

Milestone 4

By Cianna Grummer
SmartStride





Milestone 4



Task	Progress	To Do
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

- 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 image shows a screenshot of the SmartStride patient dashboard with a MySQL Workbench window overlaid. The dashboard includes sections for Patient Information, Progress Graph, and Severity Assessment. The MySQL Workbench window displays a SQL query and its execution results.

SmartStride Patient Information:

- Name: Grummer, Cianna
- Username: cgrummer
- Assigned Doctor: GreenEggs
- Last Update from Device: 2/24/2025,

MySQL Workbench Query:

```
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
```

MySQL Workbench Output:

#	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

SmartStride Dashboard Elements:

- Navigation: About, Software, Help, Home
- Section: Patient Information
- Section: Progress Graph
- Section: Severity Assessment
- Buttons: Access Device User Guide, Upload CSV File

Connecting Device to Website

- 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

- 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 = time, y = angle (degrees) (doctor)*



Pie Chart and Past Results Page

- 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*





Questions?

