AI-Driven Fitness

Service Design for Building Exercise Habits Among Beginners and Non-Enthusiasts.

MSC User Experience Engineering

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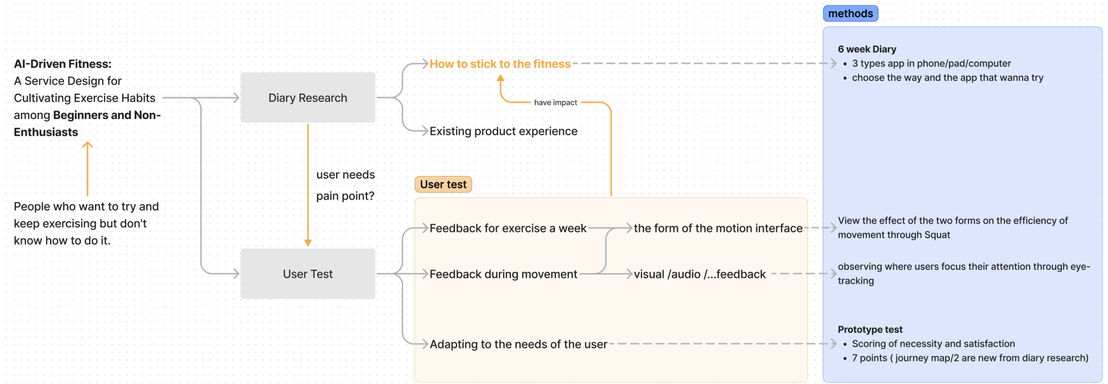
Abstract

[Aim] This study focuses on "AI-powered fitness" to help beginners and occasional exercisers build workout habits.

[Background] In today's fast-paced world, exercising is vital for physical and mental well-being. However, many struggle to start, especially newcomers. Their motivations and obstacles vary, demanding creative solutions.

[Research] Analyzing personal diaries studies motivations. Comparing exercises via EMG validates wireframes' efficiency and fun exercises' engagement. Testing personalized features' impact is vital.

Study Methodology



Conclusions & Future Work

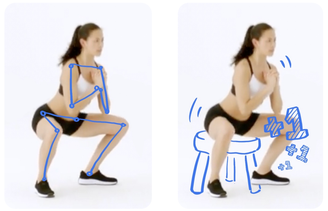
Artificial intelligence (AI) and virtual fitness training technologies offer new possibilities for beginners and non-enthusiasts to develop exercise habits. A personalised approach to exercise emphasises the importance of different motivations and barriers. Virtual platforms and real-time feedback can meet individual needs, while future work including diversity of participation, interface optimisation and long-term behavioural monitoring can further enrich the experience. Through in-depth research and innovative design, more people can be helped to enjoy healthy exercise and maintain active lifestyles.

Future Work

1. Diverse Participants: Incorporate different fitness levels and backgrounds for comprehensive insights.
2. Extended Duration: Lengthen Experiment 2 to reveal lasting effects of exercise forms.
3. Qualitative Insights: Use interviews/surveys for deeper understanding.
4. Enhanced UX: Augmented reality, gamification for higher engagement.
5. Long-term Monitoring: Wearables for ongoing behavior data collection.

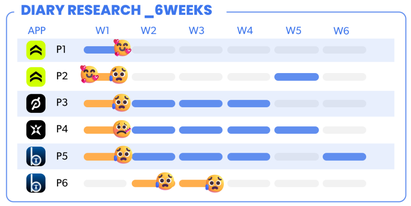
These steps hold potential to enrich findings and contribute to AI-driven fitness advancements, catering to individuals seeking healthier lifestyles.

Introduction



- In today's busy world, being healthy matters more than ever. Exercise helps the body and mind, but many struggle to start and keep up. Enter AI and virtual fitness, offering customized solutions.
- Traditional fitness plans don't fit everyone. Regular gym-goers seek improvement, while newcomers and those less keen have different reasons to exercise.
- Starting out, people want health and energy. Some look to fit in or unwind. Understanding these reasons is key for effective help.
- Challenges for beginners and the less keen include limited know-how, time, and feeling self-conscious. Solutions must fit their lives.
- AI and virtual fitness step in here. Virtual platforms are flexible and private, fitting busy schedules. AI tailors advice and tracks progress, helping starters. By tapping into AI and virtual power, tailored fitness solutions become a new way forward. This paper dives into how AI, motivation, and virtual fitness work together, showing their potential to make exercise a habit.

Research Results

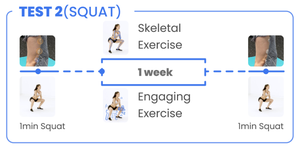


The diary study utilized thematic analysis, resulting in the following findings:

Finding01: Playful exercise captures users' interest swiftly but also leads to rapid loss of engagement.

Finding02: A primary incentive for individuals to initiate exercise is its ability to alleviate physical discomfort.

Finding03: Another significant factor motivating people to commence exercise is its perceived capacity to reduce physical discomfort.



In the first experiment, we aim to validate whether line-based exercise forms enhance efficiency and standardized postures by comparing muscle activation patterns and postural consistency. Additionally, we investigate if engaging exercise forms increase participation through exercise records and user feedback.

In the second experiment, we further examine the effects of line-based forms on efficiency and standardized postures by analyzing pre- and post-experiment EMG data and postural changes. Similarly, we assess the impact of engaging forms on participation by analyzing exercise frequency and body circumferences. Statistical analysis and design considerations are applied throughout the research.

Diagram / Design

This design focuses on aiding beginners and occasional exercisers in forming exercise habits. It includes features like post-registration inquiries about users' physical condition and intentions, assessments of physical function and fitness, and real-time feedback during workouts. Users can also evaluate and provide feedback on their exercise experiences. Through personalized guidance and engagement, the aim is to foster exercise habits and promote a health-conscious lifestyle.