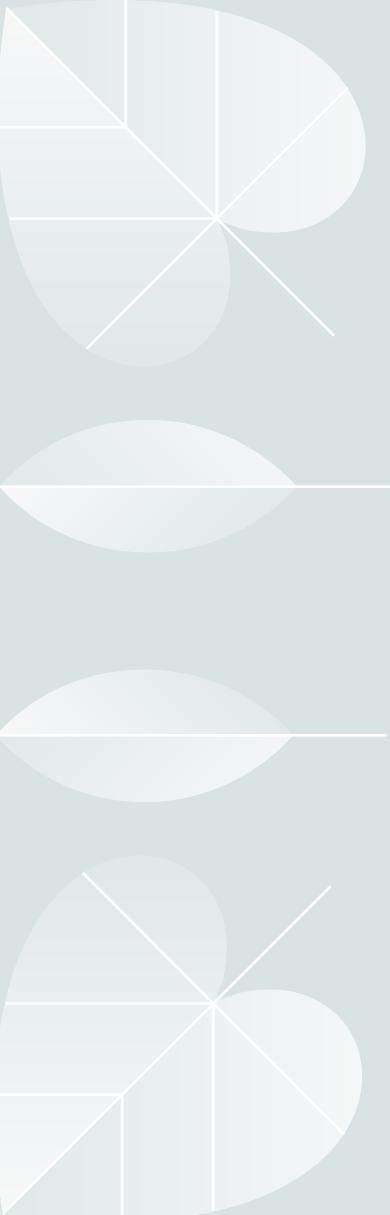


# Milestone 4

By Cianna Grummer  
SmartStride





# Milestone 4

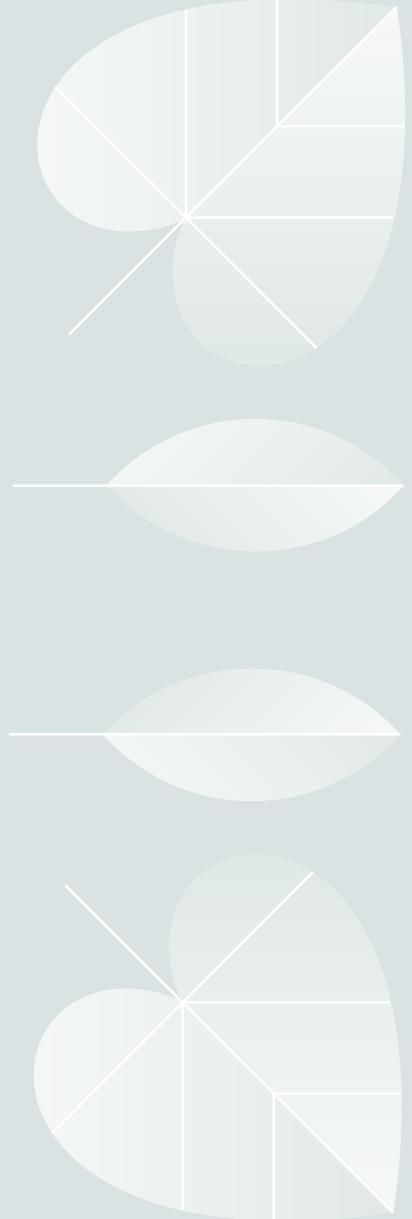
---

<b>Task</b>	<b>Progress</b>	<b>To Do</b>
Setup AWS's IoT or S3	50%	Move to future works
Connect Raspberry Pi to lambda function	100%	N/A
Create a new webpage for drag and drop	100%	N/A
Create drag and drop functionalities	100%	N/A
Connect device to website	35%	Collect data from sock (Bela) and finish ML (Alec)

# S3 Bucket

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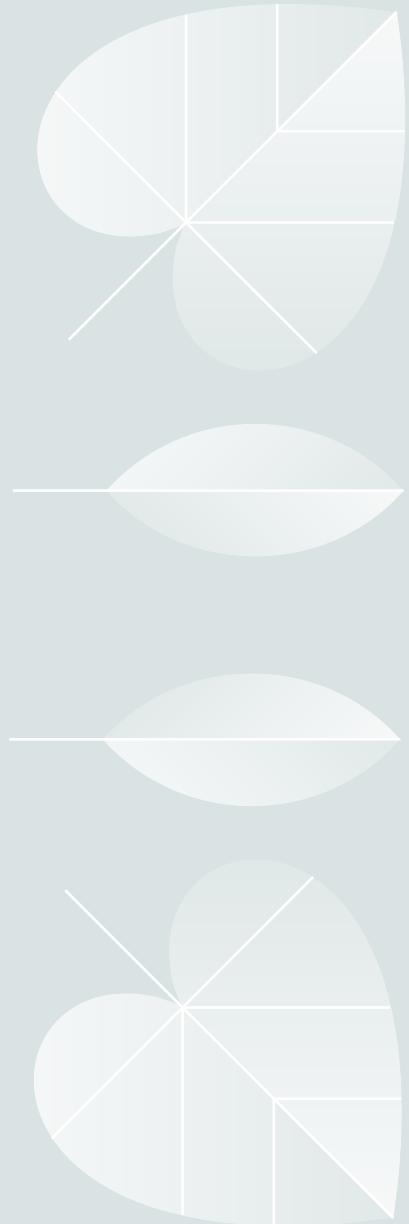
- Holds data before uploading it to database
  - *Ensures no data lost in large uploads and with many uploads*
- Should be used with many devices
- Did not complete due to budget issues
  - *Can accomplish all goals without S3 Bucket*
  - *Will be moved to future goals*



# Connecting Raspberry Pi

---

- Created an app on raspberry pi for easy use
  - *Used Python and Tkinter to create functions and GUI*
  - *User opens app and types in their username and clicks start monitoring*
    - Message box tells the user if any files are found and if upload was successful
  - *App checks folder called “CSV Data”*
    - This is where data from the ML will be saved
  - *Connects to Drag and Drop API to handle upload of data*



# New page for Drag and Drop

- New page is accessible through patient dashboard

*Button called "Upload CSV File"*

The screenshot shows the MySQL Workbench interface with a patient dashboard overlay. The dashboard includes sections for Patient Information, Progress Graph, Treatment Goals, Severity Assessment, and Access Device User Guide. A prominent blue button labeled "Upload CSV File" is visible at the bottom right. The central area features a query editor with the following SQL code:

```
1 • use patient_data;
2 • select * from patient_session_data;
3
4 • delete from patient_session_data where patient_id = 'cgrummer';
5
6
7
8
9
10
11
12
13
14
```

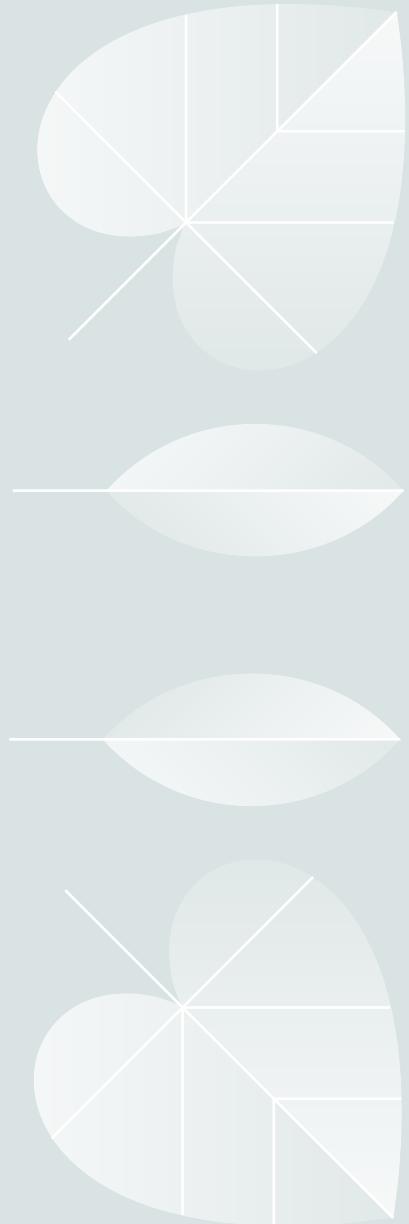
The "Result Grid" pane below the query editor shows a table structure with columns: prime, session\_id, patient\_id, time, acc\_1\_x, acc\_1\_y, acc\_1\_z, gyro\_1\_x, gyro\_1\_y, gyro\_1\_z, emg\_1\_value. The "Action Output" pane at the bottom lists the execution history of the queries:

#	Time	Action	Message	Duration / Fetch
1	12:33:12	delete from patient_session_data where patient_id = 'cgrummer'	Error Code: 1046. No database selected Select the default DB to be used ...	0.079 sec
2	12:33:23	use patient_data	0 row(s) affected	0.062 sec
3	12:33:23	select * from patient_session_data LIMIT 0, 1000	1000 row(s) returned	0.140 sec / 0.125 sec
4	12:33:28	delete from patient_session_data where patient_id = 'cgrummer'	33390 row(s) affected	0.469 sec
5	12:33:32	select * from patient_session_data LIMIT 0, 1000	0 row(s) returned	0.062 sec / 0.000 sec

# Connecting Device to Website

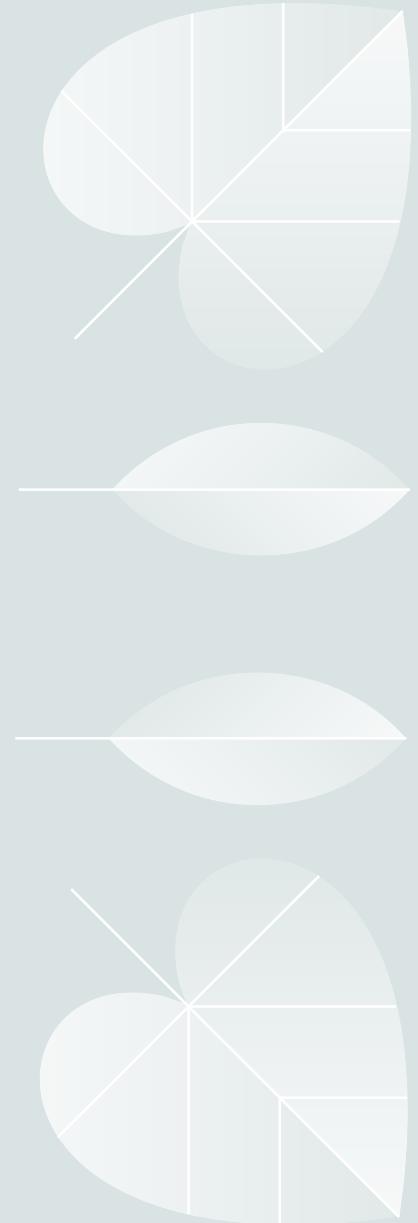
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- Raspberry Pi can upload files to database using Drag & Drop API and Lambda
  - *Lambda uploads CSV data as separate sessions*
- Only 35% completed
  - *Sensors are still broken*
  - *ML is having issues with template matching*



# Milestone 5

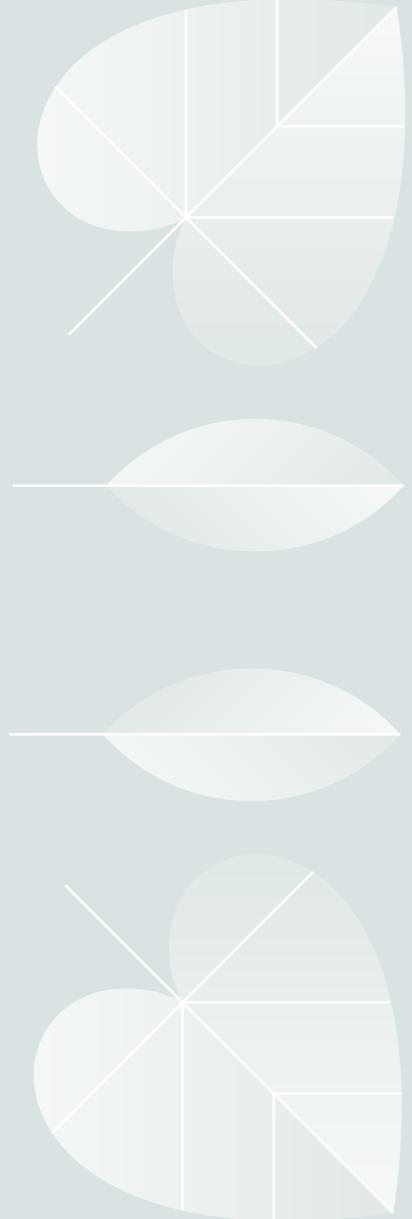
Task	Progress	To Do
Update database structure	15%	Talk with group to see what data will be used
Define graphs	35%	Make necessary changes to HTML
Create pie chart	10%	
New page for past results	40%	Add the API calls to HTML and redirection links, refine looks
Create API and Lambda functionalities for pie charts	0%	Create Lambda and functions as well as API
Create API and Lambda functionalities for past results page	0%	Need to create lambda and API functions



# Define Graphs

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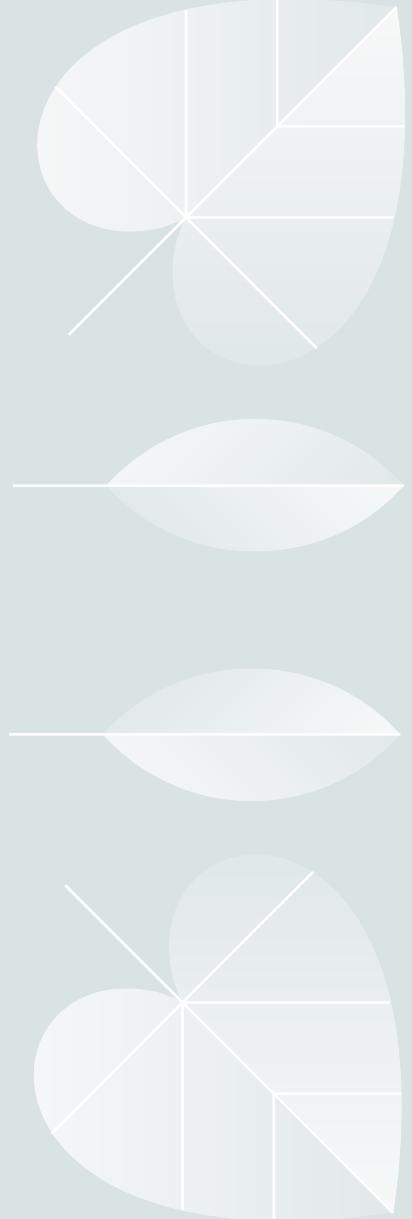
- Changes to be made:
  - Rename *EMG Analysis* to "Gastrocnemius EMG Activity"
  - Remove "Gait Analysis with step classification" tile
  - Remove figures from "Last PT Session Details"
  - Pie Chart Visible to Patient and Doctor
  - Pie Chart will go under "Last PT Session Details"
  - Will put average ITW foot angle under "Last PT Session Details" (doctor)
  - The time series plot showing averages over 1 gait cycle for ITW vs Normal Step ( $x = \text{time}$ ,  $y = \text{angle (degrees)}$ ) (doctor)



# Pie Chart and Past Results Page

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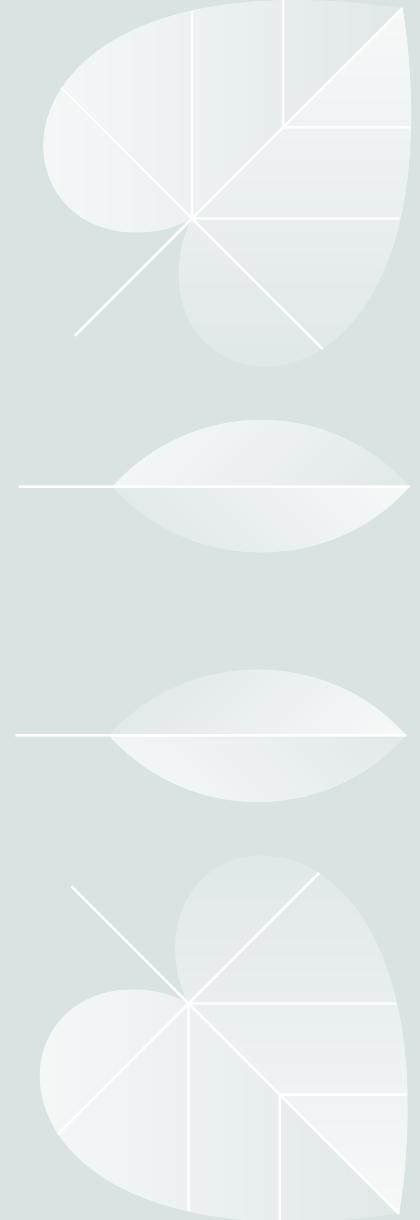
- Pie Chart will be visible to patient and doctors
- 100% of pie chart is the total steps taken in a month
  - *Pie chart will be divided into sections of Normal, Mild, Severe, and Extreme*
  - Labels will be changed
  - Step Identification will occur during the ML stage on the Raspberry Pi
- Past Results page will hold all past results separated by months
  - *Accessible through patient dashboard*



# Device & ML Update

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- Device not working due to past wires
  - *Would turn on but not take readings*
- Switching to coax wires
  - *Almost completed soldering for testing*
  - *Coax wires have a shield of metal braids around wires that prevents interference from reaching our signals*
- ML
  - *Can identify where and how many steps were taken*
  - *Currently working on extracting signal segments from the steps to feed into the ML*





Questions?

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