected.

-Augusto Savaris - issues with raspberry pi/adc

-Andrew Fehr - Tried different transistors to use as an electronic switch and some did not work for unknown reasons

- Kangcheng Xu - use COMS to control valve first it not work, so we use a BJT then it works pretty well