

Mobile Application for Supporting and Motivating Yoga Practice

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Abstract

This work creates a mobile app that supports yoga practice by enabling users to effortlessly track visual progress, capture photos during workouts, and monitor improvements over time. Following the User-Centered design methodology, a solution was developed that fills gaps in existing applications by providing seamless documentation of practice with motivational elements. The Android prototype was implemented in Kotlin with Jetpack Compose and continuously refined through iterative user testing. The application offers an intuitive progress-tracking system that enhances user motivation and consistency in yoga practice.

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1. Introduction

While yoga practice continues to gain popularity worldwide, current mobile applications focus primarily on providing workout plans rather than helping practitioners visually track their progress. The ability to document improvements in poses visually can significantly enhance motivation and consistency in practice, addressing a key need identified by yoga practitioners.

The problem is creating an application that allows yoga practitioners to 1) easily capture photos during practice without interrupting their flow, 2) track their progress through visual comparison over time, and 3) maintain consistent practice through effective motivation systems. Success parameters include ease of use during workouts, quality of visual progress tracking, and effectiveness of motivation features.

Current yoga apps like Daily Yoga [1], Yoga for Beginners [2], and Zenia [3] provide structured training plans, instructional content, and statistical tracking (sessions, time, calories). However, they lack visual progress tracking, which user research identified as a powerful motivator. No existing solution combines real-time photography during yoga practice with visual progress comparison and integrated motivational elements.

Following the User-Centered Design methodology [4] (an example is shown in Figure 1), was developed a yoga progress-tracking app that uses modern Android

technologies (Kotlin, Jetpack Compose [5]) with a focus on intuitive user experience. The app is designed to help users document their yoga journey, organize photos by pose, visually track progress, and stay motivated through a personalized streak score system based on individual goals rather than consecutive days.

Key contributions include: 1) A user interface concept for hands-free photography tailored to yoga practice, 2) A gesture-based progress-tracking interface that compares pose improvements over time, 3) An innovative streak score system that adapts to individual training frequencies, and 4) A customizable dashboard that adapts to user preferences.

2. App Design and Features

The application follows Material 3 design principles¹ with a calming yet energetic color palette (dark green, orange, light beige) and Montserrat [6] typeface for readability. The design was created using Figma², and graphic illustrations were created using Adobe Illustrator³. As shown in the poster, the app consists of four main components.

¹<https://m3.material.io>

²<https://www.figma.com>

³<https://www.adobe.com/uk/products/illustrator.html>

2.1 Dashboard

The customizable dashboard displays a streak score, total training time, calories burned, last session details, daily challenges, and planned activities. Users can edit the layout according to their preferences (Figure 2).

2.2 Session History

Users can browse past workouts by date, view details including poses practiced, add notes and assign emojis to sessions. A timelapse bar visually represents different yoga categories (strength, flexibility, relaxation, balance) practiced during each session (Figure 3).

2.3 Capturing

The app's camera interface with CameraX integration⁴ will allow automatic photo capture during yoga sessions in the future. Users can select specific poses they want to capture, switch between front and rear cameras, and start/stop recording. The app recommends previously practiced poses for quicker selection (Figure 4).

2.4 Progress Tracking

The most innovative feature allows users to view photos sorted by individual poses practiced in past sessions. Users can browse a chronological gallery of their attempts when selecting a pose. The "See Progress" function enables comparison of multiple photos over an extended period, showing improvement visually (Figure 5).

Figure 6 shows images of the Downward Dog pose aligned with Adobe Photoshop⁵, ensuring consistent pelvic positioning, leg alignment, and accurate progress tracking.

3. Key Technical Components

The application is developed in Kotlin, using the Jetpack Compose framework.

3.1 MVVM Architecture and Data Management

The application uses MVVM architecture [7] with Room database [8] for local storage, ensuring user data privacy. Asynchronous data processing with ViewModels⁶ and LiveData⁷/StateFlow⁸ provide reactive UI updates.

⁴Android CameraX docs

⁵Adobe Photoshop

⁶Android ViewModel docs

⁷LiveData overview

⁸StateFlow overview

3.2 Streak Score System

Unlike traditional "days in a row" tracking, this streak score uses a percentage calculation based on user-defined weekly training targets. The formula inspired by the Loop Habit Tracker App [9] considers the training frequency over the past seven days, with a boost factor to exceed targets as shown in Evaluations 1 and 2, where f is the training frequency, f_t is the target frequency, S_p is previous streak score, c indicates if the user exercised and B is the boost factor.

3.3 Gesture Handling

The gallery implements intuitive gestures: long-pressing activates the selection mode, tapping selects or opens image details, and pinch gestures adjust the number of images per row. In image detail, swiping navigates between images, and fullscreen mode activates with double-tap or zoom.

4. Conclusions

Our user-centered design approach resulted in an application that effectively addresses the need for visual progress tracking in yoga practice. User testing confirmed the effectiveness of gesture-based navigation, customizable dashboard, and innovative streak score system. Future work includes implementing gamification elements, integrating neural networks for automatic pose recognition [10] and image alignment, improving gallery animations, adding a beginner's guide, and enhancing dashboard customization with drag-and-drop gestures. The application is currently available on Google Play; scan the QR code from the poster to access it.

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