AI Fitness Trainer

*Progress Report #6*

# TL; DR

**On track (*Github:***[*AI-FitnessTrainer*](https://github.com/aminuabdusalam/AI-FitnessTrainer)*)***.** Finetuned and modularized trainer for curls exercise by **10/11.**

# Project Goals (Recap)

The goal of the project can be summarized as developing an **AI fitness trainer** embedded with **storage and recommender systems** and an **AI virtual mouse**.

The AI fitness trainer will help the user lose weight, gain muscle, and accomplish other fitness goals. In addition, it'd attempt to understand the client goals, develop a fitness routine, recommend a healthy eating plan, and ensure all exercises are performed correctly.

# Highlights

**Finetuned trainer as necessary and re-evaluated project timeline**

* Created Exercises module and converted curls trainer into a class serving as footprint for other kind of exercises. Also, created classes, albeit empty for now, for Pushups and Squats Trainer.
* Modified main Trainer code as necessary to accommodate for modularization of the exercises
* Finetuned Trainer - Trainer now able to handle the use of both arms as it allows users select what arm they are completing the curls exercise on.
* As shown below, trainer still working as it should:

A person holding a trophy

Description automatically generated with medium confidenceA picture containing text, person, wall, indoor

Description automatically generated

* Revamped project timeline to accommodate for addition of two exercises (Pushups and Squats) and creation of a frontend (website).

# Lowlights

None

# Next Steps

* Set up PoseDetection program to capture video from webcam input ([Pose - mediapipe (google.github.io)](https://google.github.io/mediapipe/solutions/pose#static_image_mode)) and **complete by 10/18**. NB: program currently detects pose in saved images/video.
* Complete Trainer for pushups exercise by **10/18.**

# Timeline

This section lists the milestones of the project spread across two semesters (Fall 2022 and Spring 2023).

|  |  |  |  |
| --- | --- | --- | --- |
| **Milestones** | | **ETA** | **Status** |
| **Requirements Gathering** (Project Idea, Project Proposal) | | 08/22 | Completed |
| **Design Exploration** (Setup and Installation of necessary technologies, Addition of Project to remote repo, Skill Preparation, Framework Project) | | 08/29 | Completed |
| **Implementation** | Complete Pose Estimation Build | 09/19 | Completed |
| Complete AI Personal Trainer for **Curls** | 10/11 | **Completed** |
| Complete AI Personal Trainer for **Pushups** | 10/18 |  |
| Complete AI Personal Trainer for **Squats** | 10/25 |  |
| Partly Complete Basic Storage System Build | 10/31 |  |
| **Quality Testing** | | 11/7 |  |
| **Midpoint Presentation Draft** | | 11/14 |  |
| **Midpoint Demo & Report** | | 11/21 |  |
|  | **WINTER BREAK** | | |
| **Project Review** (Current status and Re-evaluation of Next Steps as Needed) | | 01/16 |  |
| **Implementation** | Complete Storage System Build | 01/30 |  |
| Complete Recommender System Build | 02/20 |  |
| Complete Frontend/Website (Stretch Goals) | 03/13 |  |
| Complete Hand Tracking Build (Stretch Goals) | 03/13 |  |
| Complete AI Virtual Mouse Build (Stretch Goals) | 03/27 |  |
| **Quality Testing** | | 04/3 |  |
| **Final Presentation Draft** | | 04/10 |  |
| Final Demo & Report | | 04/17 |  |