

GEEKATHON '26

Project Abstract Topic: PCO-Guard

Team Name: HackBreachers

Domain: Biomedical and Healthcare Management System

Category: Software

1. Problem Statement

The health landscape for women in India is currently facing a significant challenge: approximately 1 in 5 women suffer from PCOS or PCOD. This surge is largely attributed to modern sedentary lifestyles and poor dietary habits, yet many cases remain undiagnosed, misinformed, or unsupported due to a lack of proactive awareness tools.

2. Proposed Solution

PCO-Guard is a comprehensive, AI-driven web application designed for proactive and holistic management of hormonal health. The platform moves beyond simple tracking by integrating AI analysis with lifestyle interventions to empower women with actionable health insights.

3. Core Features

The platform offers a multi-layered approach to wellness:

Menstrual Cycle Tracking: Provides women with detailed insights and pattern recognition for their cycles.

AI-Powered Symptom Analysis: Utilizes intelligent pattern recognition to predict potential PCOD risks based on user-reported symptoms.

Personalized Diet Charts: Generates recommended nutrition plans specifically crafted to support and restore hormonal balance.

AI-Guided Yoga Modules: Features specific exercise routines and yoga modules designed to aid in hormonal regulation.

4. Technical Approach

PCO-Guard is built on a robust, scalable stack:

Frontend: Developed using React.js and Tailwind CSS for a responsive user experience, with Chart.js for data visualization.

Backend: Powered by Node.js, Express.js, and Firebase for secure data management.

Future Roadmap: Plans include the integration of Python-based ML models for advanced predictive analytics and IoT device synchronization for real-time activity tracking.

5. Feasibility and Impact

The project is highly feasible due to its cost-effective implementation using open-source libraries. It is designed for scalability, including future multi-language support to reach rural Indian populations where health awareness is critical. By prioritizing data privacy, the platform ensures sensitive health records remain confidential.

PCO-Guard aims to revolutionize women's healthcare by significantly reducing long-term health risks through early intervention. This proactive approach provides both social empowerment and an economic advantage by minimizing future medical expenses for users.