



Introducing **FitArena Vision:** **REAL-TIME GAMIFIED WORKOUT APP**

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ABOUT THE PROJECT



FitArena Vision is a revolutionary, gamified fitness app that leverages computer vision to transform traditional workouts into interactive, engaging experiences.



By using real-time pose detection, it ensures correct form during exercises, reducing the risk of injury.



The app offers creative gamification elements, like virtual balloon popping with squats, painting canvases with pushups, and boss battles with punches, to make fitness fun and personalized.



Accessible with just a smartphone, FitArena Vision provides an immersive, cost-effective, and highly motivating way to achieve fitness goals.

Understanding Problems

5 Common Problems FitArena Vision Solves

1

Lack of Motivation

Traditional workouts often lack the motivation to keep users engaged.

2

Limited Feedback

Users often lack real-time feedback on their exercise form, increasing the risk of injury.

3

Absence of Engagement

Fitness experiences are often not engaging or interactive, leading to boredom.

4

Inefficient Personalization

Fitness routines often lack personalization, making them less effective for individual needs.

5

Low User Retention

Fitness applications often struggle with user retention due to lack of engagement and personalization.

Proposed Solution

4 FitArena Vision Solution

Pose Detection

Detect and validate exercise form in real-time.

Gamification

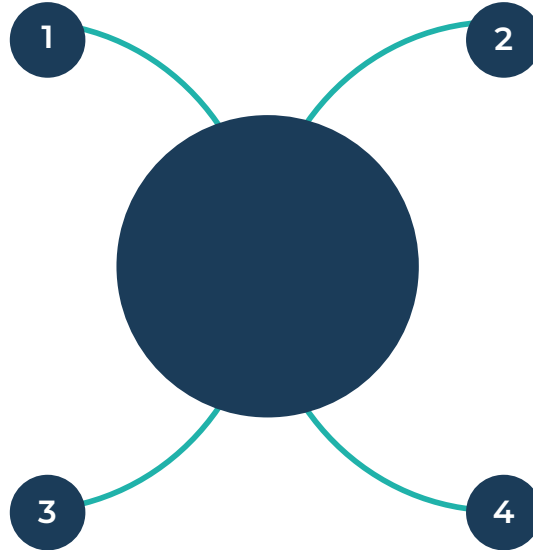
Add visual elements (e.g., balloons, stars) that users interact with during workouts.

Feedback Loop

Provide instant feedback on form accuracy and progress.

Social Engagement

Integrate leaderboards and challenges for competitive motivation.



6 Stage Process Diagram

Process Explained: How FitArena Vision Works

STEP 1: Camera Input

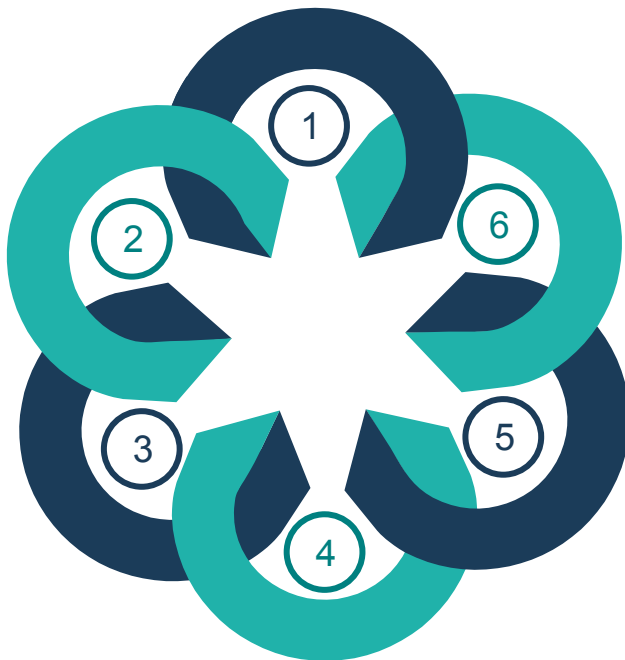
The app uses a smartphone to capture real-time video of the user during their workout.

STEP 2: Pose Detection

Keypoint Detection & Form Validation.

STEP 3: Real-Time Feedback

Visual Feedback, Audio Feedback and Gamified Feedback



STEP 6: Feedback Loop

The process continuously repeats: User adjusts their form → Feedback provided → Game responds.

STEP 5: Dynamic Gameplay

Introduces new challenges, such as faster balloon spawns

STEP 4: Game Integration with Body Movements

Correct movements triggers & controls the game

Features

Unique Selling Point (USP) Features

-  Real-Time Gamified Fitness
-  Creative Games
-  Dynamic Pose Validation
-  Accessibility

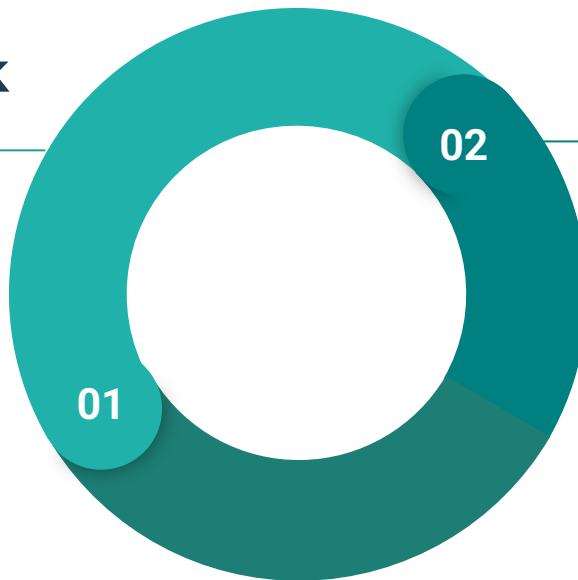
Core Features

-  Pose Detection
-  Gamification
- 

Technology

Technology Stack

- Frontend: HTML, CSS & JS
- Backend: No Backend
- Computer Vision: TensorFlow.js with Google's MoveNet
- Gaming Engine: Phaser.js 3



Other Libraries

- Web Audio & Speech Synthesis: Phaser Audio System & Web Speech API for TTS
- Real-time Video Processing: p5.js

Core Gamification

1

Easy Games

2

Point-Based System

3

Interactive Visuals

Benefits for The Users

GENERAL BENEFITS

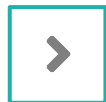
- Improved Fitness Levels
- Enhanced Motivation
- Anytime, Anywhere Workouts
- Flexibility
- Cost-Effectiveness

UNIQUE BENEFITS

- Real-Time Pose Detection and Correction
- Gamified Workouts
- Accessibility Without Equipment
- Minimalistic Requirements
- Inclusive Features for All Fitness Levels

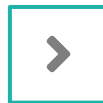
Creative Games & Exciting Modes

GAMES



**Clap & Dash Dino Run - Dino
Game with Clapping Pushups**

MODES



Endurance Mode



Skill Mode



Conclusion



FitArena Vision stands poised to revolutionize fitness by merging gamification, computer vision, and user engagement in a unique and impactful way.



Its innovative integration of these elements promises to empower users, enhance motivation, and foster a more inclusive and enjoyable fitness experience.



With its vast market potential and ongoing development, FitArena Vision is set to shape the future of fitness, inspiring healthier and happier lives for individuals around the world.