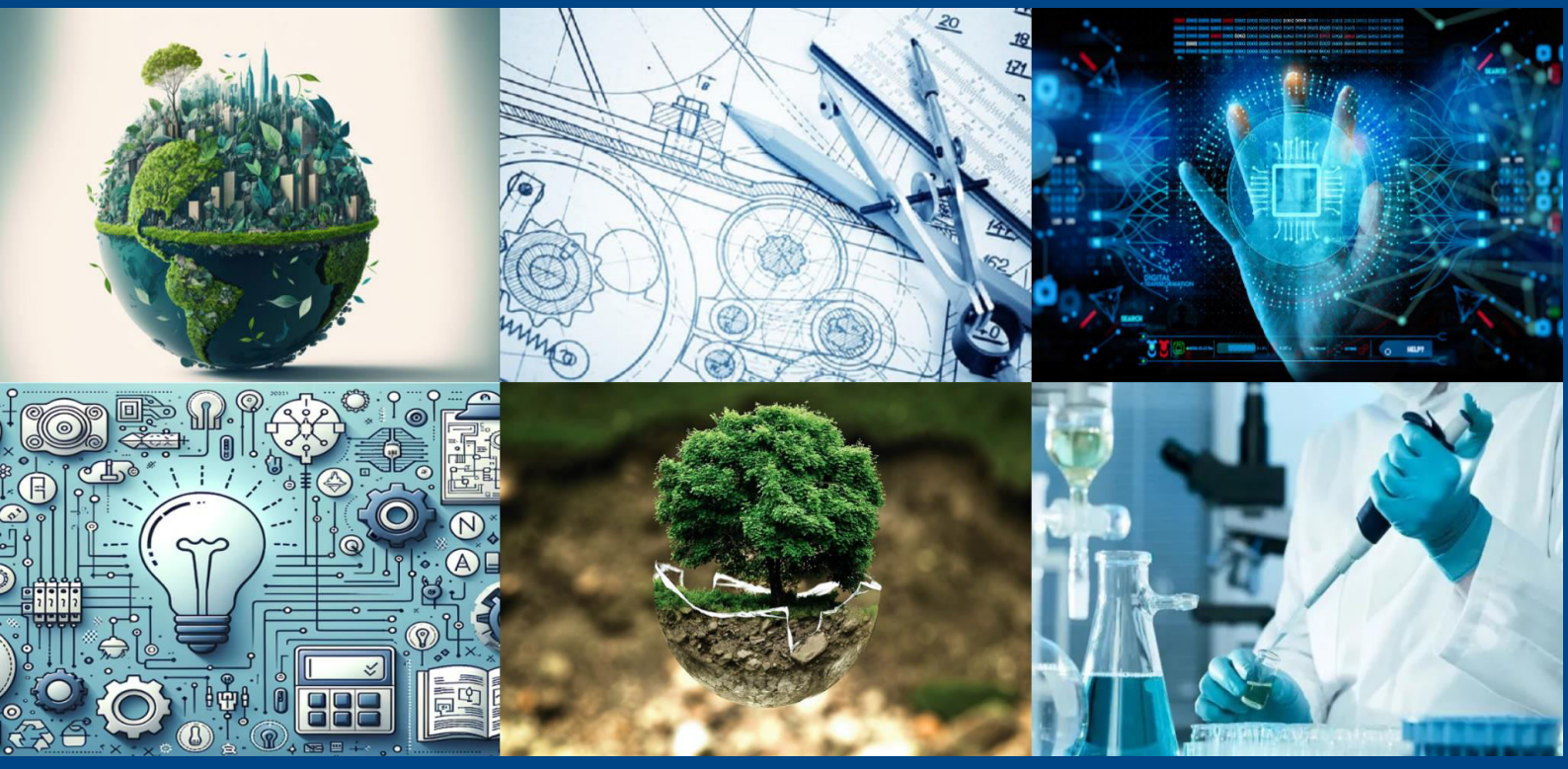
ISSN: 2582-7219

International Journal of Multidisciplinary Research in Science, Engineering and Technology

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)



Impact Factor: 8.206 **Volume 9, Issue 3, March 2026**

© 2026 IJMRSET | Volume 9, Issue 3, March 2026| DOI:10.15680/IJMRSET.2026.0903159

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

HealthGuard AI - AI-Driven Public Health Chatbot for Disease Awareness

Om Bait, Sarthak Surshetwar, Raj Bhere, Aditya Sawant, Chetashri Bhusari

Dept. of Information Technology, Vidyalankar Polytechnic, Mumbai, India

Dept. of Information Technology, Vidyalankar Polytechnic, Mumbai, India

Dept. of Information Technology, Vidyalankar Polytechnic, Mumbai, India

Dept. of Information Technology, Vidyalankar Polytechnic, Mumbai, India

Dept. of Information Technology, Vidyalankar Polytechnic, Mumbai, India

ABSTRACT:

- Product Definition: HealthGuard AI is a comprehensive, native-style Mobile Application designed as an intelligent health companion.
- Core Technology: Utilizes AI (openai/gpt-oss-120b) to create a personalized, conversational interface for health guidance and awareness.
- Primary Problem Solved: Combats the lack of accessible, reliable health information, the spread of misinformation, and delays in seeking professional care.
- Key Functionality: Includes an AI-powered Symptom Checker, Disease Encyclopedia, Health Risk Assessment, Medication Reminders, and Emergency Information.
- Accessibility Focus: Engineered with Offline Mode and Multilingual Support to ensure high reliability and broad accessibility, regardless of connectivity or language barriers.
- Overall Goal: To empower users with verified, evidence-based health knowledge for self-management, while strongly emphasizing the necessity of professional medical consultation.

I. INTRODUCTION

HealthGuard AI is a mobile application that leverages AI to provide personalized health guidance. It addresses critical gaps in the healthcare landscape by offering real-time health information, symptom checking, and preventive care recommendations.

- **Target Audience:** Health-conscious individuals, patients with chronic conditions, healthcare students, and users seeking reliable information.
- **Core Problems Solved:** Combatting misinformation, providing immediate guidance, and increasing the accessibility of verified health data.

II. LITERATURE REVIEW

Several research studies indicate that AI-based healthcare chatbots improve user engagement, early symptom recognition, and health awareness. Chatbots have been widely applied in mental health support, appointment scheduling, and chronic disease management. Studies also show that conversational interfaces are more effective than static health applications due to their interactive nature.

However, existing systems often suffer from limitations such as lack of personalization, dependence on continuous internet connectivity, limited language support, and absence of emergency assistance features. Literature suggests the need for integrated, intelligent systems that combine AI-powered conversation, offline access, multilingual support, and reliable medical data sources. HealthGuard AI is designed to address these gaps identified in prior research.

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

III. FEATURES

A] System Overview HealthGuard AI serves as an intelligent triage tool, helping users distinguish between minor ailments and emergencies while I am a **multimodal AI** designed to be an insightful and empathetic combating misinformation through verified, AI-driven guidance. It thought partner. I can generate **text, images, and video**, and I'm enhances chronic disease management via medication reminders capable of analyzing complex files or discussing real-time content and provides life-saving first-aid access through its offline and via Gemini Live. Whether you need help with **coding and system** multilingual features, which are vital for underserved or rural **design**, creative projects, or organized data analysis, I balance populations. By offering instant health education and local technical precision with a conversational tone to help you reach emergency data, the app promotes preventive wellness and reduces your goals. the administrative burden on hospitals. Ultimately, it acts as a proactive health companion, empowering users to monitor their

- AI-Powered Chatbot: Interactive interface using for natural well-being and seek timely professional care when necessary.
  language queries.
- Symptom Checker: A guided tool to help users understand
  potential health concerns.
- Disease Encyclopedia: A comprehensive database of symptoms, causes, and treatments.
- Medication Reminders: Smart notifications to ensure adherence to medication schedules.
- Emergency Info: Integration of local emergency contacts and first-aid procedures.
- Offline Mode: Ensures critical health information is accessible without an internet connection.

B] Modules/Users

The Core Modules of HealthGuard AI are designed to provide a seamless, end-to-end user experience, centered around an AI Chatbot that serves as the primary conversational assistant for realtime health queries. This is complemented by a structured Symptom Checker, which utilizes a step-by-step diagnostic logic to help users understand potential health concerns, and a comprehensive Disease Encyclopedia that offers a searchable, verified library of medical conditions, symptoms, and treatments. To ensure user safety and data integrity, the system incorporates a

User Authentication module powered by Supabase, providing secure profile management and personalized health tracking.

C] Applications

The project relies on the collaboration of key Stakeholders to ensure its success, safety, and growth. End Users, ranging from the general public to patients with chronic conditions, represent the primary focus, utilizing the app for immediate health information and routine tracking. Behind the scenes, Product Owners manage the strategic vision and ensure the platform adheres to strict regulatory standards, while Medical Advisors play the critical role of validating all AI-generated content to maintain the highest levels of clinical accuracy and reliability.

IV. TECHNOLOGY USED

The technology stack for HealthGuard AI is built for high performance and cross-platform efficiency. The frontend is developed using Flutter and Dart, providing a responsive, nativestyle user interface for both Android and iOS. The backend leverages Supabase for secure user authentication and robust database management, ensuring real-time data synchronization and high reliability.

V. FUTURE SCOPE

The HealthGuard AI is strategically designed to evolve into a comprehensive health ecosystem by expanding its digital capabilities beyond simple information delivery. A key component of this growth is wearable integration, which will allow the app to connect with smartwatches and medical devices to automatically log critical vitals such as blood pressure and glucose levels in real-time. This data-driven approach is further enhanced by predictive analytics, where the system analyzes a user's health history and physiological trends to forecast long-term risks for conditions like diabetes or hypertension.

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

To provide a more holistic care experience, the platform will also incorporate a mental health module featuring stress checkins and mindfulness tips to support overall emotional wellbeing. Finally, the app will bridge the gap between digital guidance and clinical care through telemedicine features, enabling users to book online consultations with certified doctors directly within the interface. These advancements transform HealthGuard AI from a simple health companion into a proactive, all-in-one healthcare management solution.

VI. ACKNOWLEDGMENT

We would like to express our sincere gratitude to our institution for providing the necessary infrastructure, resources, and academic environment that supported the successful completion of this project.

We extend our heartfelt thanks to our **project mentor** for their continuous guidance, valuable suggestions, and constant encouragement throughout the duration of the project. Their expertise and constructive feedback played a crucial role in improving our understanding and shaping the overall outcome of this work.

We are also thankful to the faculty members and the department for their cooperation and support, which enabled us to explore the project effectively. Finally, we acknowledge everyone who directly or indirectly contributed to the successful completion of this project.

REFERENCES

[1] **Gvajaia, G.** (2024). Artificial intelligence in the medical field: diagnostic capabilities of GPT-4 in comparison with physicians. Journal of Medical Artificial Intelligence.
[2] **NIH / National Library of Medicine.** (2025). Evaluating GPT-4o in infectious disease diagnostics and management.
[3] **Frontiers in AI.** (2024). Enhancing diagnostic accuracy in symptom-based health checkers.
[4] **World Health Organization (WHO).** (2021). Digital health for the prevention and control of noncommunicable diseases.
[5] **Mamidi, S.** (2022). Mobile Health Apps for Chronic Disease Management. Journal of Health Statistics Reports.
[6] **Iribarren, S. J., et al.** (2020). Effectiveness of Mobile Apps to Promote Health and Manage Disease. JMIR mHealth and uHealth.
[7] **Shaikh, S., et al.** (2022). Healthcare Consultation Android Application using Flutter. IJARSCT.
[8] **Supabase Guide.** (2024). Building Scalable Backends with PostgreSQL and Real-time Subscriptions.
[9] **Dart & Flutter Documentation.** (2025).
Asynchronous Programming: Streams and Futures.
[10] **World Health Expo.** (2023). The integration of wearables in telemedicine for remote patient monitoring.

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH

IN SCIENCE, ENGINEERING AND TECHNOLOGY

| Mobile No: +91-6381907438 | Whatsapp: +91-6381907438 | ijmrset@gmail.com |

www.ijmrset.com