

# Project Document

## Introduction

In Nepal, where lifestyle diseases and mental health challenges are rising among youth, access to preventive healthcare remains limited. Existing solutions often ignore local contexts—like Nepali dietary habits, limited gym access, and stigma around mental health—while failing to leverage wearable technology for personalized insights. **HealthGuardian** addresses this gap as an AI-powered mobile app that combines hyperlocal health coaching, anonymous AI therapy, and smartwatch-driven anomaly detection to empower users with affordable, culturally relevant wellness tools. By merging global tech innovation with Nepal-specific needs, the app aims to transform reactive healthcare into proactive, community-driven well-being.

## Problem Statement

Nepal's youth face a growing crisis of preventable lifestyle diseases like diabetes and hypertension, fueled by poor diets, sedentary habits, and unaddressed stress. Mental health stigma further isolates individuals, discouraging them from seeking help. Existing health apps lack localization—ignoring Nepali dietary staples, affordable workout options, and cultural barriers—and fail to integrate wearable device data for personalized, proactive health insights. This gap leaves users without accessible tools to prevent health risks, increasing reliance on Nepal's overburdened healthcare system.

## Objectives

1. **Provide personalized, Nepal-centric health routines** that adapt to users' lifestyles, leveraging local ingredients and no-equipment workouts.
2. **Offer 24/7 anonymous mental health support** through an AI therapist to reduce stigma and encourage early intervention.
3. **Integrate wearable device data** to detect health anomalies (e.g., irregular heartbeats, chronic stress) and deliver actionable alerts.
4. **Build a scalable platform** that partners with local businesses (gyms, clinics) to expand access to affordable wellness resources.

## Proposed Solution

HealthGuardian is a mobile app that acts as a **24/7 AI health coach**, combining three core features to tackle Nepal's wellness challenges:

1. **Personalized Routines:** Using user inputs (age, diet, goals) and Nepali context (e.g., dal-based meals, home workouts), the app generates daily plans like “*15-min yoga + spinach curry recipes*” and adapts them weekly based on progress.
2. **AI Therapist:** A privacy-focused chatbot offers anonymous emotional support, using NLP to suggest coping strategies (e.g., “*Try a 5-minute breathing exercise when stressed*”) and escalate critical cases to partner clinics.
3. **Smartwatch Health Guard:** By syncing with wearables, the app detects anomalies (e.g., irregular sleep, rising heart rate) and sends gentle nudges like “*Your stress levels spiked today—let’s adjust your evening routine!*” Built with **React Native, TensorFlow, and Fitbit/Twilio APIs**, the app prioritizes simplicity while delivering hyperlocal, actionable care.

## Tech Stack

- **Frontend:** React Native
- **Backend:** Python (FastAPI), Firebase
- **AI/ML:** TensorFlow, Gemini, DeepSeek
- **Database:** Firebase Firestore, PostgreSQL

## Expected Impact

HealthGuardian aims to empower 50,000+ Nepali youth to adopt healthier habits, reducing preventable diseases like diabetes by 20% through early anomaly detection and localized routines. The AI Therapist will break mental health stigma by providing 24/7 anonymous support, reaching 10,000+ users in its first year. By partnering with local businesses and aligning with Nepal’s Digital Transformation goals, the app will bridge tech innovation with community wellness, creating a sustainable model for preventive healthcare.

## Conclusion

HealthGuardian reimagines preventive healthcare in Nepal by merging AI, IoT, and hyperlocal context to empower users with accessible, culturally relevant wellness tools. From personalized routines using Nepali ingredients to AI-driven mental health support and smartwatch-powered anomaly alerts, the app bridges the gap between technology and community needs. By prioritizing simplicity, scalability, and stigma-free care, HealthGuardian aims to foster a proactive health culture, reducing the burden on Nepal’s healthcare system and advancing Digital Nepal’s vision of tech-driven public good.

## Team Details

Team Name: **TriAgain**

Project Name: **HealthGuardian**

Institution: **Kathmandu University**

Team Members:

- **Ashish Gupta**
- **Rubina Dangol Maherjan**
- **Santit Shakya**

Contact:

- **+977 980 920 4764**
- **haitomns4173@gmail.com**