

Cloud Robotics-Based AI-Powered Digital Fitness Trainer as a Doctor

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ABSTRACT

The way people take care of their health is changing because of fitness software, nutrition software and workout software. These software programs are really helpful. They use methods to assist users.

This application helps people look at fitness and nutrition in a way. It helps people by including things like health checks. It also gives them diet and exercise plans based on their health history and information. They get reports to look at. Companies use information from these apps to find groups of people and make offers to them. The software uses information to give people updates about their health. People can use app information to make decisions about their health. The information from fitness apps helps people understand their health. This understanding helps them make choices.

The software gives people a picture of their health. It uses information to give people what they need to stay healthy. Fitness software and nutrition software give people tools to take care of their health. The information from these apps helps companies understand their users. It also helps them decide what to do.

INTRODUCTION

Technologies such as digital wearables enhanced with AI are well-suited for fitness. Some of these products and solutions have become more widely adopted, while others are just beginning to penetrate consumer markets. Finally, artificial intelligence will fully enter the fitness-related fields. Advances in artificial intelligence have made more responsive, customizable, and digital fitness assistants available every year. AI can make computationally precise decisions, but it cannot meet educators' trust needs in a human-like manner.

Consistent assurance of the spiritual level is essential for both the development of the individual and the overall purpose of the personality. This goal is supported by the Human Motivation Hypothesis.

Currently, artificial intelligence is being used to make home workouts safer, more personal, and as close to a fitness studio as one might expect. It helps keep human life healthy and fit.

To assist professionals in maintaining a good posture, the new brand Yoga Notch uses a wearable 3D motion finder. In late spring 2020, the mobile applications Onyx and Cure were released, along with the capability of evaluating stance. The image captured by the mobile phone offers a sense of repair when motion is examined using a 3D motion protection framework. Artificial intelligence has several advantages for fitness instructors, but that is not all. The primary factor that the computer is unable to imitate or accomplish is a total disgust with sports injuries. Fitness training is rarely easy, and problems, both small and major, may arise during the process. Conversely, AI is a sophisticated obstacle training tool.

SYSTEM ANALYSIS

It is clear from looking at studies that fitness apps have gotten better at tracking calories and exercise. However, they still do not connect well with diet plans that fit a person's culture. Users who need changes to their routines and nutrition plans based on their progress are not well supported. This is because many apps lack features such as adjusting workout plans on the fly and real-time health monitoring. A system that can adapt to your needs can make the experience more tailored. This tailored approach helps people stick to their health and fitness plans. Our analysis shows how FNW can offer a complete and flexible way to manage health and well-being. This approach fills gaps in the fitness and nutrition market. Compared to apps, FNW's approach to both nutrition and exercise, along with instant feedback from AI, provides a more dependable solution. FNW focuses on combining diet and exercise in a way that's more integrated. It uses technology to offer support that's both personalised and flexible. This can help users achieve their health goals effectively.

A. Existing System

It is clear from looking at studies that fitness apps have gotten better at tracking calories and exercise. However, they still do not connect well with diet plans that fit a person's culture. Users who need changes to their routines and nutrition plans based on their progress are not well supported. This is because many apps lack features such as adjusting workout plans on the fly and real-time health monitoring. A system that can adapt to your needs can make the experience more tailored. This tailored approach helps people stick to their health and fitness plans. Our analysis shows how FNW can offer a complete and flexible way to manage health and well-being. This approach fills gaps in the fitness and nutrition market. Compared to apps, FNW's approach to both nutrition and exercise, along with instant feedback from AI, provides a more dependable solution. FNW focuses on combining diet and exercise in a way that's more integrated. It uses technology to offer support that's both personalised and flexible. This can help users achieve their health goals effectively.

B. Proposed System

They have dubbed this new system the "Fitness Nutrition and Workout Tracker." Its objective is to provide answers for every issue that arises in other apps. Fit-bot is the name of the AI chatbot that comes with it. The FNW app greatly addresses long-standing issues and is significantly better than the outdated systems.

1. Insignia Suggested Meal Idea:

FNW provides flexibility in the many meal options to fit one's sub-lifestyle by using algorithms to create highly customised meal plans that satisfy user preferences and health objectives.

2. Set Exercise Routines:

FNW offers customised exercises for people of all fitness levels. The user may easily recognise and carry out fitness exercises on their own.

3. Integration of Fit-Bot:

An excellent virtual coach who provides quick advice or motivational speeches. Make the app engaging by asking users about their diet and fitness levels.

4. Monitoring Your Exercise:

Users may easily track and remain informed about their workouts and progress with FNW. To keep kids interested, it includes entertaining graphics that were created using fitness data.

5. Content for Education:

It discusses the issues related to being underweight or overweight and informs users about the impact of weight management on health.

METHODOLOGY

The Trainer is a tool that helps people who have a hard time with their mind and body get stronger and feel better. The main idea of this program is to give people advice on what foods are good for them based on their health and show them simple exercises that can make their body healthier by helping their mind. The Trainer wants to help anyone, no matter how old they are or how healthy they are, learn about the foods that can help them fight off sickness.

In this tool, there are four parts, which are as follows:

Creating and designing a knowledge base:

To create this personalised health application, a knowledge base must be designed and developed. I collected data from both random individuals and gym patrons to produce a more extensive and meaningful dataset. While fitness and yoga experts talk about basic at-home routines, experts and nutritionists advise understanding homeostasis and a basic at-home diet.

A knowledge base development needs to have specific qualities in order to do that. With a Nutrition Planning Module for personalised meal suggestions, a Workout Tracking Module for workout logs, and an AI chatbot (Fit-Bot) for coaching and real-time conversation, it was developed using a modular design.

A Training Model for Using Traditional Foods to Improve Physical Health:

Not everyone eats a diet. Some things affect what we eat, like how old we're if we are a man or a woman, what we do, how much we exercise, what kind of food our family eats and what we usually eat. When people have to stay at home, they often eat food that's bad for them, like food with a lot of calories, fat and sugar. They do not eat fruits, vegetables and foods that are good for their Traditional Foods body. This means they do not eat a diet that can cause health problems. If we do not eat well, our Traditional Foods body gets weak, we get sick easily, and our physical and mental health is not good. We cannot do our work properly. A healthy Traditional Foods diet has a variety of foods in amounts so our Traditional Foods body gets all the nutrients it needs to be healthy. Every person needs Traditional Foods to be healthy.

Traditional Foods needs are different for people like a baby, a child, a grown-up, a pregnant woman and an old person. Traditional Foods that have a lot of protein are good for our

muscles. These Traditional Foods include meat, fish, poultry, nuts, pulses, milk and milk products.

* Good Traditional Foods, for us give us vitamins and minerals. These Traditional Foods include fruits, vegetables, eggs, milk and dairy products.

A Training Model Using Fitness Trainer Testing to Enhance Physical Health:

The connection between being active and people's health is really clear. When you are healthy, you can focus on your work all the time. You can also avoid a lot of illnesses if you have a fitness routine. The American Heart Association says that people should do at least 75 minutes of hard exercise every week.

There are ways to stay active when you have to stay away from others, like when the gym is closed, and you are stuck at home. Fitness coaches can help you make a list of exercises that you like. That fits your situation. Fitness Trainer Testing is a way to get started with this.

If you like to exercise at home, it is not a problem because it is easy to do, even if you have a space and no special equipment. Here are some simple things you can do, like:

- Walking in a room
- Sitting down and then standing up from a chair over and over
- Playing with kids
- Choosing to stand up even when you can sit down
- Running up and down the stairs quickly. Fitness Trainer Testing can help you with this.

Fitness Trainer Testing is a way to make sure you are doing exercises that are right for you. With Fitness Trainer Testing, you can get help from a fitness coach. A fitness coach can help you make a plan that fits your life and helps you stay healthy with Fitness Trainer Testing. You can make a list of exercises that you like. Those are good for you, with the help of Fitness Trainer Testing.

A Yoga-Based Training Model for Increasing Physical Health:

Yoga is really good for you. It can help people of all ages feel better. Doing yoga just for a short time, like 20 minutes, can make a big difference. You can do it on a chair or on a mat; it is easy. Yoga is good for the human body and mind. When you do the poses and breathing exercises, it helps you breathe better. There are good things about yoga.

- * It helps keep you from getting sick
- * It helps you feel less stressed
- * It helps you stay at a weight.

Yoga can also help you not feel so worried or tense. It can help you not gain too much weight. Yoga is something that people of all ages can do to feel better.

Design of Inference Engine:

The way we figure out if someone is at risk for health problems is by looking at a lot of information from people of different ages and backgrounds. We use the person's health information to do this. We get help from various doctors and experts. This project has ideas from doctors and people who specialise in food, among others. We use computers to find patterns in the information and make conclusions that can help people get care. Here is a list of rules to decide if someone is overweight. We made this system in a way with different parts that work together. There is a part for tracking workouts, a part for planning meals that're just right for each person and a computer program that talks to people in real time to help them and give them advice. The patient's actual information and the system's

many parts, like the Workout Tracking Module, the Nutrition Planning Module and the AI chatbot, all work together to help people.

Personalised Dashboard for Big Data Analytics-Based Health Level Prediction:

In this digitised age, people employ personalised healthcare dashboards. Customisation is the process of providing the right diagnosis and treatment plan for every individual patient. The simple integration of critical patient-related operational data into a healthcare dashboard will simplify a person's life. Customised medication is suggested based on the engine's conclusions. Data on each individual is often maintained in terms of different facts. These would help us make consistent decisions and recommendations to the general public. To improve patient experiences, actual statistics are analysed, and specific therapies are suggested following the established criteria.

Fitness centres and fitness organisations can employ advantages like artificial intelligence to enhance new diet and nutrition practices, thanks to a revised timeline of fitness app upgrades. Diet-editing apps need to be AI-driven, whether they are preparing supper or giving calorie-counting instructions. With the aid of a self-modified diet plan calculation, these important points monitor the client's success in altering their eating habits.

FLOW OF DATA FOR THE PROBLEM

The following information will be fairly and interactively accessible to the user:

Nutrition Input: Using a user interface, the user enters pertinent background data like age, height, weight, food preferences, and health goals.

The Nutrition Module: The round when all user input is processed comes at the bottom of the stack. The external APIs make up a diet program's blueprint, which will provide consumers with corresponding menu recommendations.

Track Your Workout: Workouts inspired by an internal database will be recorded by the user. The system will record info about the type and length of each workout, and after it is finished, it will provide feedback.

AI Communication: The internal natural language processing robot is called Fit-bot. The system would respond to the user's questions about diet and fitness with helpful recommendations or words of encouragement.

Visualisation of data: This will include app features like Plotly for workout stats and nutritional breakdown; this feedback improves the gamification element to guarantee that the user maintains a healthy lifestyle by maintaining access, competencies, and ongoing improvement regarding healthy lifestyle choices, etc.

Feedback Cycle: In terms of food compliance and exercise, the user's contact with the system would justify their pushing back within the system to improve future recommendations and user experience. Better personal fitness and nutrition advice are encouraged by this data flow, which also creates more chances to change lifestyles in order to achieve health goals.

Results

Data Analysis and Data Set:

With the help of a friend, I went to the gym and got some data. I also made a survey to get opinions. My family and friends, both online and at the gym, gave me most of the info. This data is about what kinds of exercises people do.

What does the dataset actually contain?

This dataset has some details like:

- The name of the person who filled out the survey.
- The gender of the person who took the survey, if they wanted to share it.
- Age of the old person when they took the survey.
- How important is exercise to you?
- What do you think about the human fitness level? You can choose from Superb, Outstanding, Good, Acceptable, Insufficient and Unsuitable.
- How often do you exercise?

You can go every day. Just once or twice a week, or maybe three or four times a week or even five or six times a week, or you might not go at all.

Standardisation of Data

Data must be standardised to be in numerical form for system analysis because it is descriptive in nature. The process of organising a relational database using a set of standard forms to minimise data redundancy and enhance data integrity is known as normalisation.

Limitations

This work has some limitations. Getting my data was the first restriction I ran into. I had believed that arranging and giving out surveys would make it easy to obtain my data. As a result, I was unable to fully investigate the potential of my application's design and population. When I chose to study a new data analysis tool out of curiosity and a desire to learn more, I also encountered difficulties. To make the application more dependable, I'll organise my time better and look into more possibilities.

Conclusion

A customised health app that uses intelligence has been developed to improve a person's emotional well-being. This helps humans live a life by taking care of their physical and mental health.

Chatbot apps and virtual helpers are becoming popular. They are also helping people stay healthy. These chatbot apps are really helpful.

- * Customer service chatbots answer questions from people.
- * This helps human agents focus on tasks that need to be done.
- * There are sports apps out there, but also cheaper ones that do the same thing.
- * Yoga notch is an app that uses a sensor to help with yoga practice.
- * Fit uses your phone's camera to record videos of your progress.

The FNW app offers a solution for diet planning, exercise tracking and personal fitness monitoring. It is really helpful for people who want to stay fit.

- * It creates a customised diet plan using intelligence.
- * It has integrated exercises and a chatbot called Fit-Bot that serves as a coach to help users.
- * The app provides a fitness experience for each user.

The app takes into account user preferences. Works towards comprehensive personal health goals. It is designed to help people achieve their fitness goals.

- * It fills the gap in systems by combining nutrition and fitness tools in one place.
- * The shared interface allows users to interact with the app for both fitness and nutrition purposes.

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