

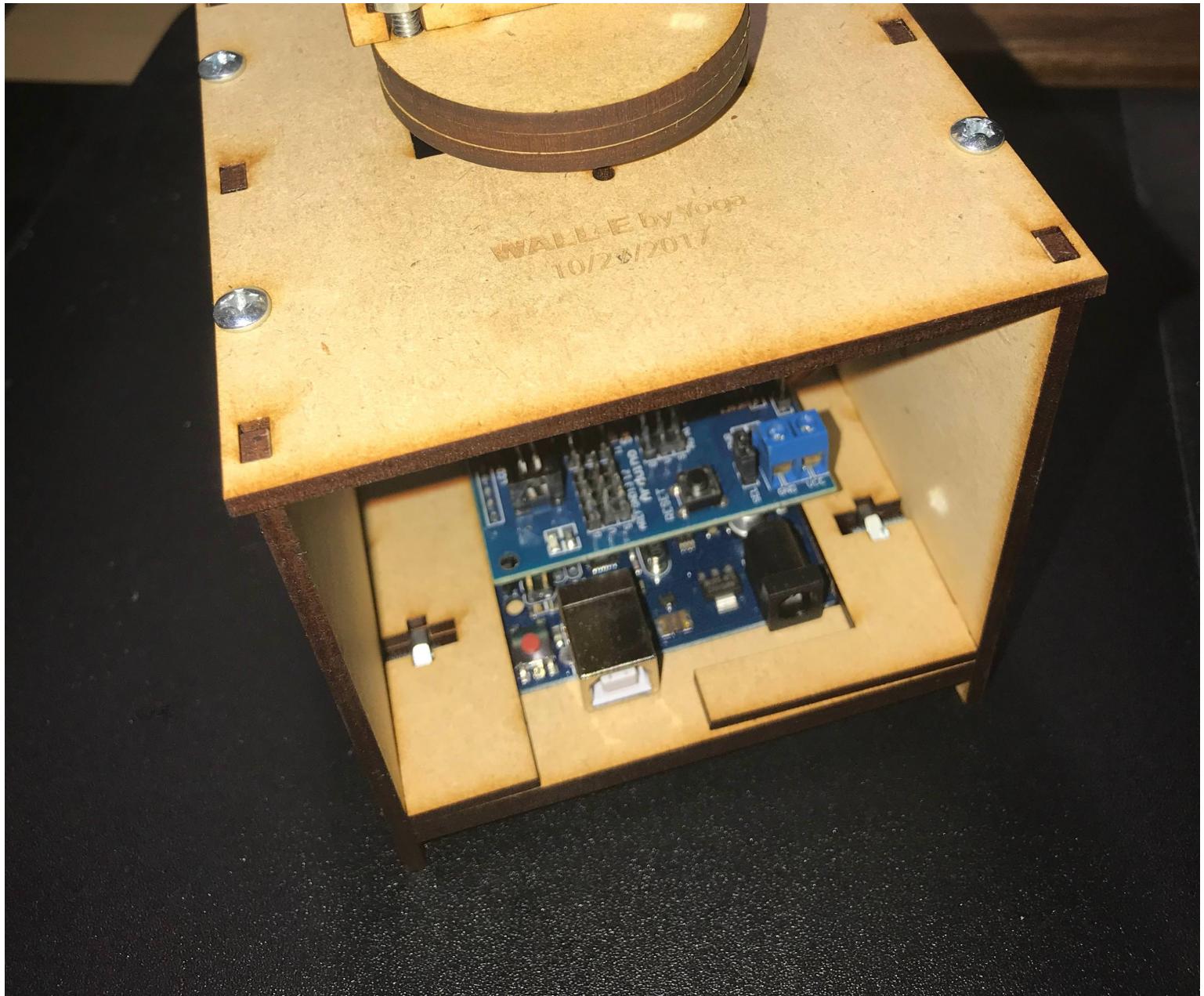
# WALL-E

The project's name is WALL-E because it looks like WALL-E robot.



WALL-E Poster





My project WALL-E

The project has two parts:

- Code
- 2.5D / 3D Bracket

## Code

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I wrote two parts of similar code.

The first part is requirements.

And the second part is like the first part, but I add input and speech recognition by python

that means user can control it by using input or speaking.

There are three python files:

- run.py
- draw.py
- findMic.py

## How to run?

First, install python dependencies

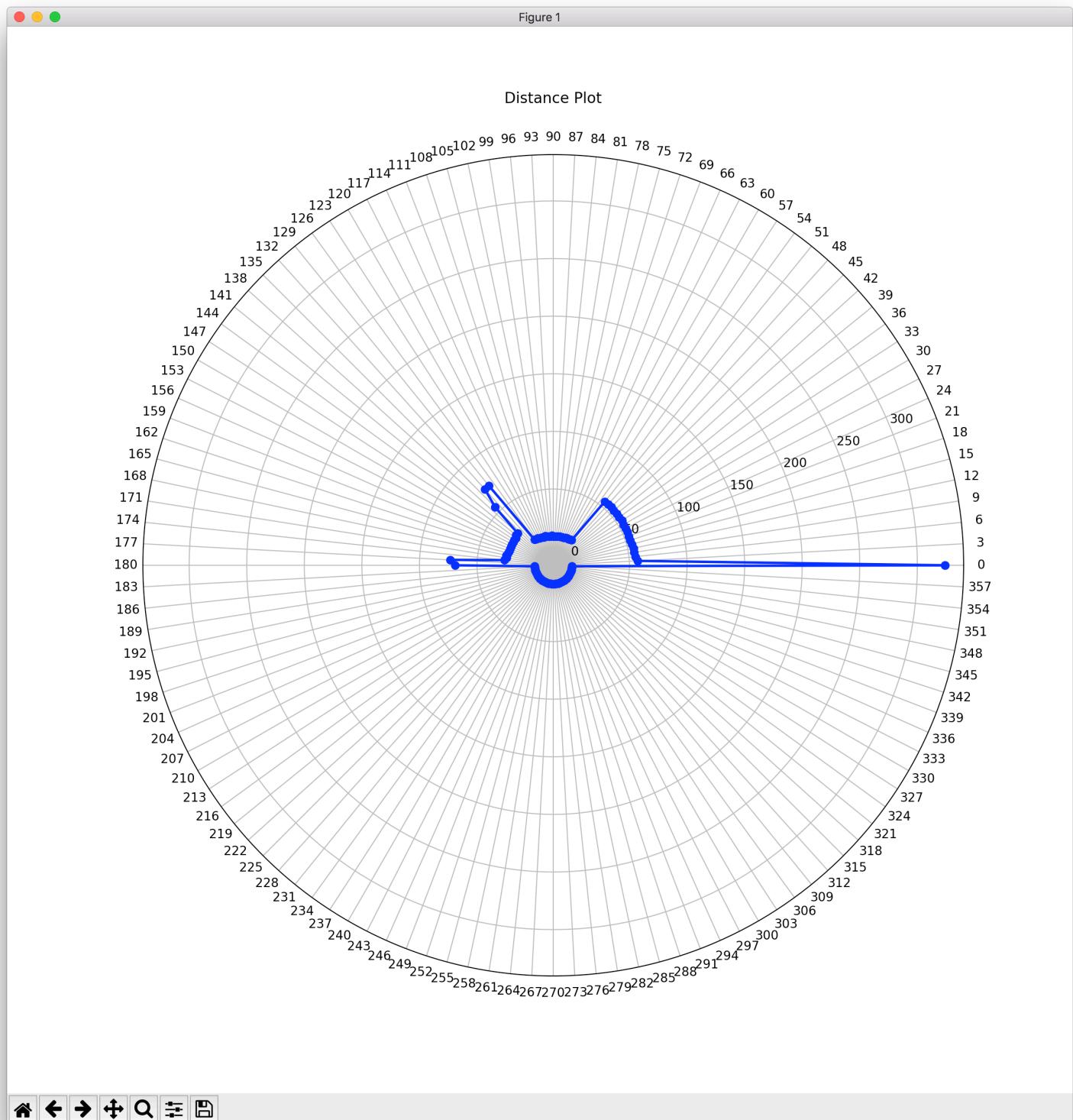
```
python3 -m pip install pyserial
python3 -m pip install SpeechRecognition
python3 -m pip install -U matplotlib
```

Then, run `findMic.py` to find microphone index in `run.py` line 42. Also, you should change line 7 in `run.py`. After, you can decide which input, such as, if you want to use typing, you should uncomment line 71 to 85 and comment line 38 to 66, otherwise, if you want to speaking, you should uncomment line 38 to 66 and comment line 71 to 85.

Then, input `python3 run.py` in your terminal, you can input some commands:

- begin
- stop
- right
- left

When you input `begin`, we should wait it scan around. Then, you can see `result.csv` file in the same directory. Last, input `python3 draw.py` to generate a plot by the csv file.

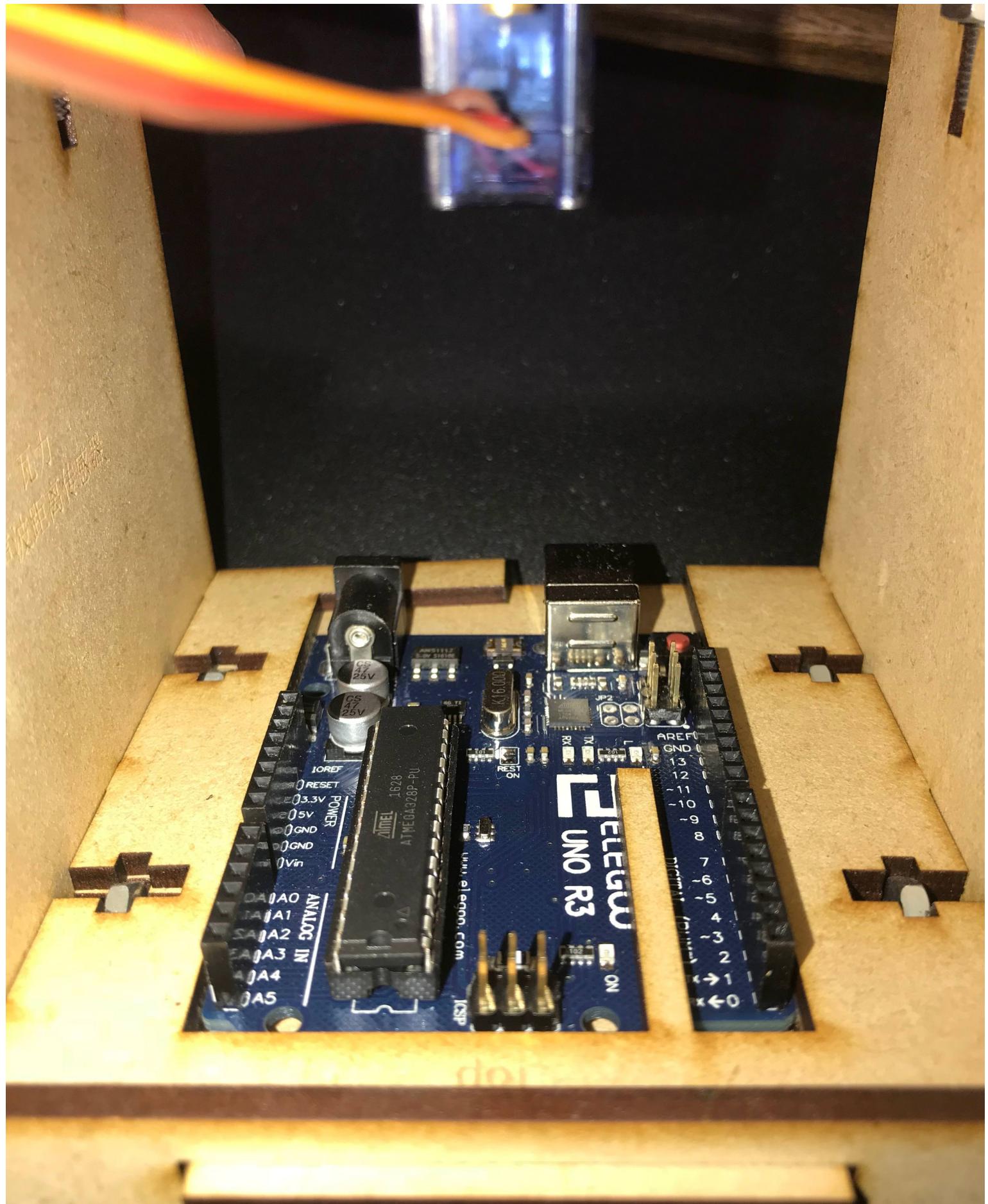


## 2.5D / 3D Bracket

### 2.5D Bracket

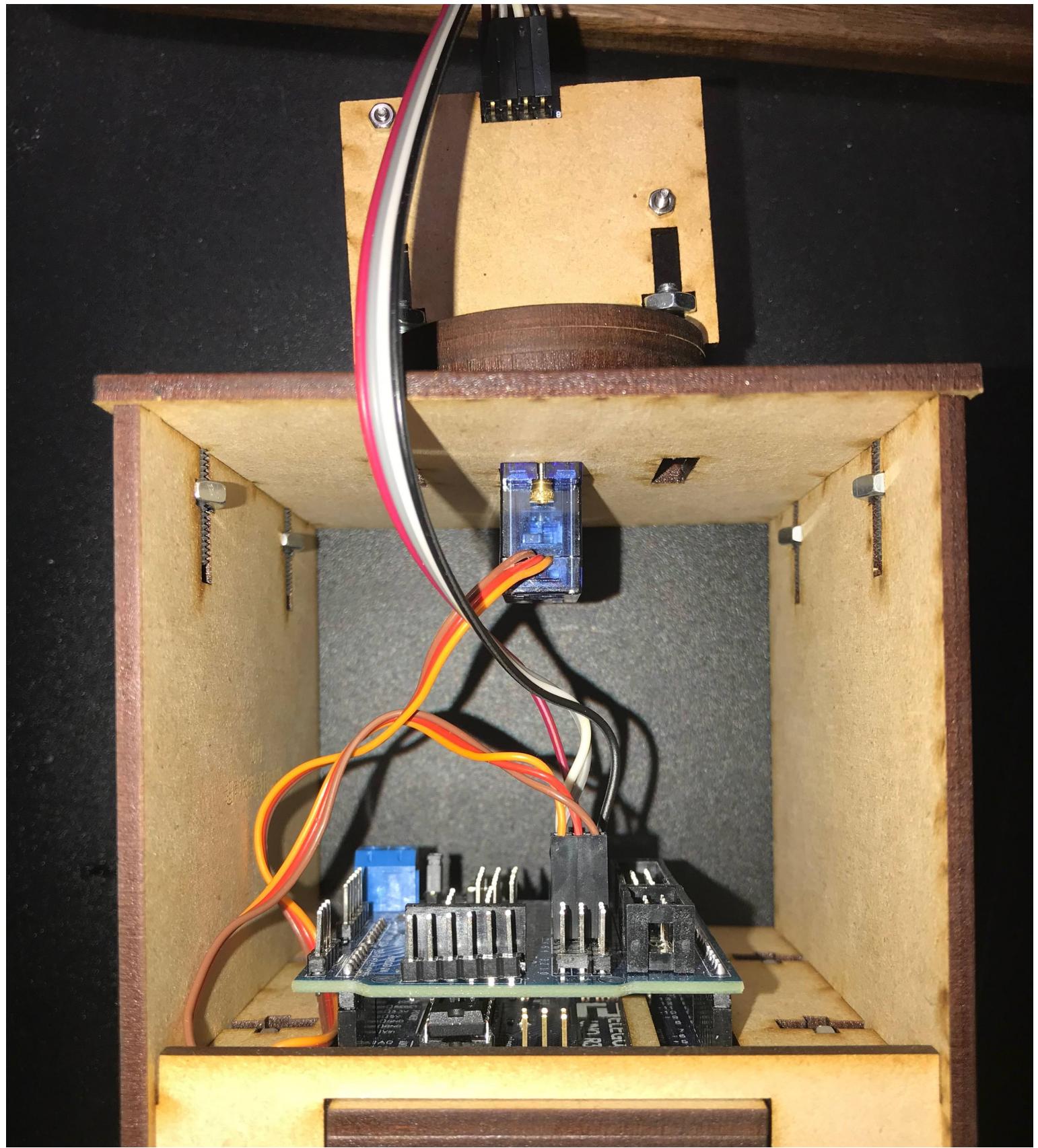
It has a stand can hold Arduino board. There has three board can fix the Arduino board and

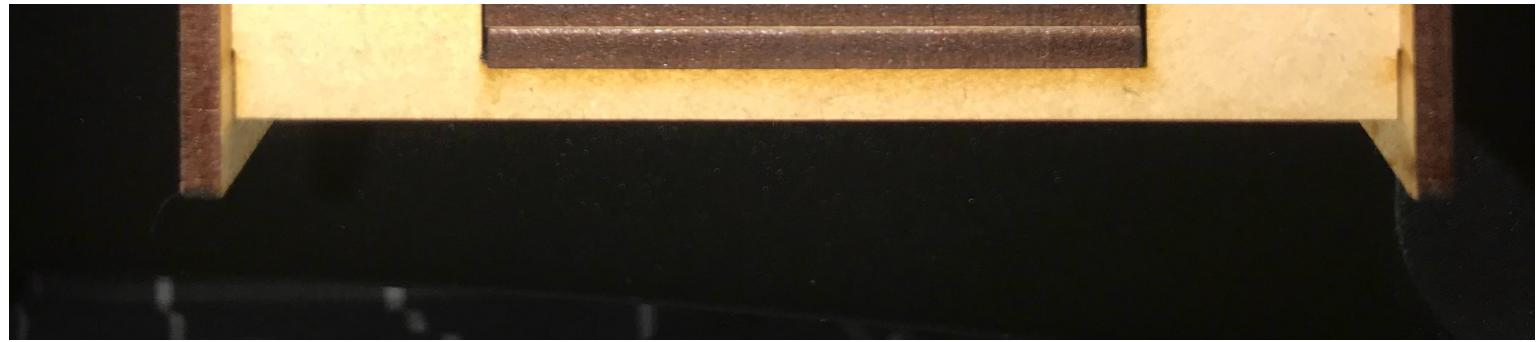
the three boards making the structure firm. Also, it has a little bar can make it stay there.





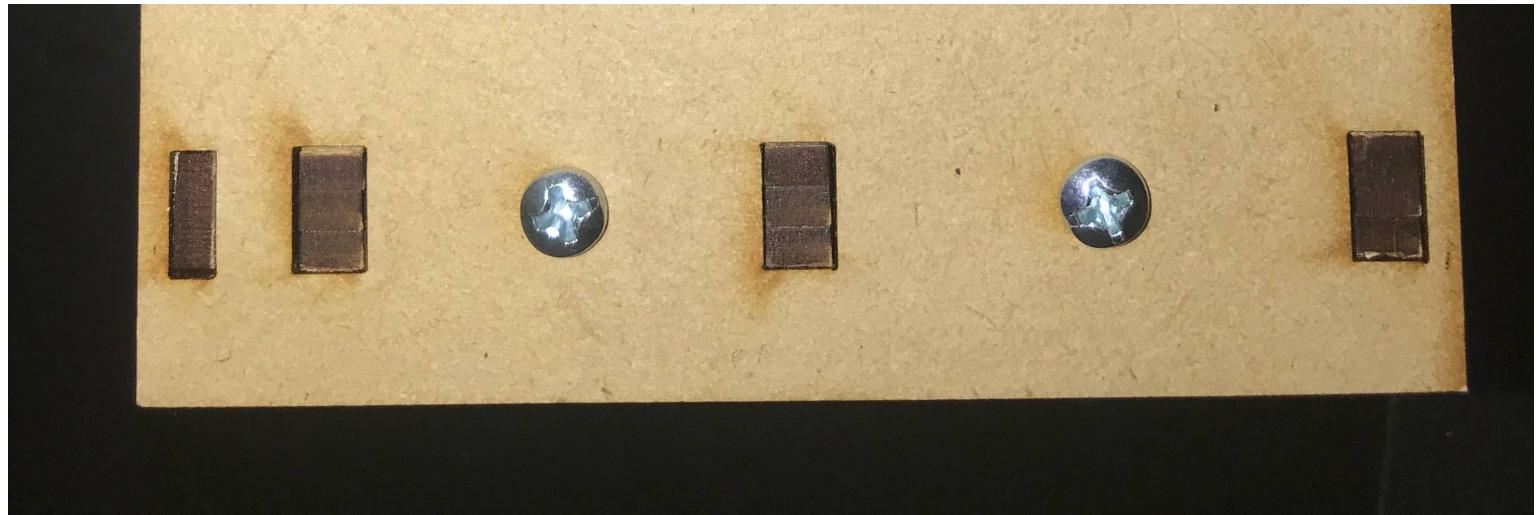
A Little Bar





Back Side

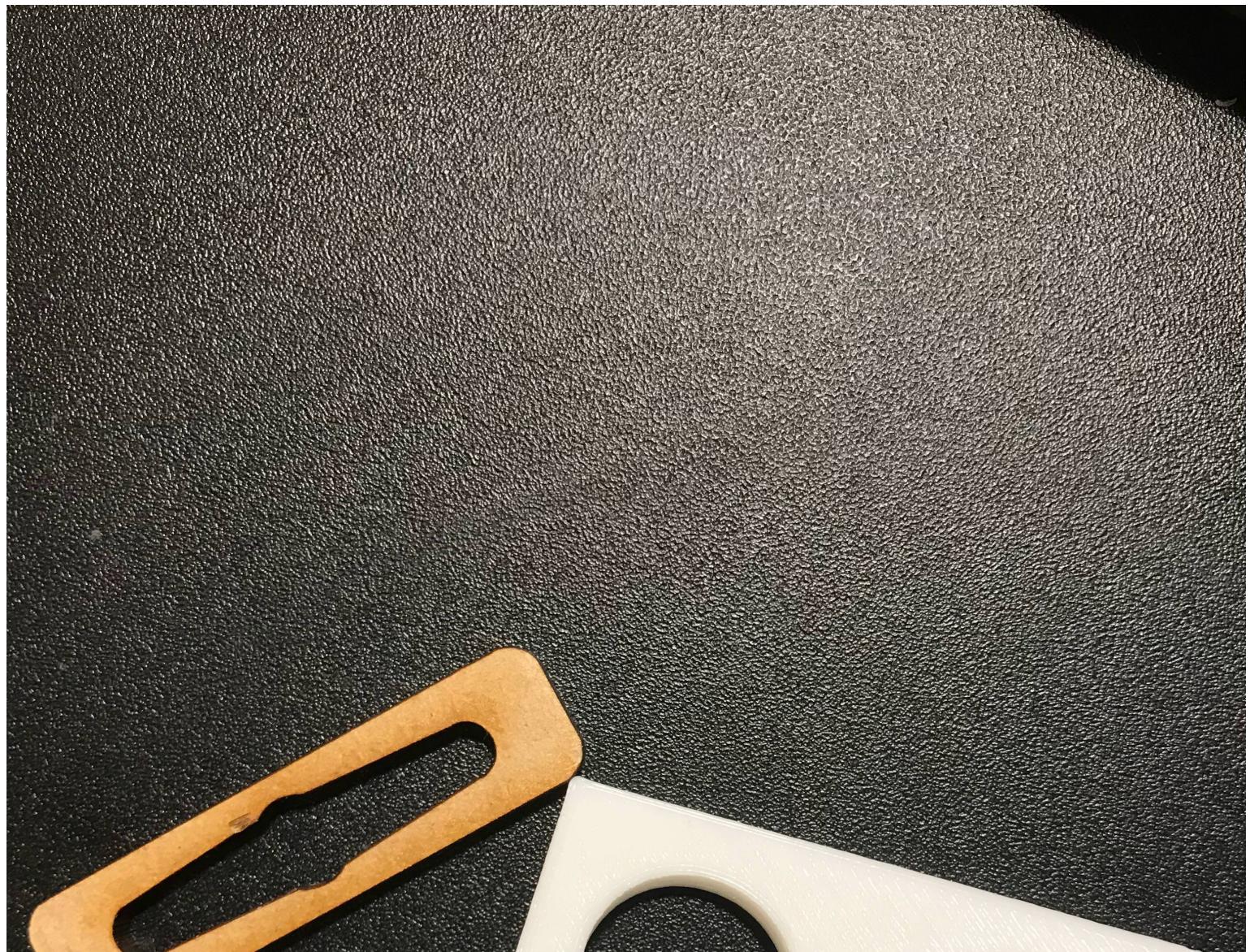




Right Side

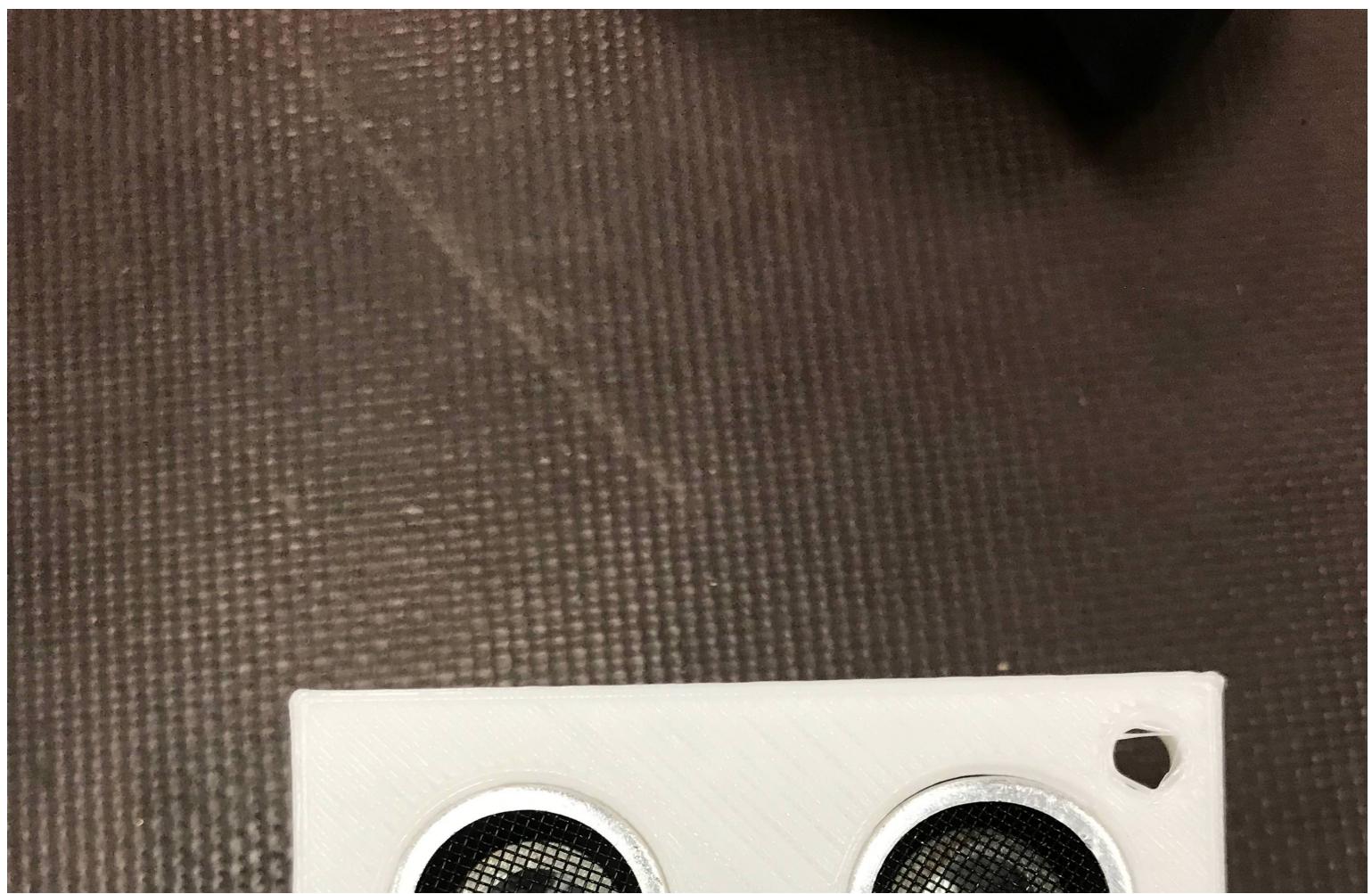
## 3D Bracket

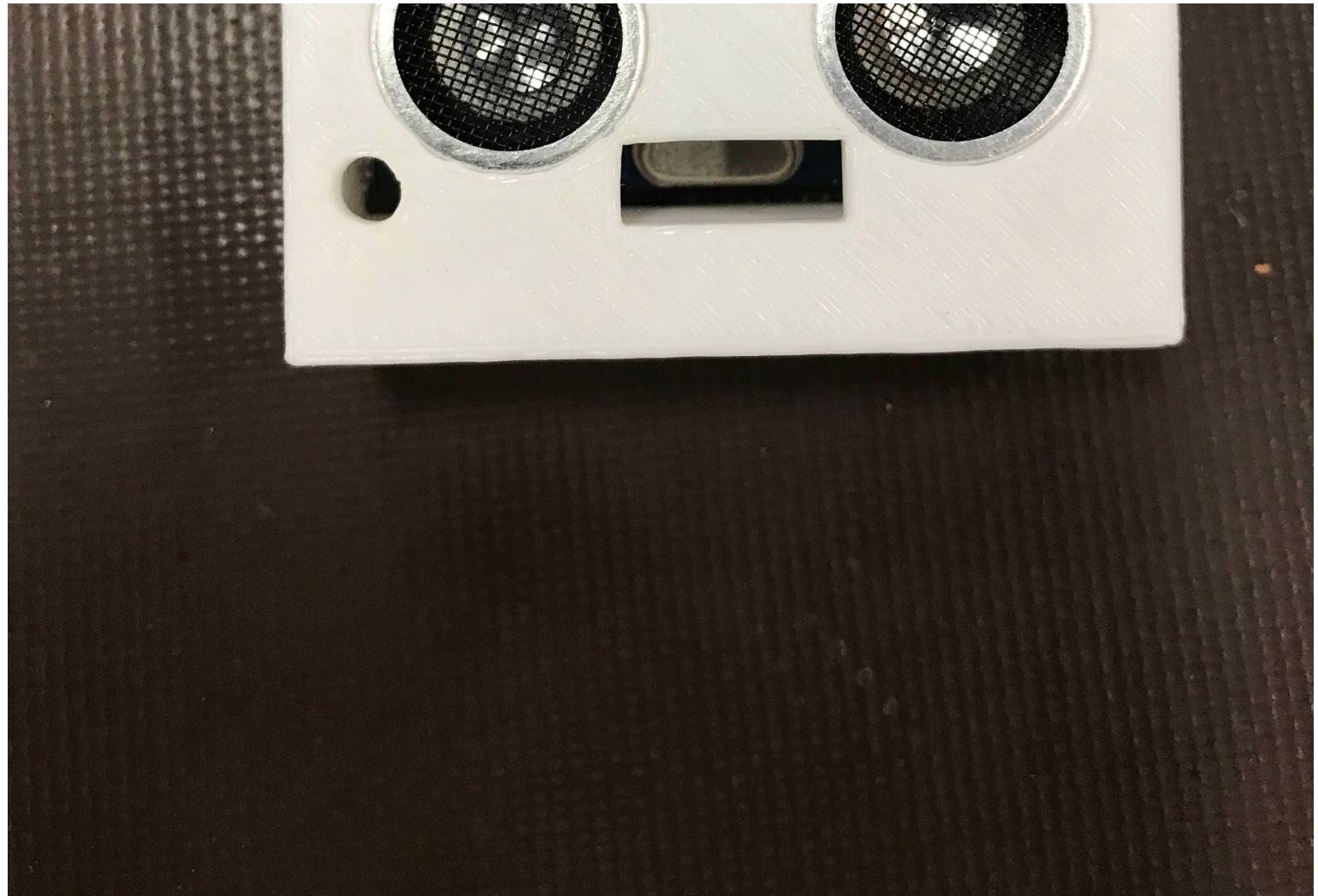
The 3D Bracket, it has two parts, one is ultrasonic sensor holder, and other one is stand.





Stand and Holder





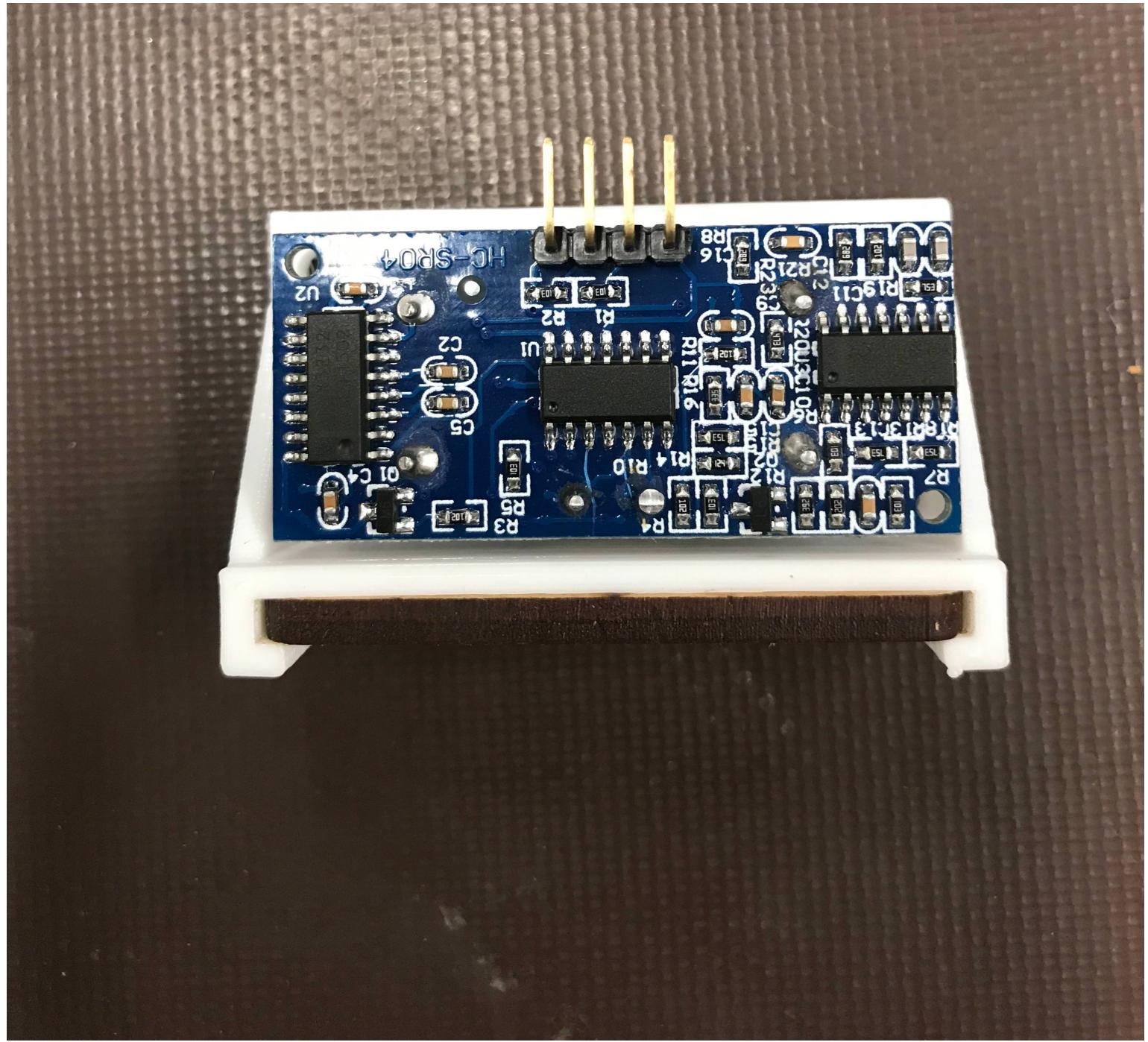
Front Side



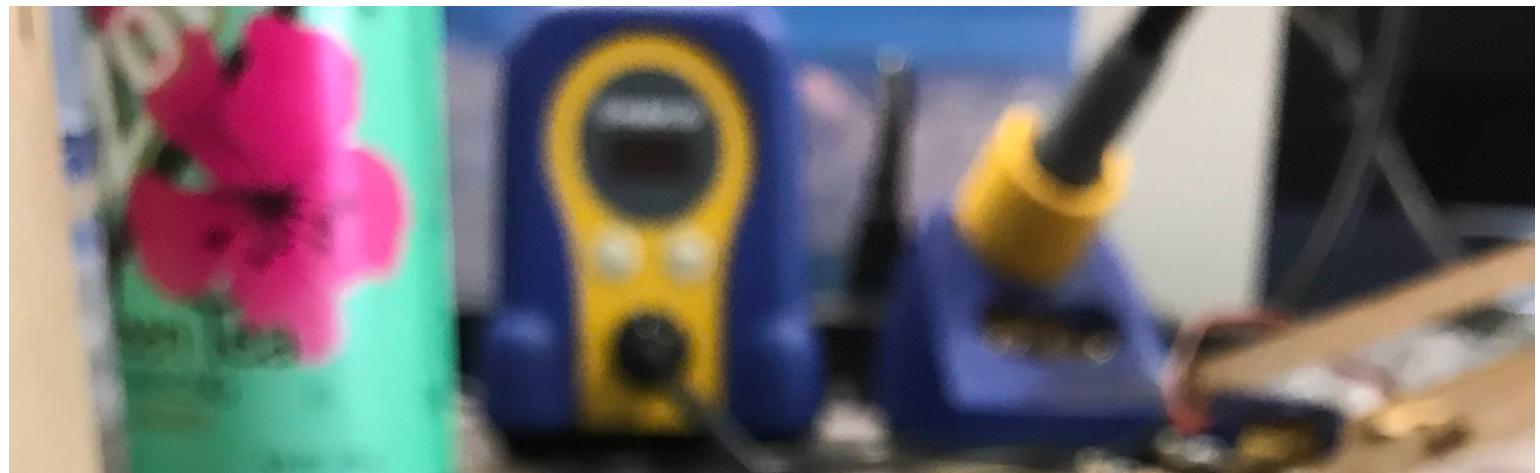


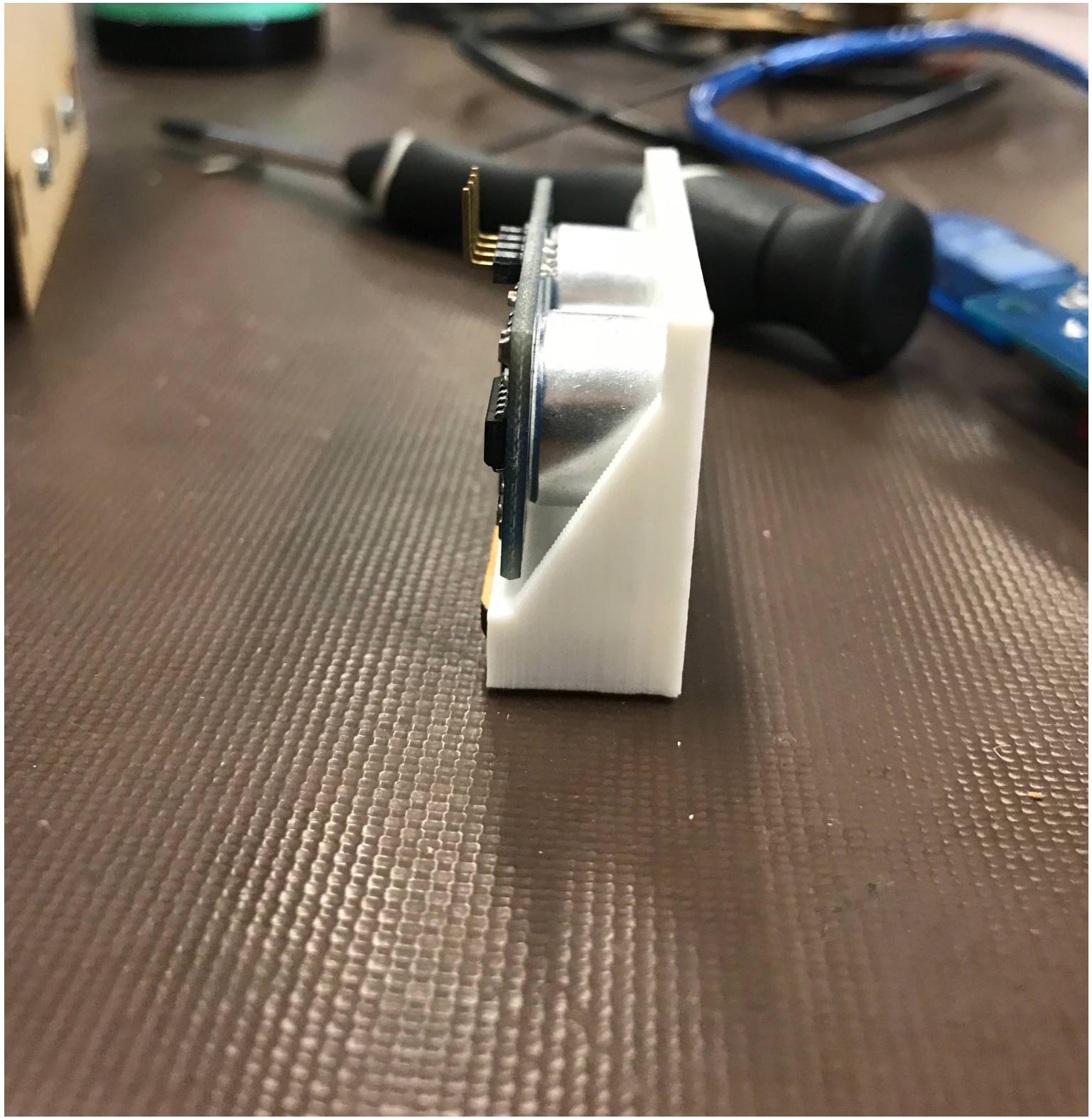
Bottom Side





Back Side





Right Side

## **Extensions:**

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1. Using command control ultrasonic sonar.
2. Different visualization by using matplotlib

3. Stronger 2.5D Bracket, it has Arduino board stand.

## References

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ISTA 303: Assignment 2, Ultrasonic Sonar with Visualization

Speech Recognition using Google Speech API

WALL-E Poster