AI Physical Rehabilitation

Product Requirements

AI Physical Rehabilitation

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**Document History**

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# Objective

The objective of this document is to document the requirements for the AI Physical Rehabilitation system that have been indicated by the client.

# Scope

The scope of this document is to define the requirements…

# References

## Cited Documents

Jiang, Chen, Liu, Yu, Yu, Chen. *MotionGPT: Human Motion as a Foreign Language.* https://github.com/OpenMotionLab/MotionGPT.

## Acronyms

LLM Large Language Model

# Functional Requirements

## What it should do

The completed system must be able to extract information from a video of a patient performing one of several exercises (see section 7.1), and provide meaningful feedback to the patient about the quality of the exercise they performed.

The feedback must include a quality score (integer value in the range 1-10) where a higher score will be assigned if the exercise was performed better, and it must include text output that explains what the patient is doing incorrectly in the exercise and how the patient could improve the exercise.

# Mechanical Requirements

N/A

# Electrical Requirements

N/A

# Software Requirements

## Functionality

The final product must employ a single model that can analyze a video and provide tailored feedback for any of the rehabilitation exercises in the following section:

## Supported Exercises

-Squat

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-(Additional specific exercises will be added to this list with the guidance of the client as the product is developed. The client would like there to be about 5 supported exercises)

## User Interface

The user interface must be able to support a video (recorded on a smartphone) being submitted as input. The user interface must also be able to display text as an output that the user can read.

The client would like (NOT required) this user interface to be implemented as a single smartphone application.

# Environmental Requirements

N/A

# Regulatory Requirements

The project may utilize pre-existing LLMs that are open source and can be tuned, e.g. those listed in section 3.1.

# Cost Requirements

This project should not have any expenses.

# Schedule Requirements

The following are the major Project Milestones:

* Project Definition Sept. 21, 2023
* Project Plan Oct. 3, 2023
* Snapshot Day #1 Oct. 10, 2023
* Concept Design Review Nov. 10, 2023
* Snapshot Day #2 Dec. 5, 2023
* Project Portfolio Dec. 8, 2023
* Engineering Release Review Feb. 16, 2023
* Snapshot Day #3 March 27, 2023
* UI Design EXPO April 26, 2023
* Design Report May 4, 2023