

LuminLeaf

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OUR TEAM



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PROBLEM

Perceiving emotions is tough:

Adults are not allowed to express their emotion frankly. This constraint can lead to misunderstandings and a lack of emotional support.

Soothing negative emotions is difficult:

To address this issue, we propose developing a method to visualize emotions effectively. This approach aims to not only increase individuals' awareness of their own emotional states but also to foster a supportive environment where others can understand and respond to these emotional cues more empathetically.



METHODOLOGY

INPUT

People's skin sweating is used to measure the emotion condition. This sweating response is linked to emotional states like stress or excitement.



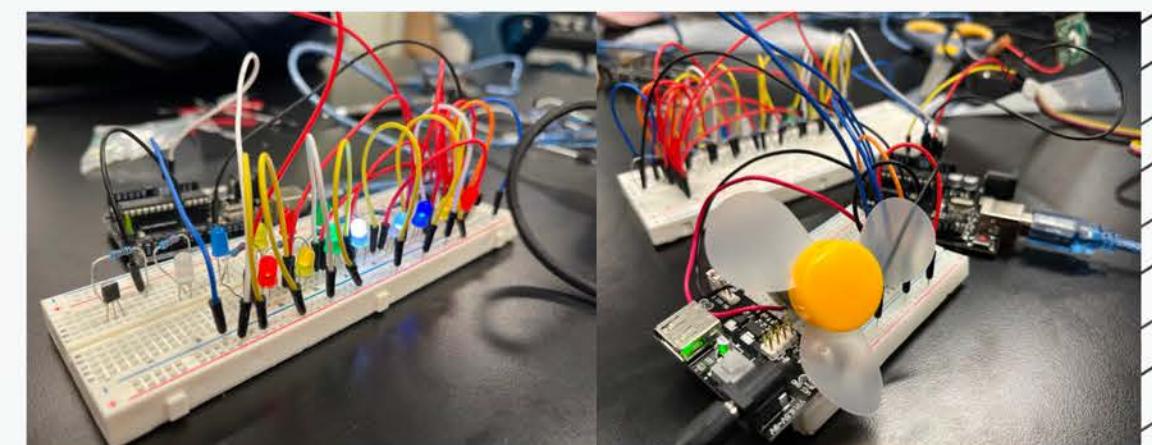
SENSOR

GSR, or Galvanic Skin Response, is used to measure the skin's electrical conductance, which changes with moisture levels driven by the autonomic nervous system.



OUTPUT

Plant with illumination: LED lightings with different colors and modes to visualize people's emotion status. A fan is used to help stressed people to do meditation for claming down.



DATA COLLECTION

DATA COLLECTION PROCESS

The screenshot shows a Jupyter Notebook interface with multiple tabs open. The active tab is 'GSR-Copy.ipynb' containing the following code:

```
[4]: data_count = 0 # 初始化数据点计数

try:
    while True:
        line = ser.readline().decode('utf-8').strip() # 读取串口数据
        if line: # 确保读取到的数据不为空
            timestamp = datetime.now().strftime('%Y-%m-%d %H:%M:%S') # 获取当前时间戳
            gsr_value = int(line) # 将读取到的数据转换为整数
            df = pd.concat([df, pd.DataFrame({'Timestamp': [timestamp], 'GSR_Value': [gsr_value]}), ignore_index=True])
            print(f"({timestamp}, {gsr_value})")
            data_count += 1 # 增加数据点计数

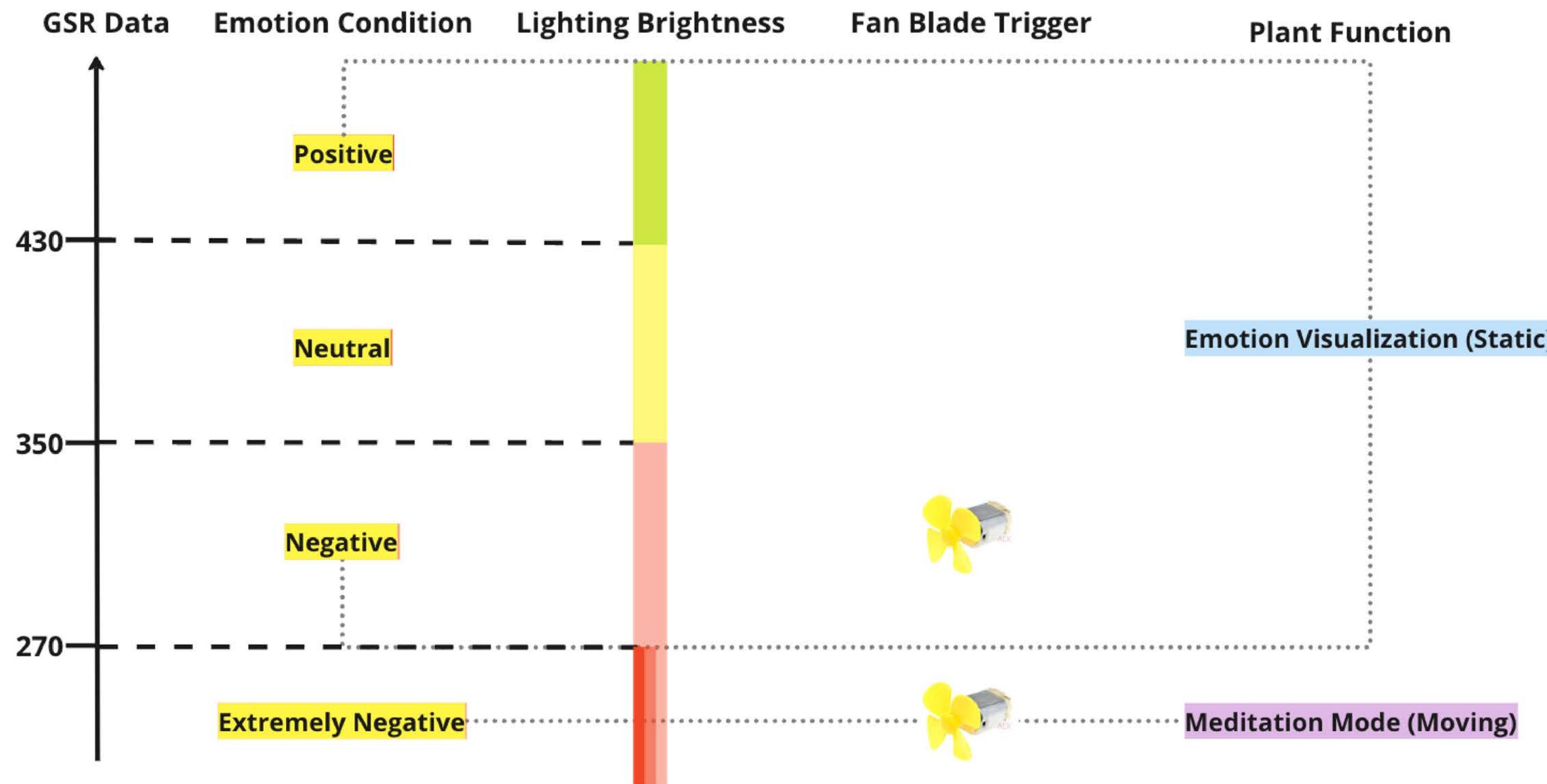
            # 每收集100个数据点，保存数据到CSV
            if data_count % 100 == 0:
                df.to_csv(file_path, mode='a', header=False, index=False)
                print(f"Saved 100 records to {file_path}")

        time.sleep(1) # 每隔1秒记录一次数据
except KeyboardInterrupt:
    # 按下Ctrl+C后，关闭串口并保存所有收集的数据到CSV
    ser.close()
    df.to_csv(file_path, mode='a', header=False, index=False)
    print(f"Data saved to {file_path}")

2024-04-09 15:56:43, 672
2024-04-09 15:56:44, 672
2024-04-09 15:56:45, 672
2024-04-09 15:56:46, 671
2024-04-09 15:56:47, 671
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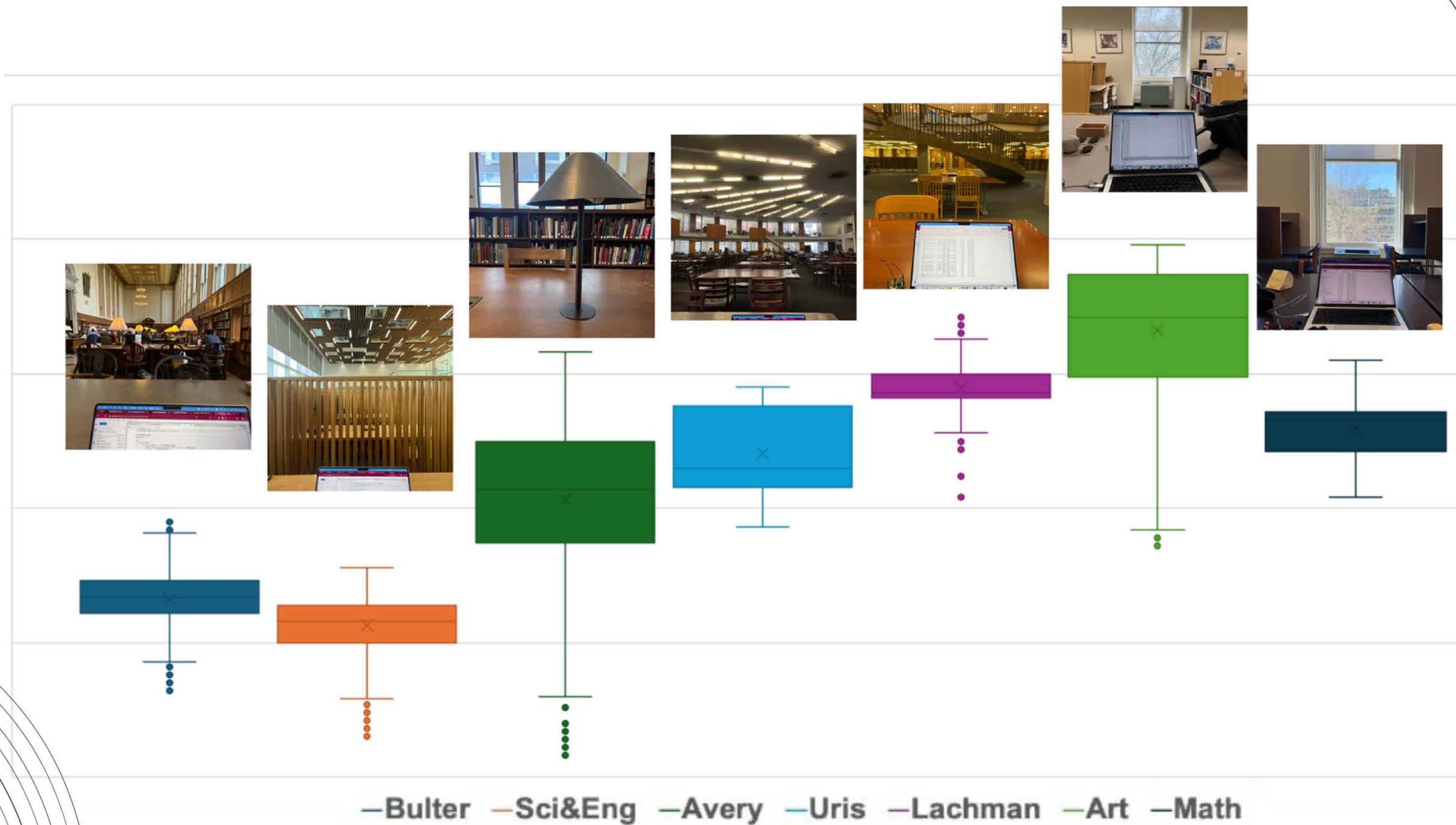
DATA STANDARD



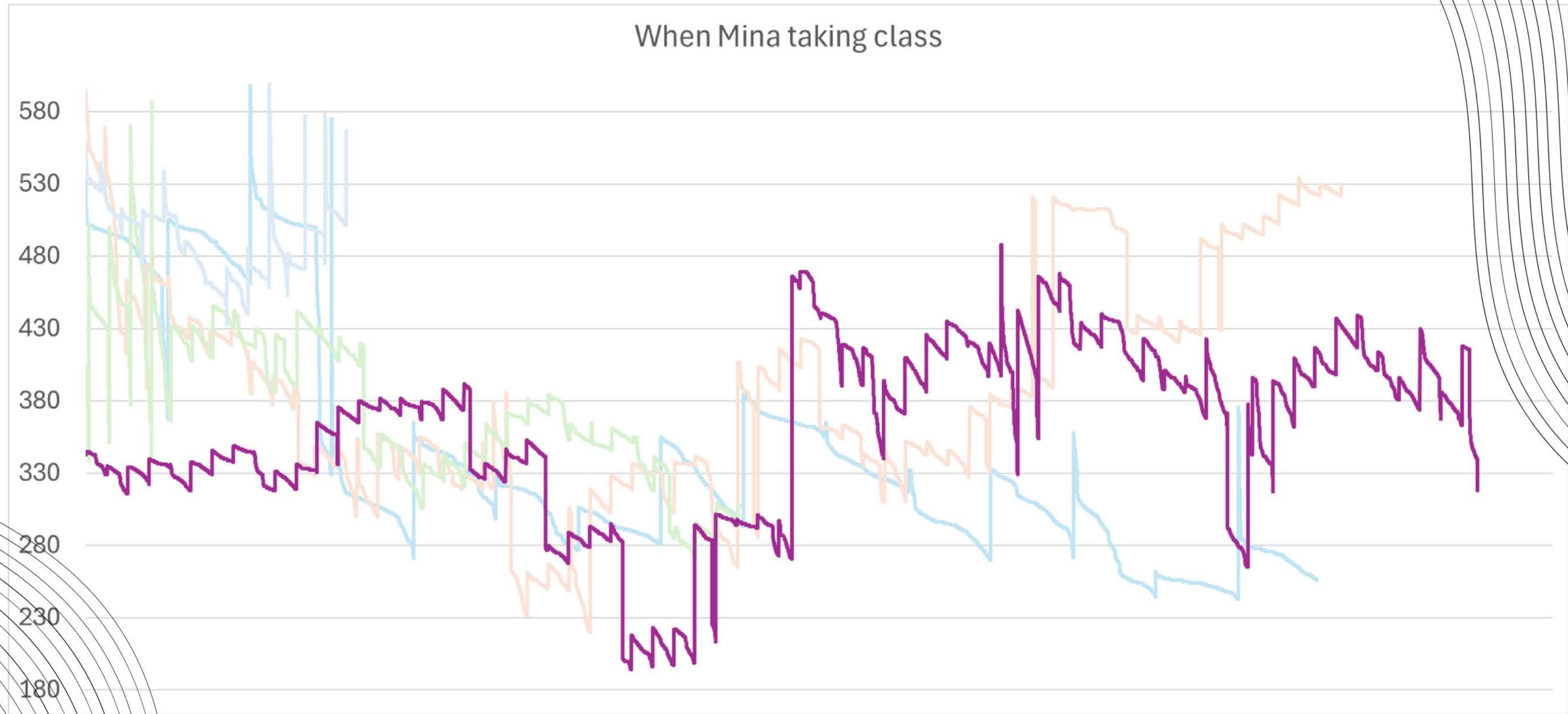


DATA & ANECDOTES

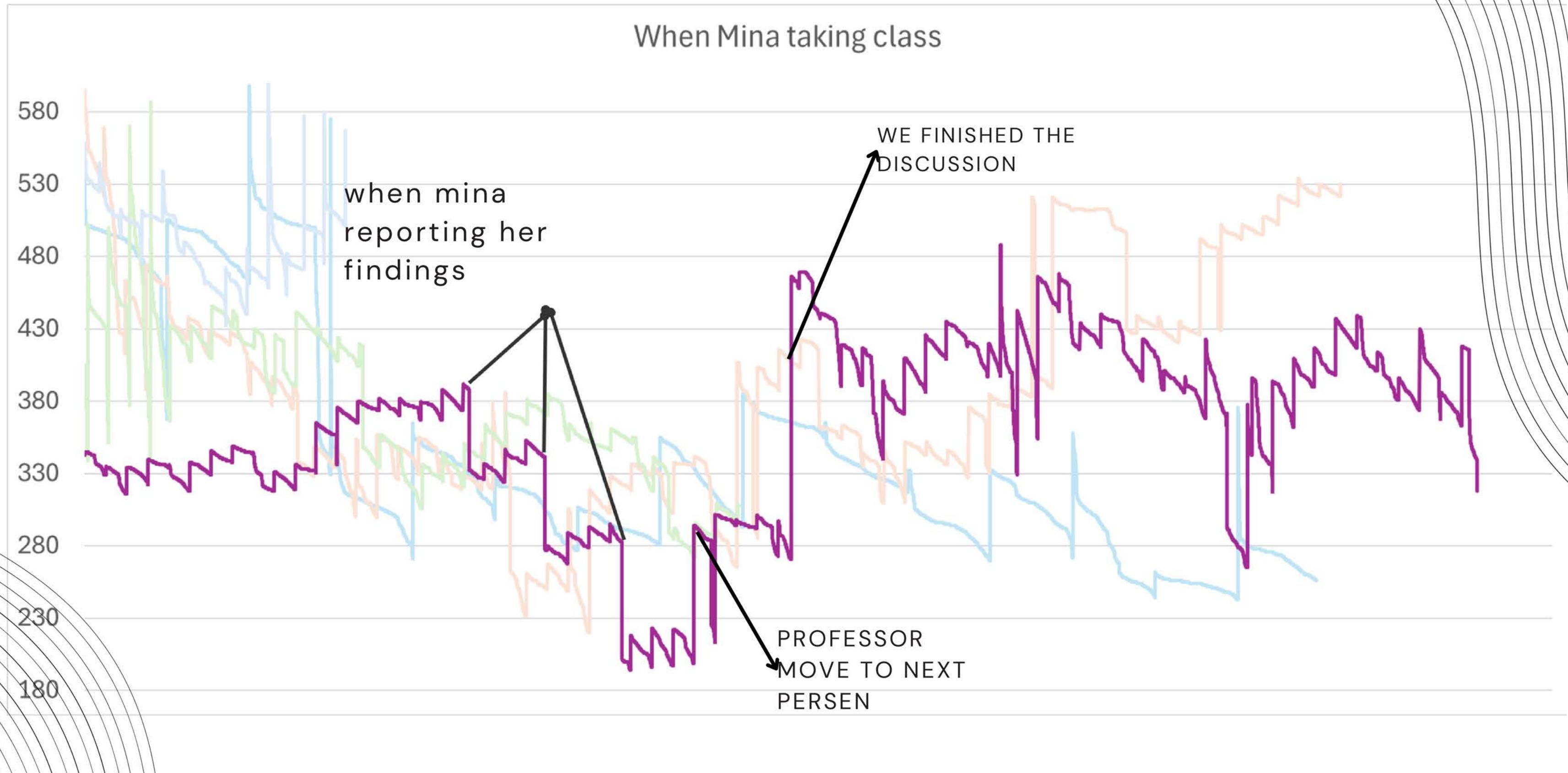
WHEN HONGQIAN STUDYING IN DIFFERENT LIBRARIES



WHEN MINA TAKING CLASS



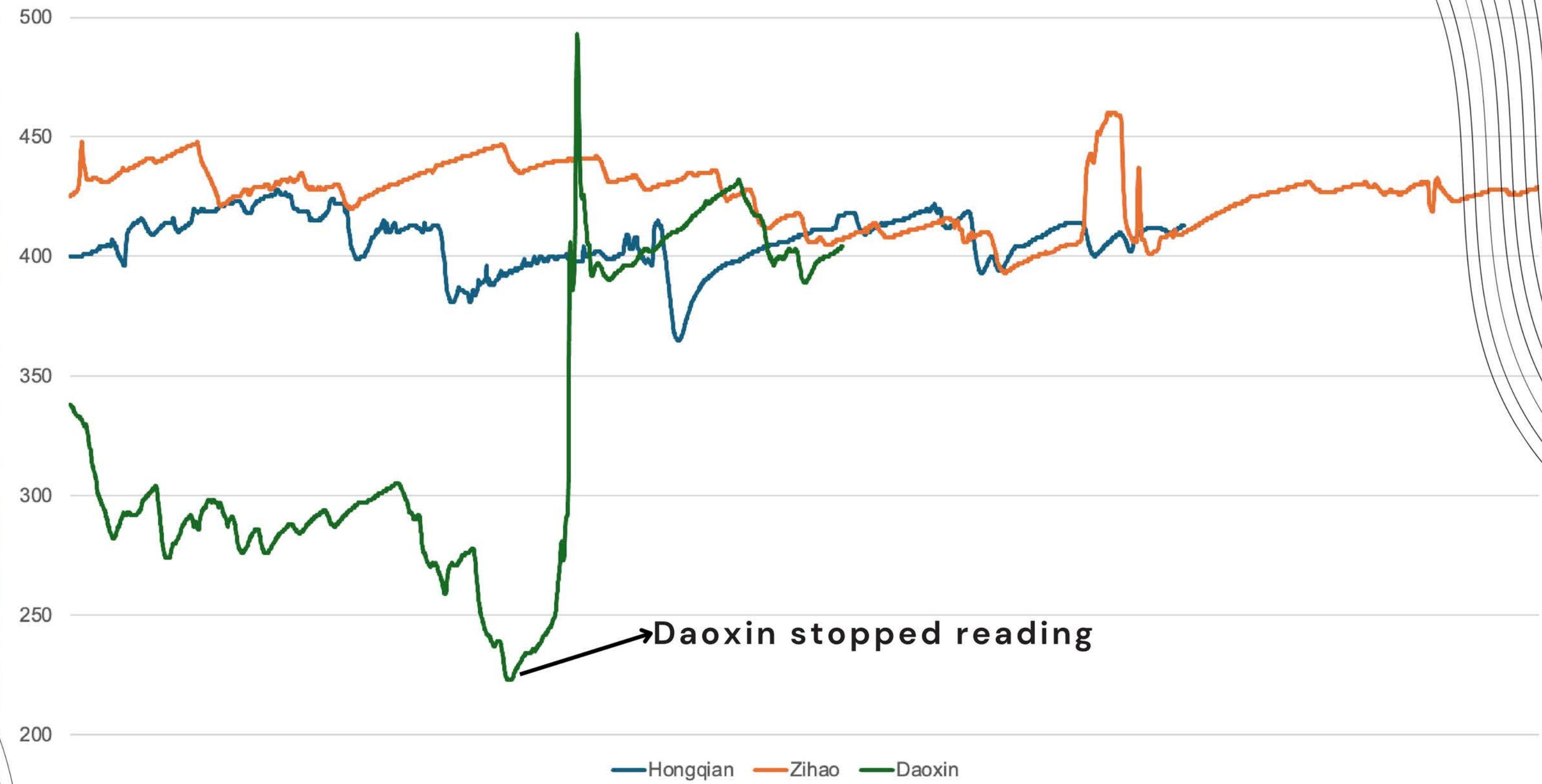
WHEN MINA TAKING CLASS



WHEN DAOXIN&HONGQIAN&ZIHAO STUDYING IN ENGINEERING LIBRARY

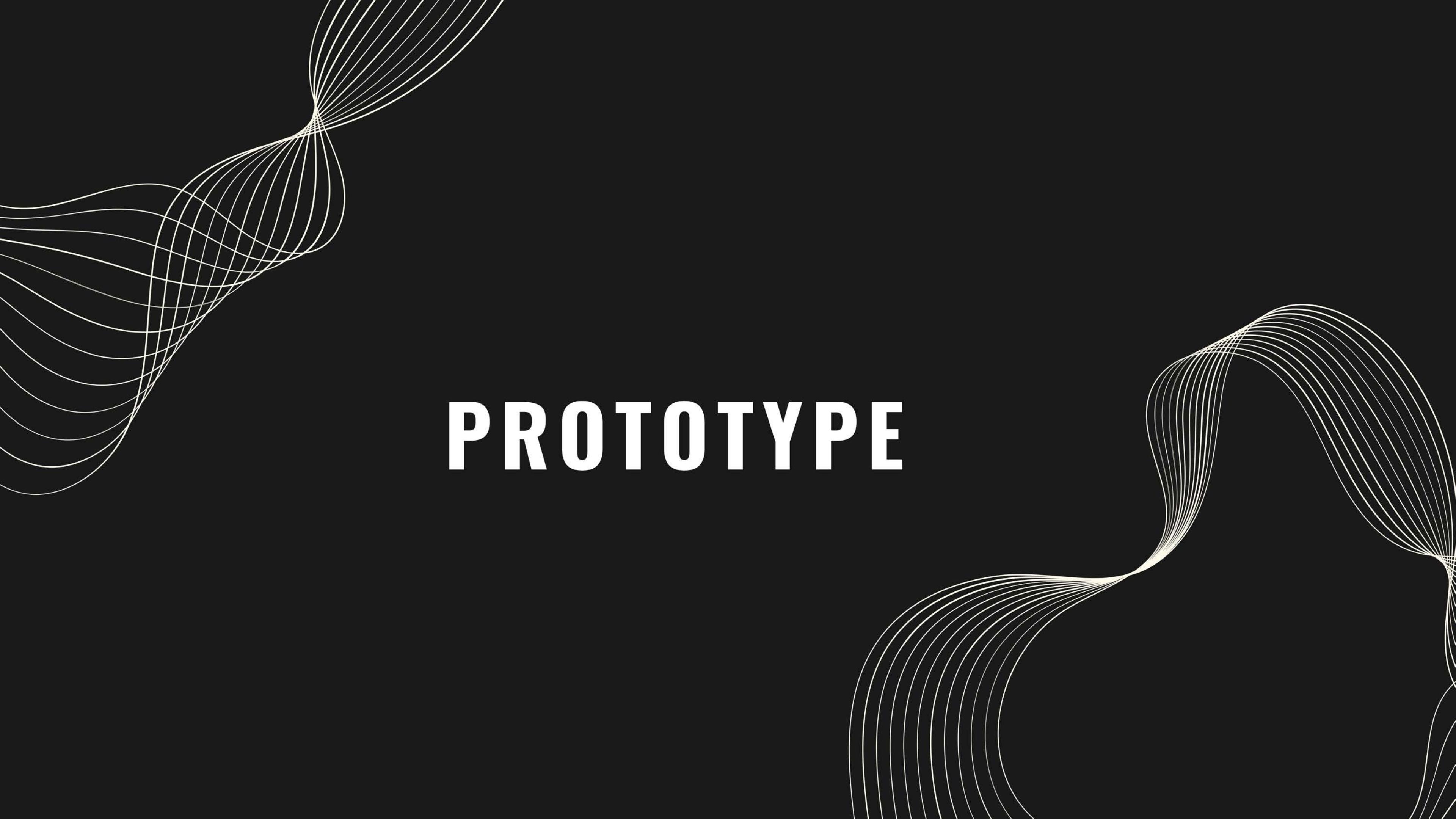


Studying in Sci&Eng Library



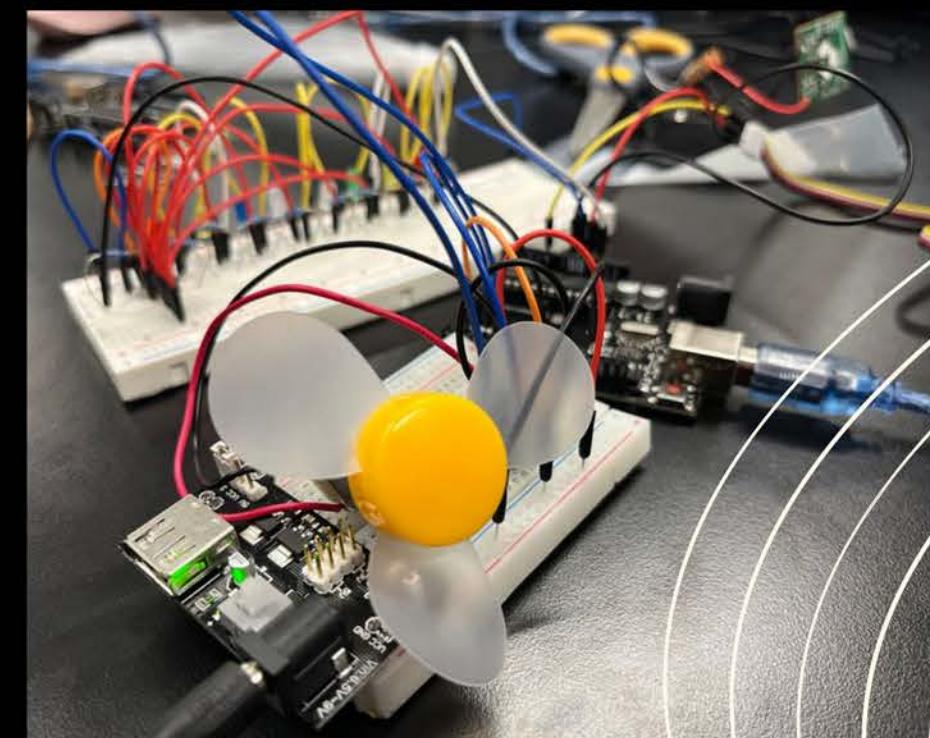
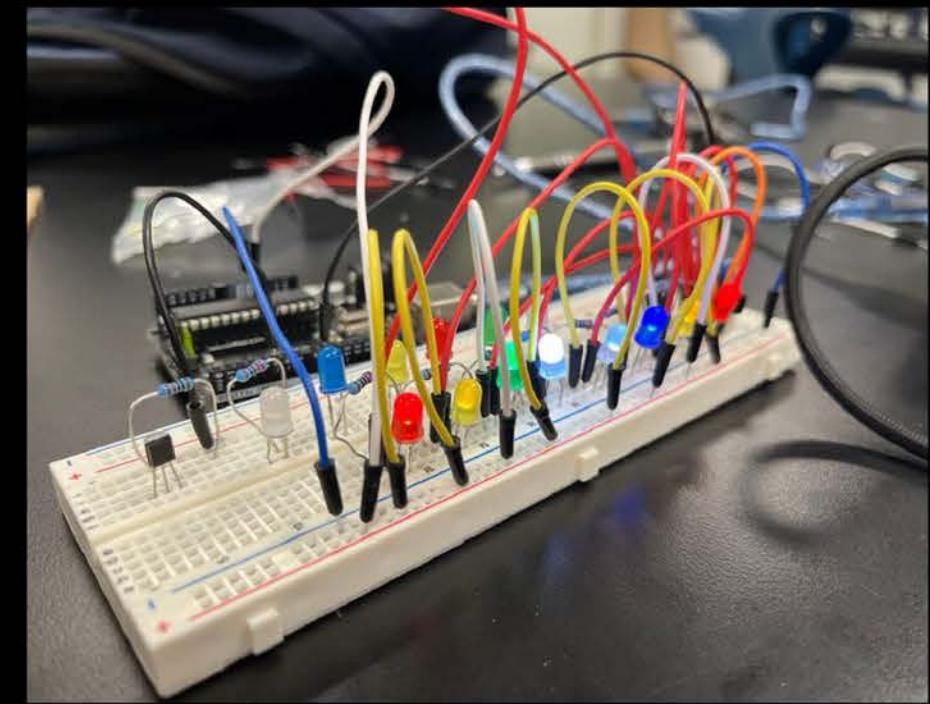
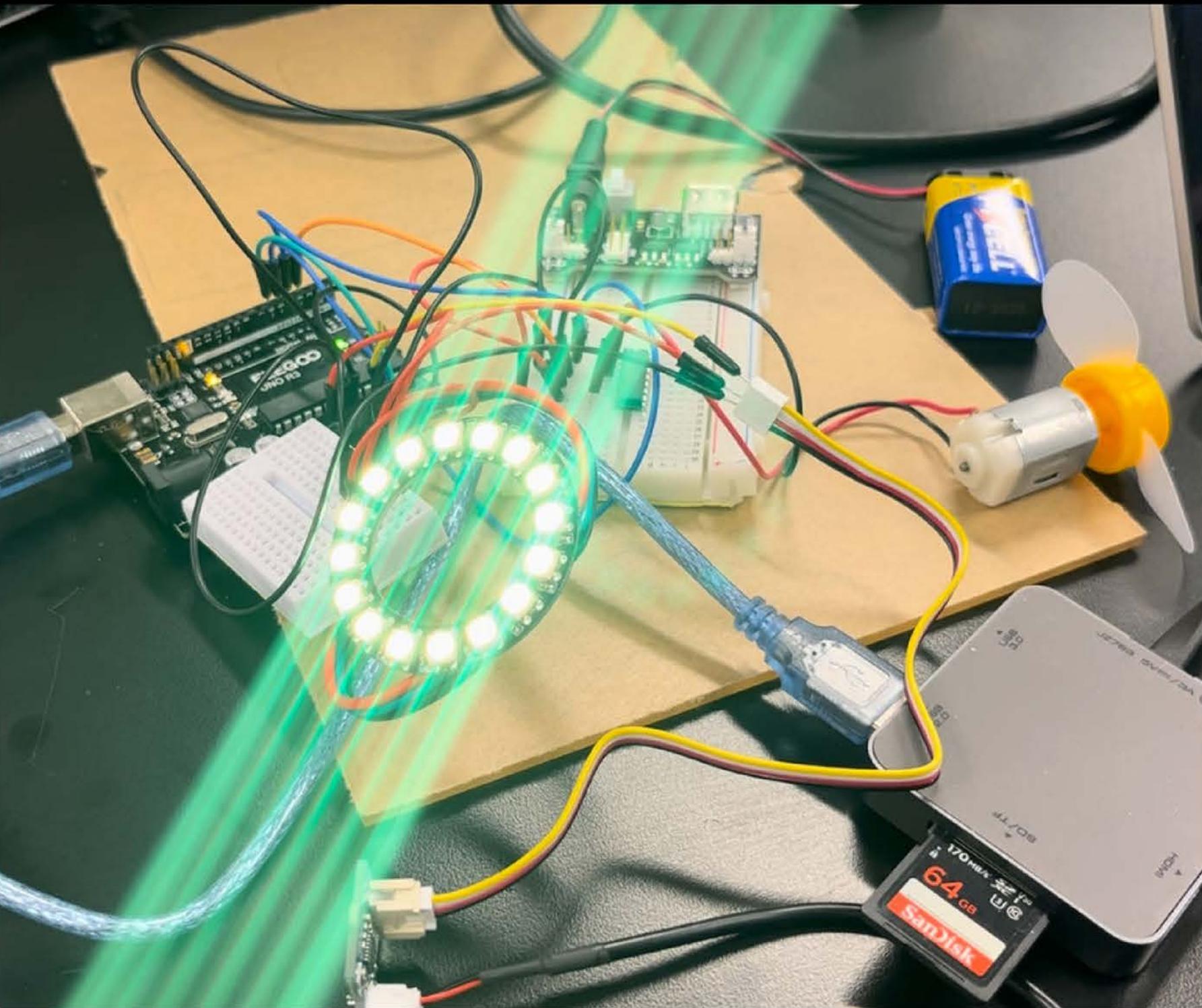
FINDINGS: INPUT DATA ANALYSIS

- Environments and events have impacts on people's emotional states; but events have more prominent effect on people's mood.
- When GSR's value is low, it means that the person is in negative emotional state(anxiety, nervous..); when GSR's value is high, the person is in positive mood(relaxation, happiness)

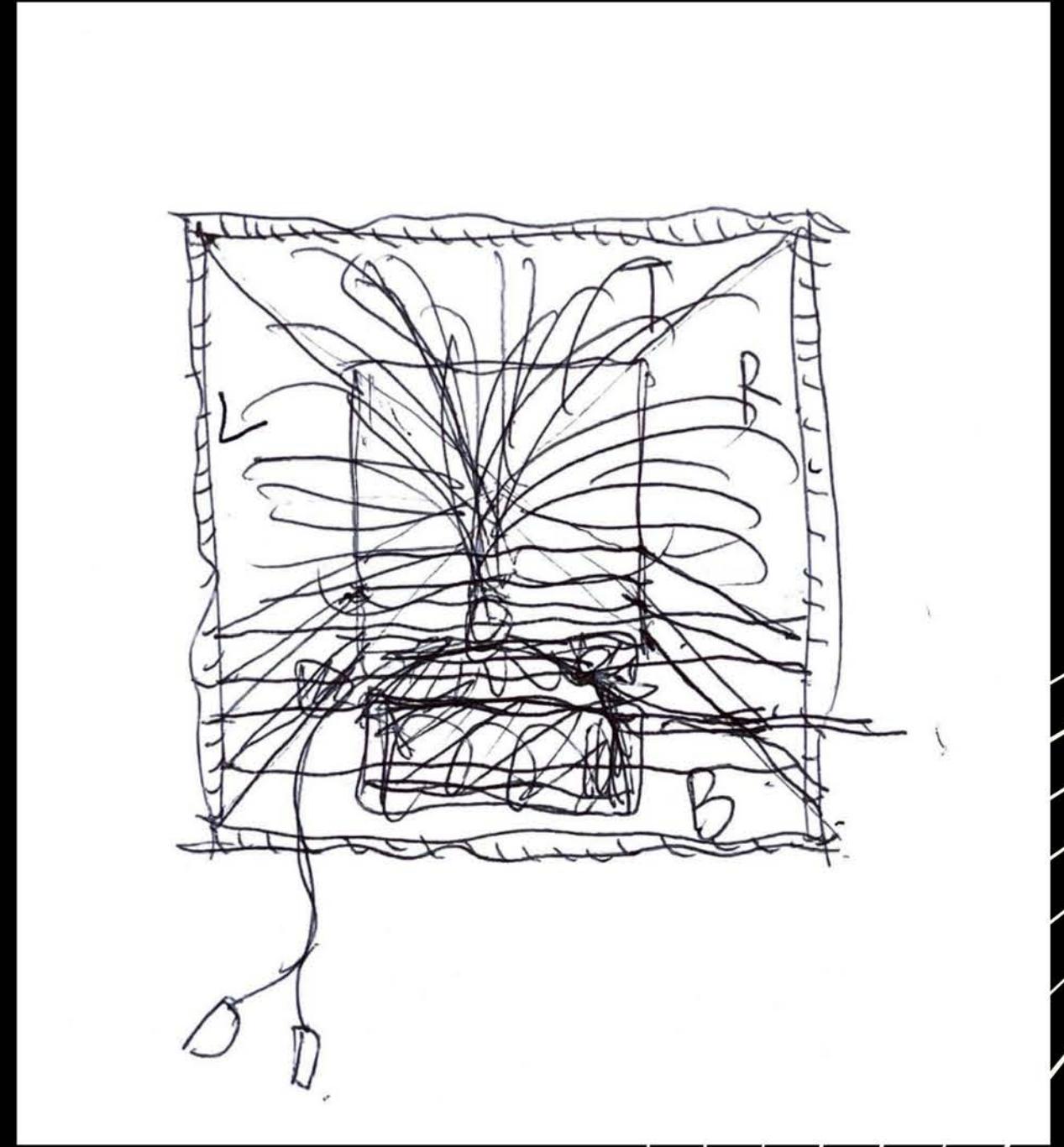
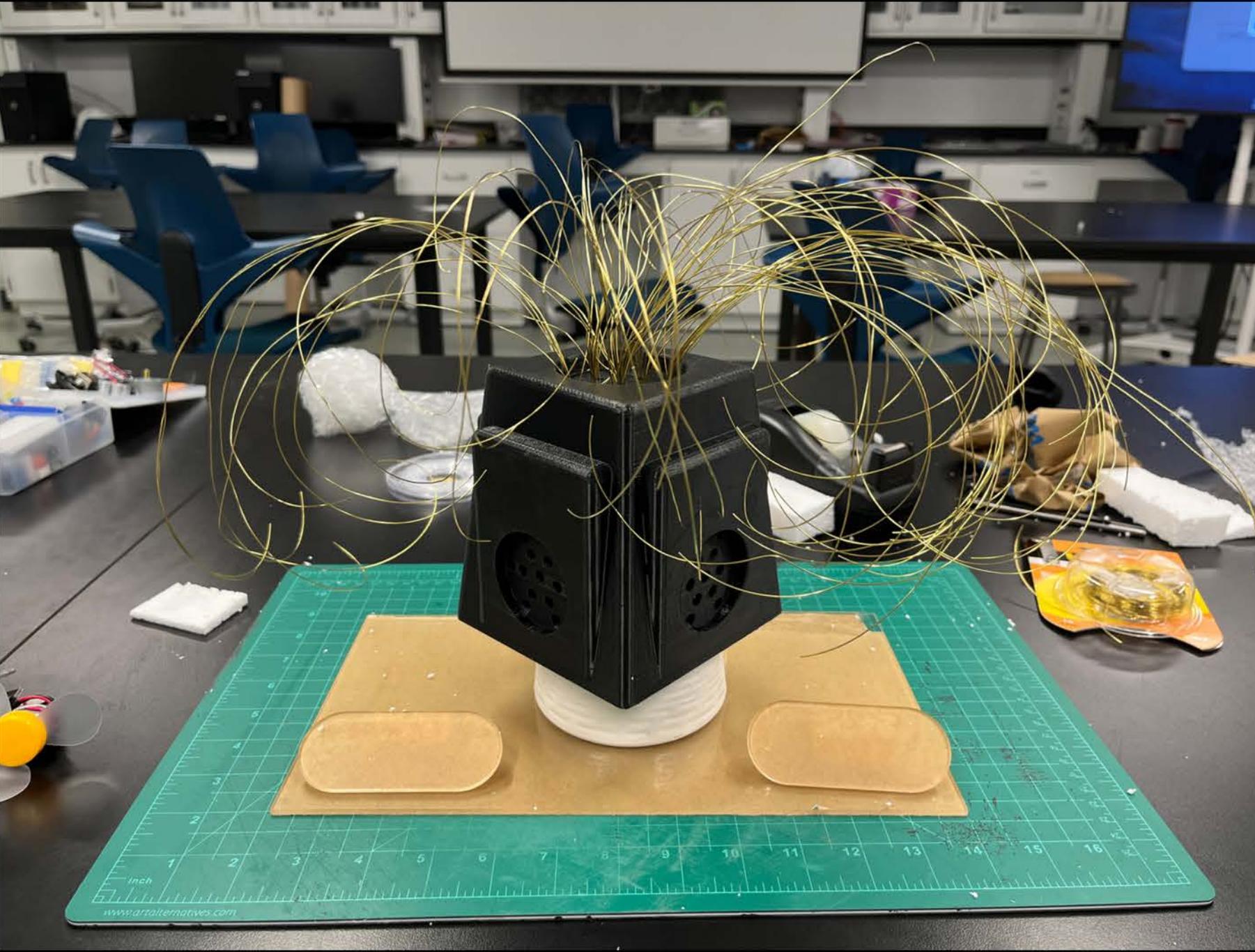
The background features abstract white line art composed of numerous thin, curved lines that form organic, flowing shapes resembling waves or leaves. These lines are primarily concentrated in the upper left and lower right quadrants, creating a sense of movement and depth.

PROTOTYPE

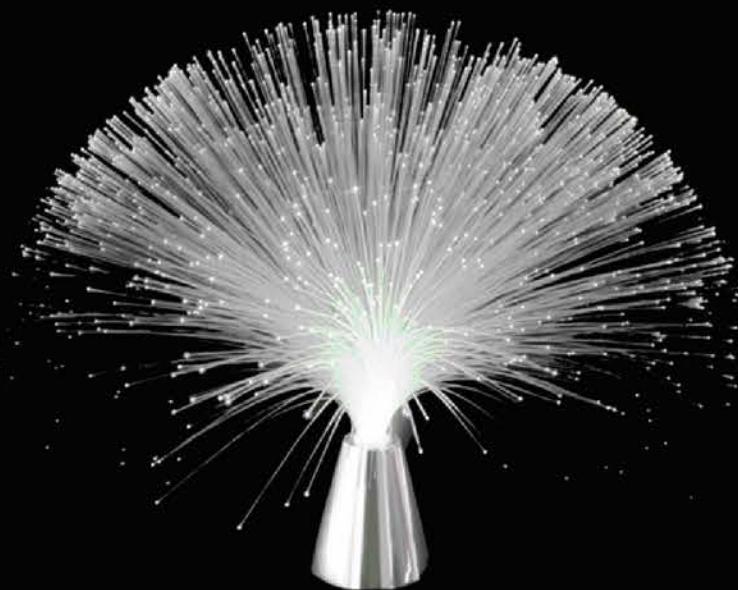
INITIAL PROTOTYPE



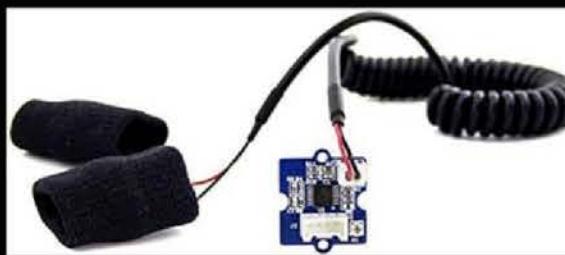
INITIAL PROTOTYPE



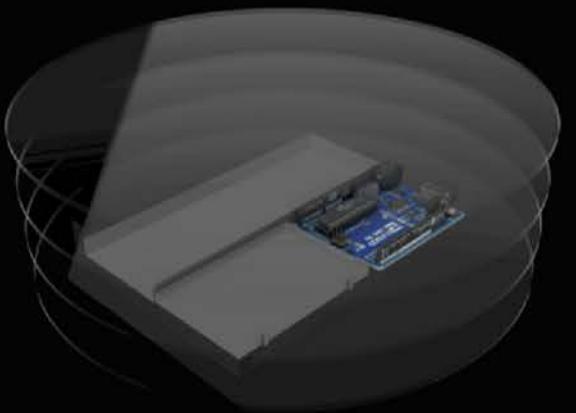
INITIAL PROTOTYPE



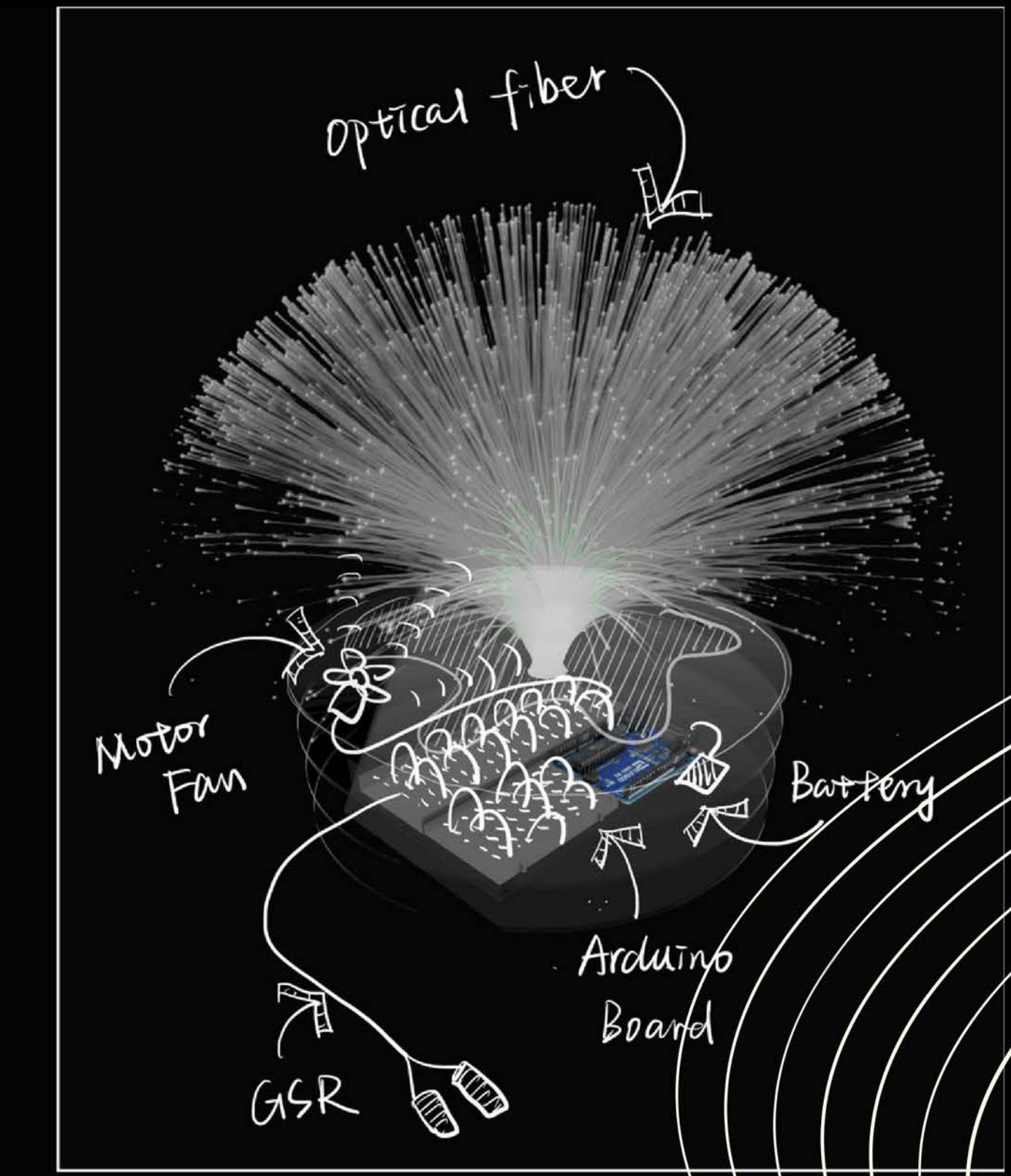
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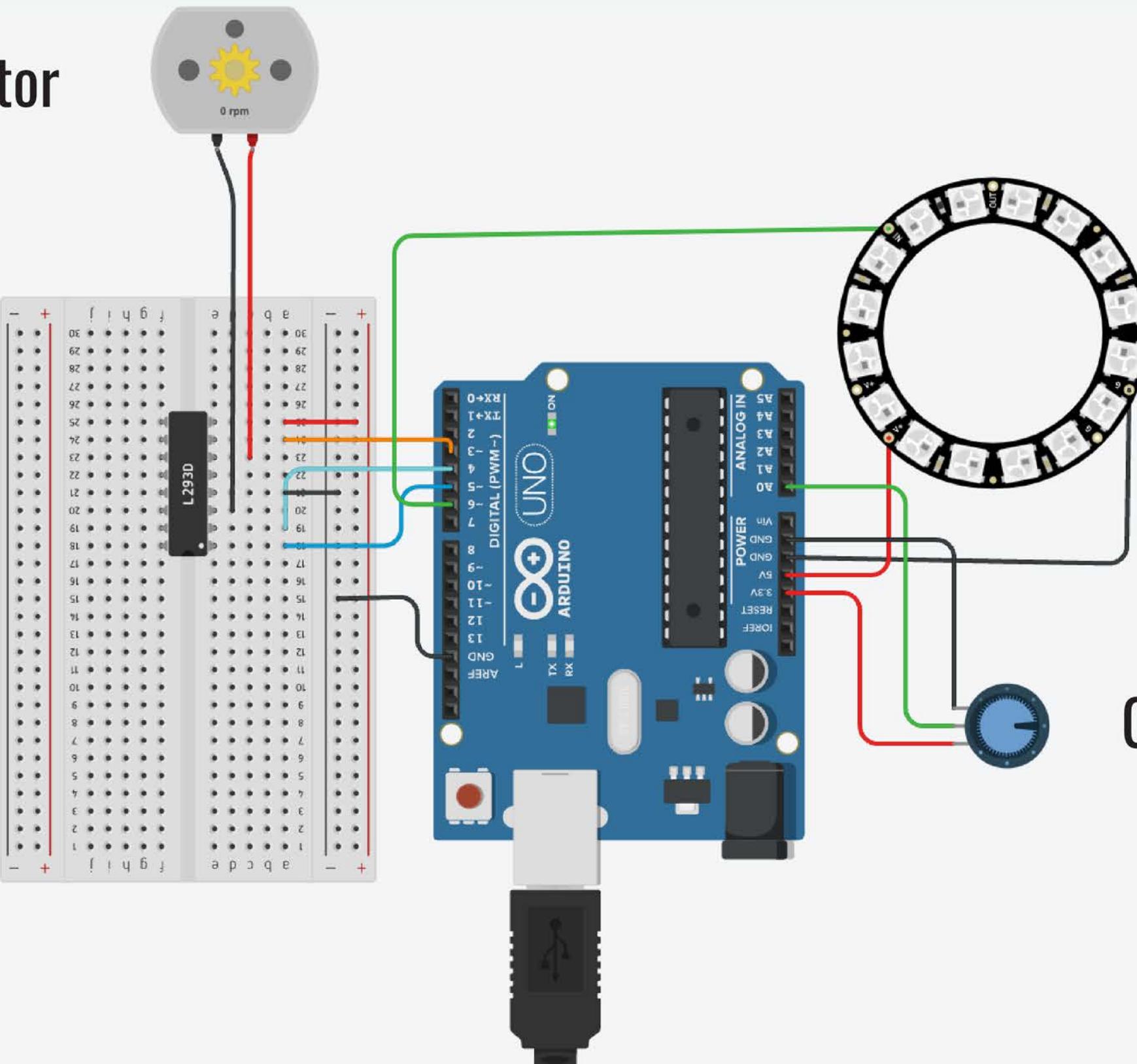
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TECHNOLOGY

Fan Blade & 3-6V Motor

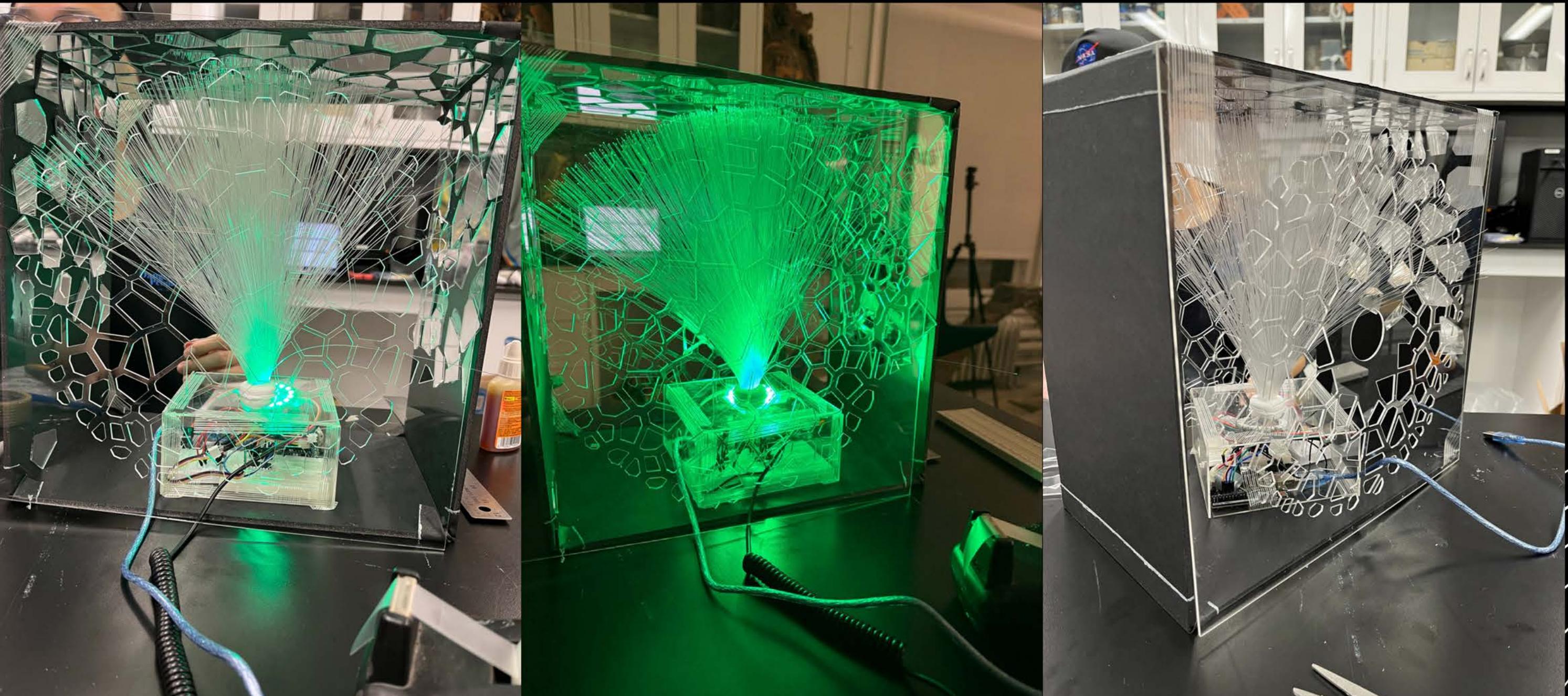
L293D



LED Ring

GSR Data

FINAL PROTOTYPE



FINDINGS: OUTPUT INTERACTION



- Changes in light color can indicate shifts in human emotions:
 - Green light signifies a positive mood
 - Yellow denotes neutrality
 - Red indicates negativity
 - Flashing red suggests extreme negativity
- The rotation of the fan motor, which drives the movement of the optical fiber, can enhance people's mood

POTENTIAL APPLICATION ARCHITECTURE SCALE



POTENTIAL APPLICATION URBAN SCALE



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**THANKS FOR
LISTENING**

