

# **Personal AI Gym Trainer**

## **User Manual**

Version 1.0

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## **1. INTRODUCTION**

The contemporary landscape of fitness and wellness is undergoing a transformative shift, marked by an increasing reliance on personalized and AI-driven solutions to meet the unique needs of individuals pursuing home-based exercise routines. In response to this evolving paradigm, our project, the "Personal AI Gym Trainer," aims to provide a cutting-edge fitness

experience that combines the power of computer vision, artificial intelligence, and interactive graphical user interfaces.

### 1.1 Purpose

The primary purpose of the "Personal AI Gym Trainer" is to provide users with an interactive and AI-driven solution for their home-based exercise routines. This application aims to revolutionize your fitness journey by offering real-time feedback, personalized guidance, and an engaging platform to achieve your fitness goals.

### 1.2 Key Features for Personal AI Gym Trainer

- **Real-Time Feedback:** Receive immediate guidance on your exercise form and posture during workouts.
- **Exercise History Tracking:** Keep a comprehensive record of your exercise history to monitor progress over time.
- **Total Counts:** Easily track the total counts of various exercises, allowing you to measure your overall performance.

## 2. SYSTEM REQUIREMENTS

To ensure optimal performance and a seamless experience with the "Personal AI Gym Trainer," please review the following hardware and software requirements.

### 2.1 Hardware Requirements:

1. **Processor:** Dual-core processor or higher.
2. **Memory (RAM):** 4 GB RAM or more.
3. **Webcam:** Integrated or external webcam for accurate pose estimation.
4. **Storage:** 10 GB of available storage space.
5. **Display:** Minimum resolution of 1280x720.

## 2.2 Software Requirements:

1. **Operating System:** Windows 10, macOS, or Linux.
2. **Python:** Version 3.7 or higher.
3. **Dependencies:** Ensure the following Python libraries are installed:
  - OpenCV
  - MediaPipe
  - Tkinter
  - NumPy
  - [Other dependencies as specified in the installation guide.]

## 3. INSTALLATION

Follow these steps to install the "Personal AI Gym Trainer" on your system and begin your personalized fitness journey.

### 3.1 Prerequisites:

Before proceeding with the installation, ensure that the following prerequisites are met:

1. **Python:** Install Python 3.7 or a higher version on your system. You can download Python from [python.org](https://python.org).
2. **Git (Optional):** If you prefer using Git, ensure it is installed. You can download Git from [git-scm.com](https://git-scm.com).

### 3.2 Step-by-Step Installation:

#### 1. Clone the Repository:

- Open a terminal or command prompt.
- Run the following command to clone the repository:

```
git clone https://github.com/AshishY3103/Personal-AI-Gym-Trainer
```

- Alternatively, you can download the repository ZIP file and extract it to your desired location.

#### 2. Navigate to the Project Directory:

- Change your working directory to the project folder:

```
cd Personal-AI-Gym-Trainer
```

#### 3. Install Dependencies:

- Run the following command to install the required Python libraries:

```
pip install -r requirements.txt
```

#### 4. Run the Application:

- Execute the main Python script to launch the "Personal AI Gym Trainer" application:

```
python index.py
```



## 5. Explore the User Interface:

- Once the application is running, explore the user interface. Navigate through the dashboard, start an exercise, and experience real-time feedback.

# 4. GETTING STARTED

Embark on your fitness journey with the "Personal AI Gym Trainer." Follow these steps to make the most out of your personalized workout experience.

## 4.1 Launching the Application

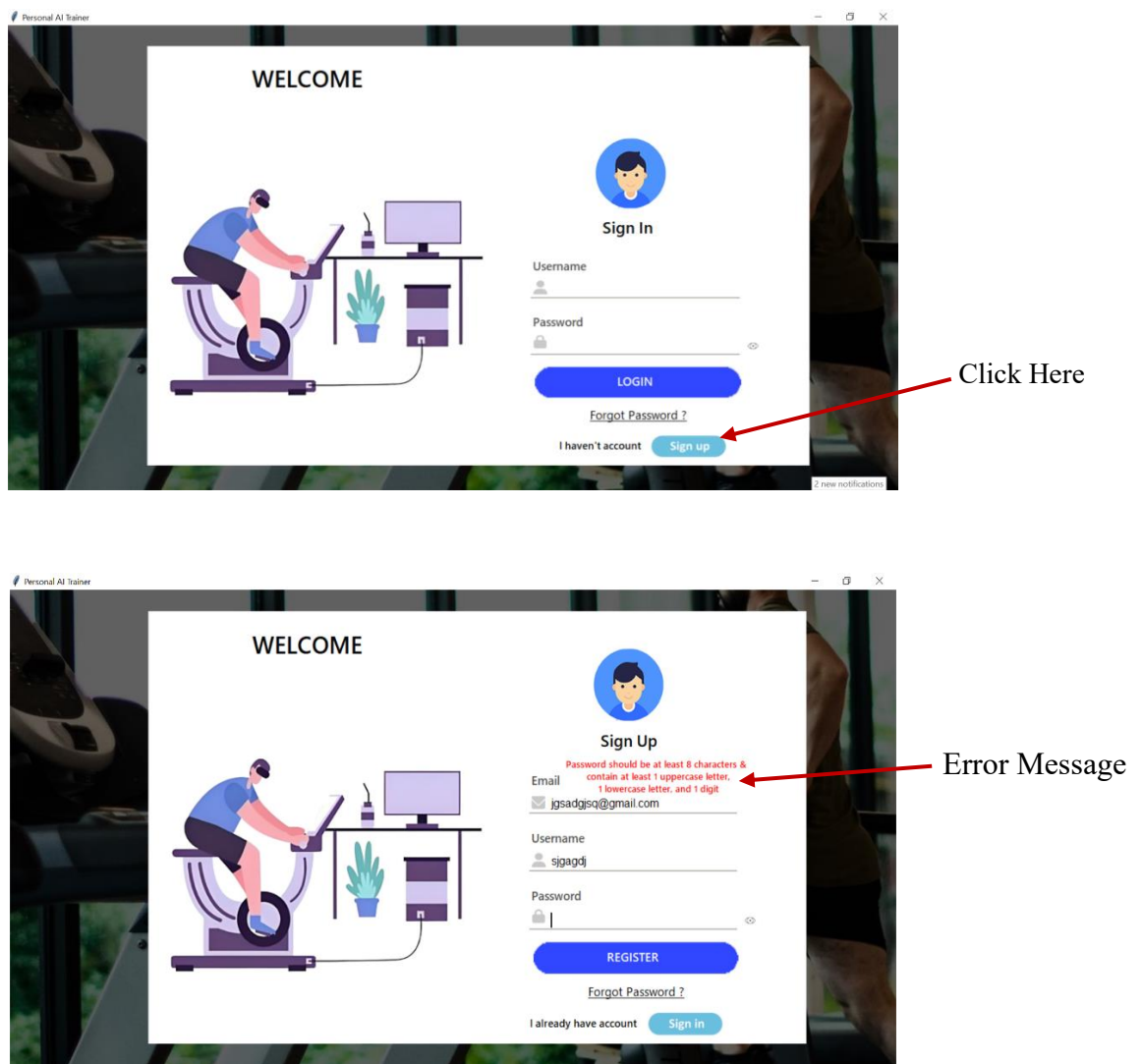
To start your fitness session:

- Open the application on your device.
- Upon launch, you will be directed to the main interface.

## 4.2 Login or Setup Instructions

If you are a new user:

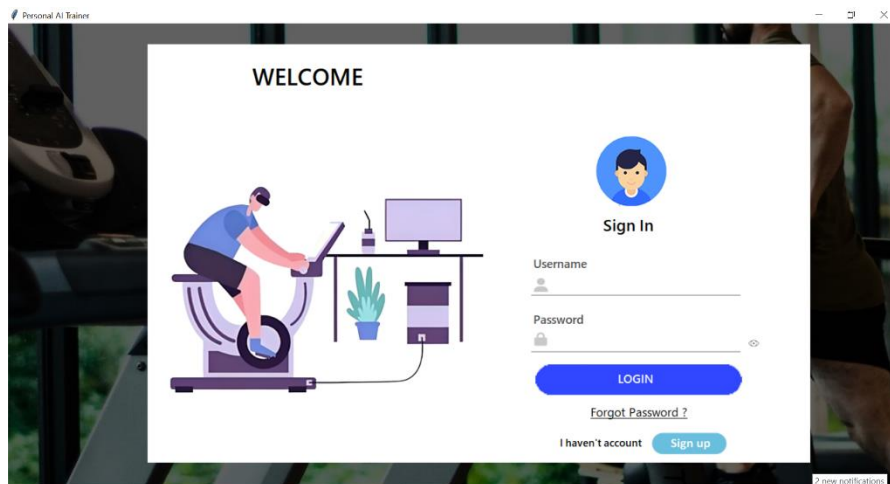
- Follow the on-screen setup instructions to create your profile.
- Set up a login if required, ensuring your data is secure.



Fill all the fields and then click on **REGISTER** Button

For returning users:

- Log in with your existing credentials.



Enter correct username and password and **click** on **LOGIN** Button

### 4.3 Dashboard

Explore the dashboard to:

- Review your exercise history.
- Monitor total counts of completed exercises.

Dynamic Label with username

Logo

Side Menu Bar

Logout Button

Exercise History

Total Count of Exercise

| Exercise Type | Count | Timestamp  |
|---------------|-------|------------|
| curl          | 5     | 28-02-2024 |
| curl          | 5     | 28-02-2024 |
| curl          | 5     | 28-02-2024 |
| curl          | 5     | 28-02-2024 |

25 Total Curls

0 Total Push-Ups

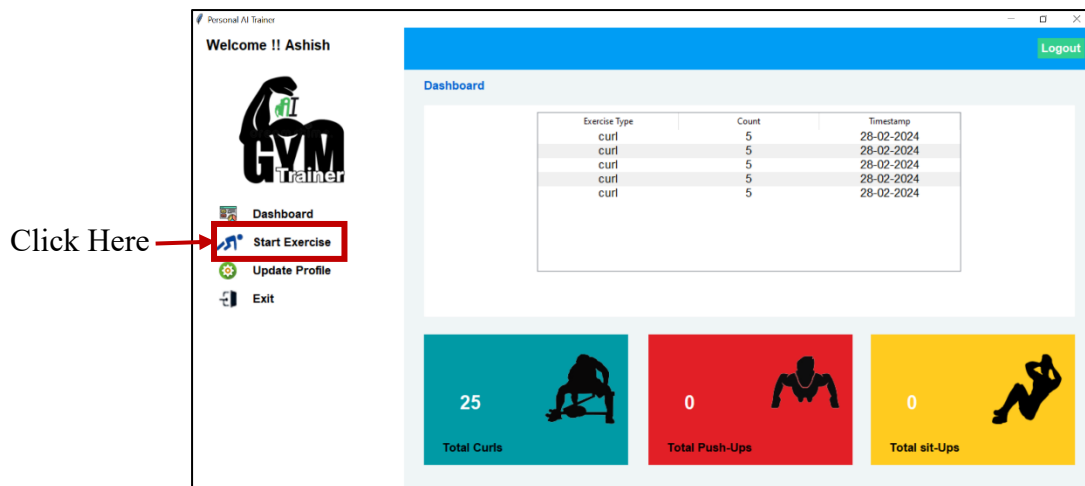
0 Total sit-Ups

### 4.4 Starting an Exercise

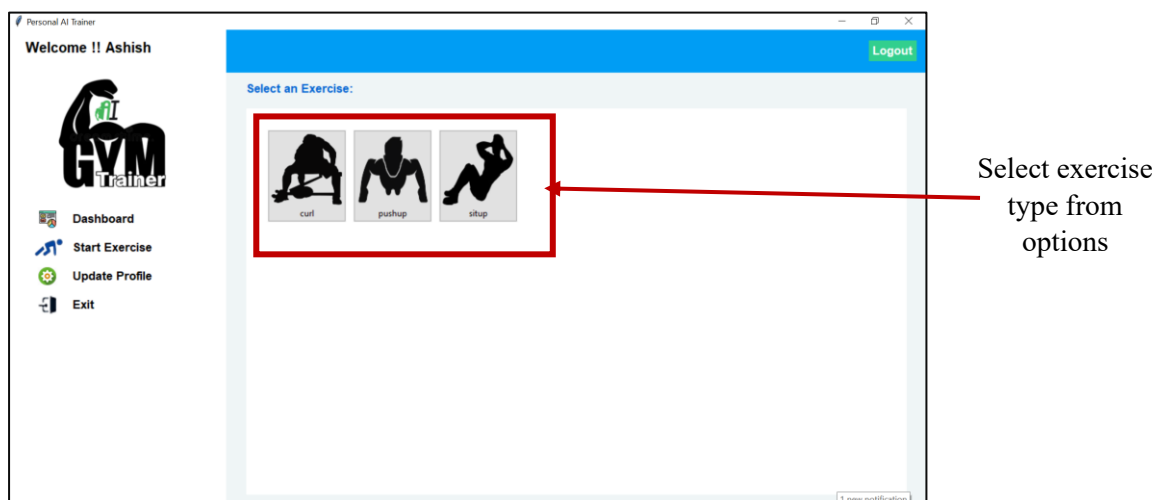
To begin a new exercise:

1. Navigate to the "Start Exercise" section.

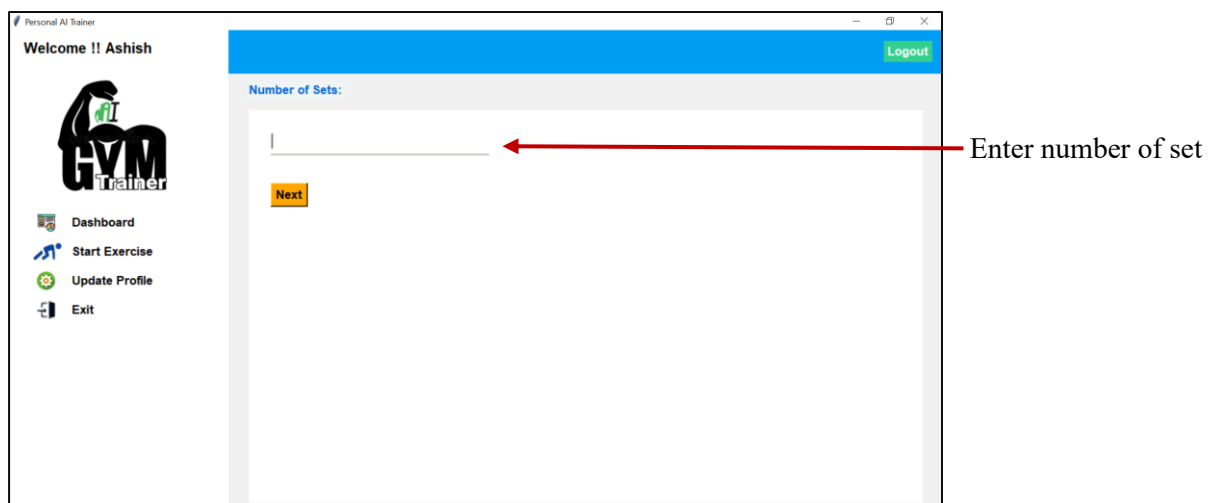




2. Select your desired exercise type from the provided options.



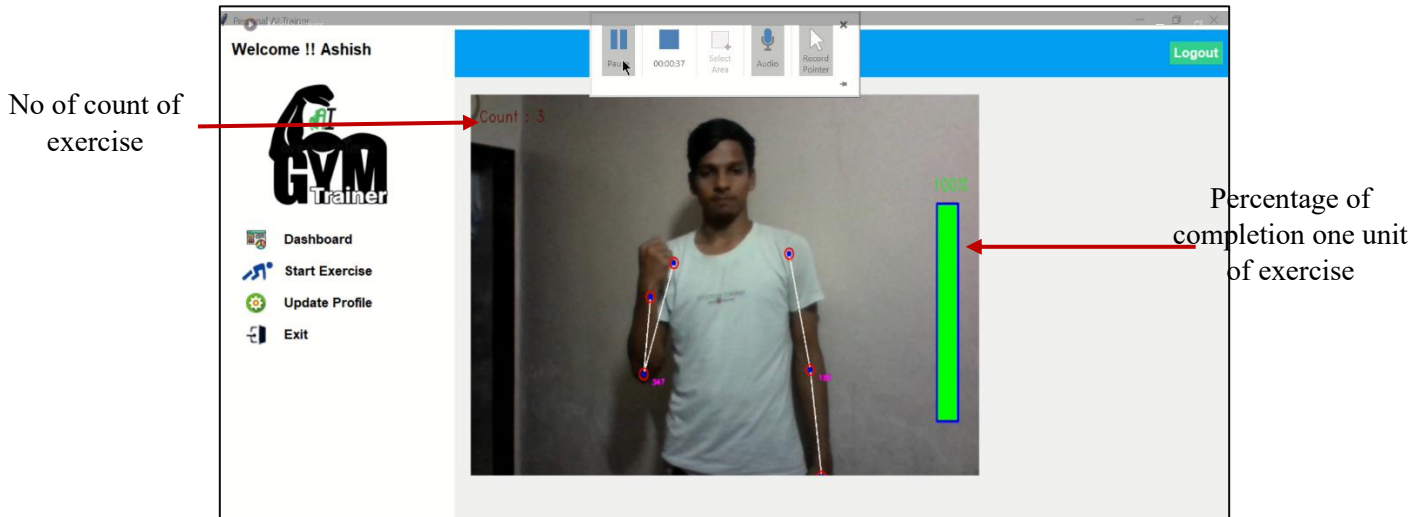
3. Set the number of exercise sets you wish to complete.



#### 4.5 Real-time Feedback

Experience real-time guidance during your workout:

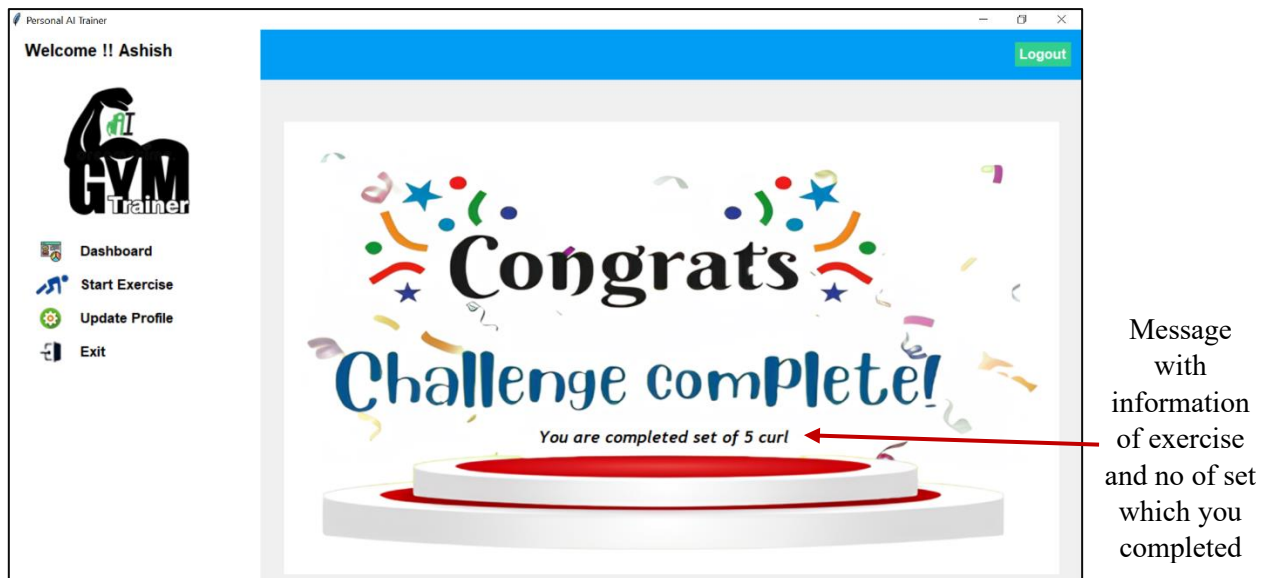
- Pay attention to visual cues on the screen.
- Receive immediate feedback on form and posture.



#### 4.6 Completing an Exercise

Upon completing an exercise set:

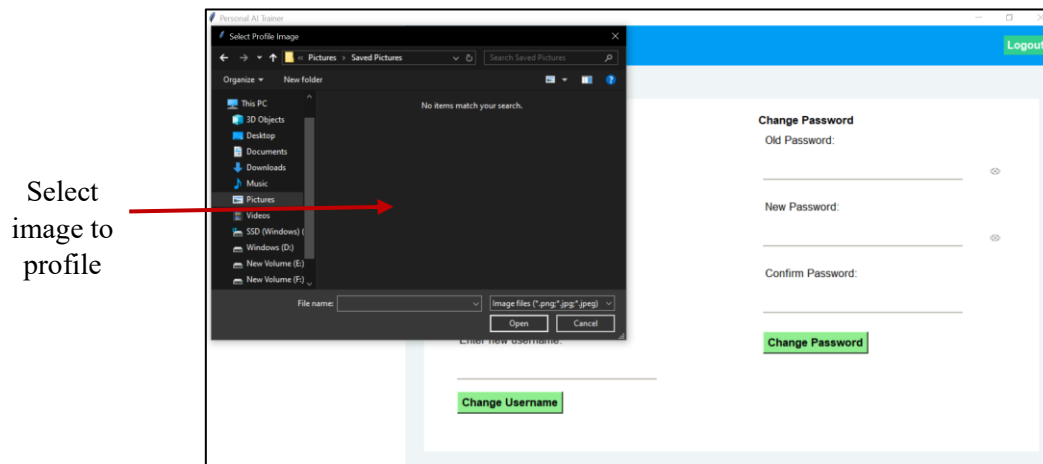
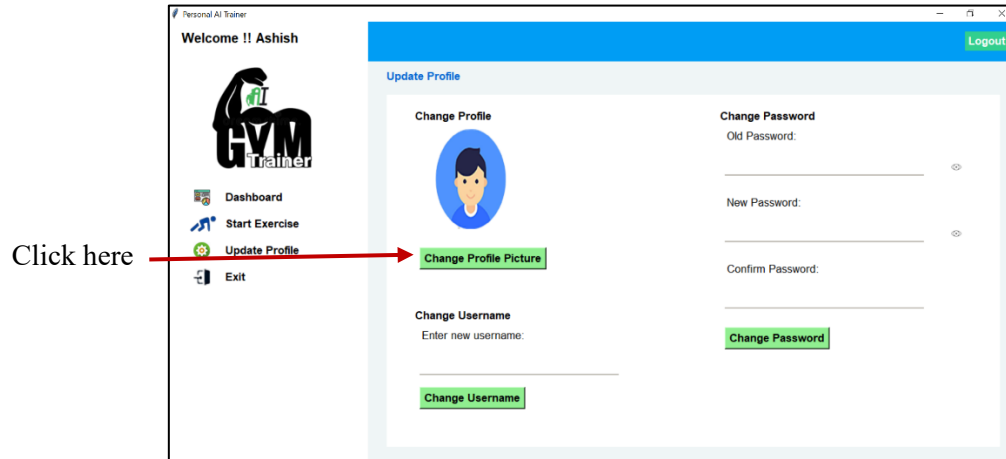
- Review the personalized congratulations message.
- Check the total counts to track your progress.



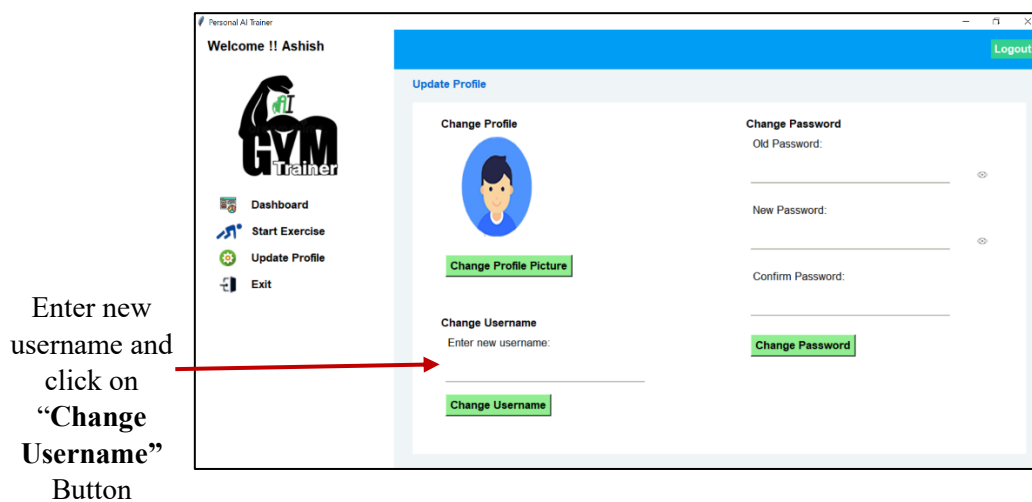
## 4.6 Update Profile

User can change its information :

- Change Profile Image :



- Change Username:



- Change Password:

Fill all the  
fields and click  
on “**Change  
Password**”  
Button

The screenshot displays the 'Personal AI Trainer' web application interface. The top navigation bar is blue with a 'Logout' button on the right. The main content area is titled 'Update Profile' and contains three sections: 'Change Profile' with a profile picture and a 'Change Profile Picture' button; 'Change Username' with a text input and a 'Change Username' button; and 'Change Password' which is highlighted with a red box. The 'Change Password' section includes three password input fields labeled 'Old Password:', 'New Password:', and 'Confirm Password:', each with a toggle icon to the right. A 'Change Password' button is located at the bottom of this section. A red arrow points from the text 'Fill all the fields and click on “Change Password” Button’ to the 'Change Password' section.

## 5. FUTURE ENHANCEMENTS

The "Personal AI Gym Trainer" has laid a strong foundation, and there are several potential future enhancements to further improve its functionality, user experience, and adaptability.

### 5.1 Upcoming Features :

#### 1. Enhanced Gesture Recognition:

- Implement machine learning techniques to enable the system to adapt and learn from individual users' unique movement patterns.
- Explore the use of deep learning models for gesture recognition to improve accuracy and robustness.

#### 2. Expanded Exercise Library:

- Continuously expand the library of supported exercises to offer users a diverse range of workouts.
- Integrate machine learning algorithms to automatically recognize and suggest new exercises based on user preferences and performance.

#### 3. Customizable Workout Plans:

- Allow users to create personalized workout plans by selecting exercises, setting repetitions and sets, and defining rest intervals.
- Implement adaptive algorithms that adjust workout plans based on user progress and feedback.

#### 4. Interactive Virtual Trainer:

- Develop an interactive virtual trainer that guides users through workouts with voice instructions, encouraging messages, and form corrections.
- Incorporate natural language processing (NLP) for more natural and engaging interactions.

## 6. CONCLUSION

Thank you for choosing the "Personal AI Gym Trainer" to be your fitness companion. We appreciate your commitment to a healthier lifestyle and hope our application enhances your workout experience.

### **6.1 Thank You Message**

We express our gratitude for being a part of your fitness journey. Your dedication inspires us to continue improving and providing innovative solutions for your well-being.

### **6.2 Feedback**

Your feedback is invaluable to us. Please take a moment to share your thoughts, suggestions, or concerns. Your input helps us tailor the "Personal AI Gym Trainer" to meet your evolving needs. Contact us at [support@personalaitrainer.com or through our online feedback form.