

# EE/CprE/SE 491 – sdmay26-08

## GridSAFE

### Week 9 Report

Start date - End date: 11/18/25 – 12/02/25

Client: Nellie Leaverton

Advisor: Julie Rursch

#### Team Members:

Nellie Leaverton – Hardware & Architectural Design Lead

Jason Di Giovanni – Software and Security Lead

Brant Gicante – Software and Security Assistant

Evan Booze – Hardware & Architectural Design Assistant

Kyle Maloney – Testing Lead & Design Assistant

#### Weekly Summary:

This week, the GridSAFE team focused on setting up the prototype with its base plate and plexi-glass top. The hardware team created a custom base plate for the coin building and have started to fit a thin sheet of plexi-glass onto the base plate in order to hold the building. The software and cyber team successfully trained a prototype model using the logs from the Canadian Institute for Cybersecurity and is finalizing integrations with the other programs.

## Past week accomplishments:

### **3D Modeling and Printing – Nellie Leaverton**

- Measured and Custom Designed a 3D base plate for the prototype (Coin Building)
  - Created a base plate design schematic
  - Collaborated with team members to finalize on final measurements
  - Collaborated with team members to finalize prototype materials, 3D printed base and plexiglass top.
- Picked Up pi purchase from ETG
- Send out ETG purchases for plexiglass materials for final design.

### **AI Training – Jason Di Giovanni**

- Continued training AI model in XGBoost
- Started integrating AI with checker program
- Started work on allowing HTTPS so RPI can send and receive data from AI

### **Testing & Prototype Development– Brant Gicante**

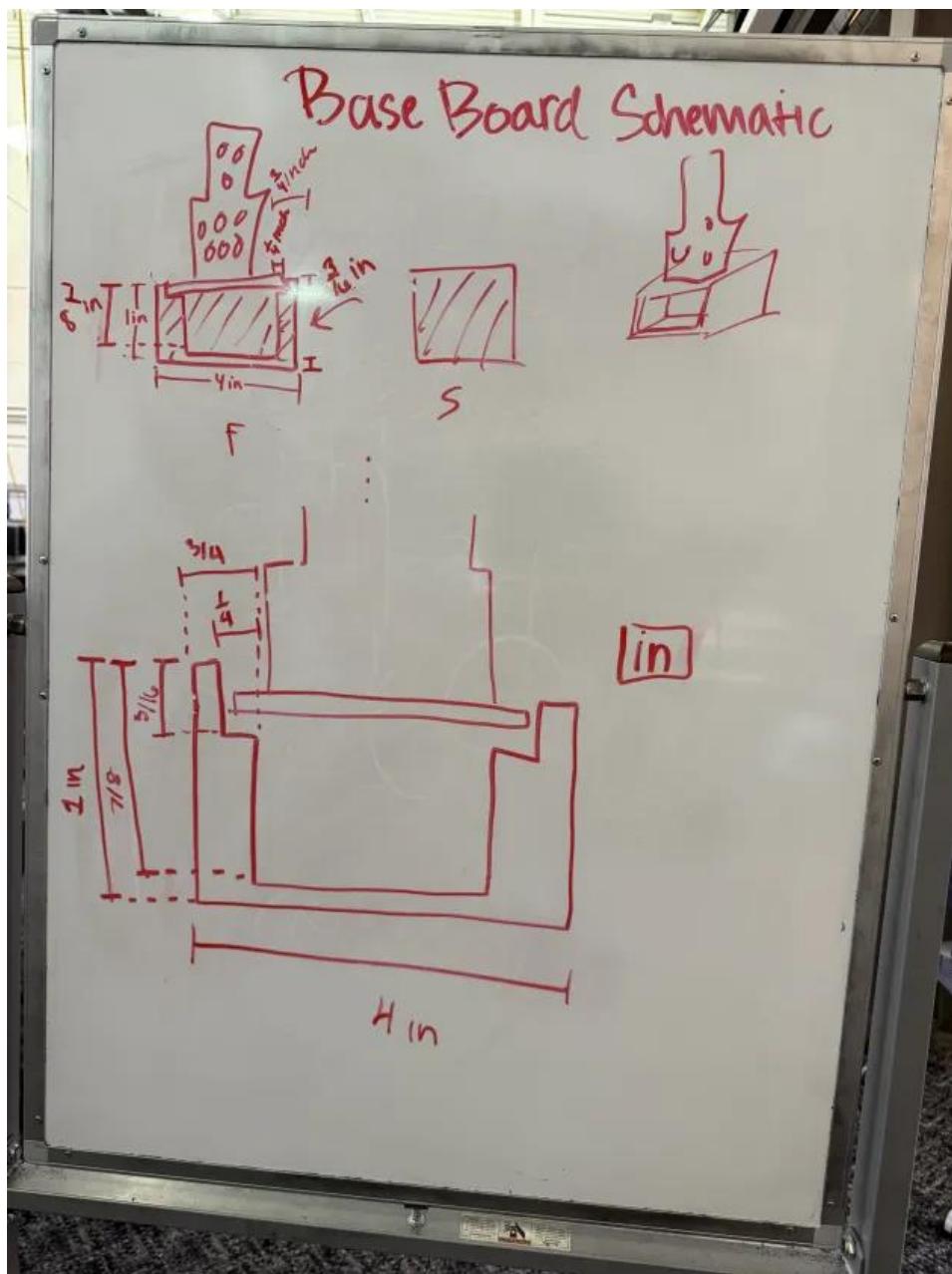
- Connected raspberry pi to hardware/circuits
  - Assisted in the testing of LED and Raspberry pi
  - Assisted and learned the connection and communication from the raspberry pi to lights
  - Got one set of lights turning on and changing color
  - Could not turn on our high-powered LED's
- Worked and assisted with the prototype to demo with this next week
- Final Presentation work
  - Worked on slides and design documents to assist in presenting
  - Worked on documenting our progress to display

### **3D Modeling and Prototype Testing – Evan Booze**

- Made modifications to Parts Studio model and Empire State Building model for printing
  - Added additional windows
  - Created a center hole to run wiring into
- Tested New LEDs on their ability to illuminate the interior of a test building
- Worked on presentation slides for project to in preparation to present to faculty

Citations/Research:

Pictures of custom base board schematic:



**Pending issues:**

- A team member was absent for the week, and as a result the team was unable to access the required python scripts. And was unable to fill out their section of the document.

**Individual contributions:**

<b><u>NAME</u></b>	<b><u>Individual Contributions</u></b>	<b><u>Hours this week</u></b>	<b><u>HOURS cumulative</u></b>
Nellie Leaverton	<ul style="list-style-type: none"><li>• Created 3D base plate</li><li>• Made a Medard's run for plexiglass</li><li>• Send ETG new purchase request.</li></ul>	4	52
Brant Gicante	<ul style="list-style-type: none"><li>• More models finished/fixed</li><li>• Prototype adjustments DONE</li><li>• Wrote down usable CVE's to demo with</li><li>• Sample communication between pi and lights</li></ul>	4	41
Evan Booze	<ul style="list-style-type: none"><li>• Made modifications to Parts Studio</li><li>• Made modifications to Empire State Building</li><li>• Tested LEDs ability to light interior of test building</li><li>• Worked on faculty presentation</li></ul>	6	36
Jason Di Giovanni	<ul style="list-style-type: none"><li>• AI Training</li><li>• AI Integration</li></ul>	5	41

**Plans for the upcoming week:**

- **Brant Gicante:**
  - Complete the prototype demo with everyone
    - Get a working connection with the Software and PI
    - Connect the baseplate and a few models
    - Connect lights to a baseplate with a model or two
    - Connect PI and lights
    - Record it working
      - Use for presentation video
  - Start increasing the abilities of the prototype (over break)
    - Assist in the checker and output
    - Startup the network (servers now allocated to us)
    - Create users/emails for realism
- **Evan Booze:**
  - Finish making modifications to the last of our 3D models
  - Finish working on faculty presentation slides
  - Rehearse parts for faculty presentation
  - Print more 3D models at SIC
  - Acquire plexiglass/acrylic to make base plate for project prototype
- **Nellie Leaverton:**
  - Start Wood Working Training, and Lazer cutting training
  - Purchase through PCB.
  - Continue to update the GridSafe user manual.
- **Jason Di Giovanni:**
  - Fully connect AI to rest of project
  - Finish allowing devices to connect over HTTPS