Team Hexagon6

Problem Statement Title: AI-Enhanced Healthcare Diagnostics and Management System inspired by ZK Medical Billing Platform

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Problem Statement

AI-Enhanced Healthcare Diagnostics and Management System inspired by ZK Medical Billing Platform

Create an advanced healthcare diagnostics and management system using AI/ML technologies, inspired by ZK Medical Billing Platform

The goal is to enhance medical diagnostics, patient management, and treatment planning through intelligent data analysis and automation.

Opportunity

Leveraging the power of AI and machine learning, this system offers an advanced solution for healthcare diagnostics and management, inspired by the ZK Medical Billing Platform.

The opportunity lies in revolutionizing patient care by providing accurate diagnostics, streamlined patient management, and personalized treatment planning.

By automating and intelligently analyzing medical data, this system not only enhances the efficiency and effectiveness of healthcare providers but also improves patient outcomes, ultimately transforming the healthcare industry.

PROPOSED SOLUTION

The proposed solution involves the development of an AI-powered healthcare system that integrates three AI models to address the needs of chronic disease prediction, general disease diagnosis, and personalized medicine recommendation.

- Chronic Disease Prediction Model -This AI model is trained on extensive patient data, including lifestyle factors, medical history, and genetic information. It can predict the likelihood of chronic diseases such as diabetes, heart disease, and hypertension.’

- General Disease Prediction Model- The model focuses on diagnosing a wide range of diseases based on symptoms. Using machine learning algorithms, it analyzes patient inputs such as symptoms to accurately diagnose conditions.

- Medicine Recommendation Model-:Once a diagnosis is made, this model provides personalized medicine recommendations tailored to the patient’s specific condition, medical history, and potential drug interactions. It leverages a vast database of pharmaceutical information and clinical guidelines to suggest the most effective and safe treatment options.

TECH STACK

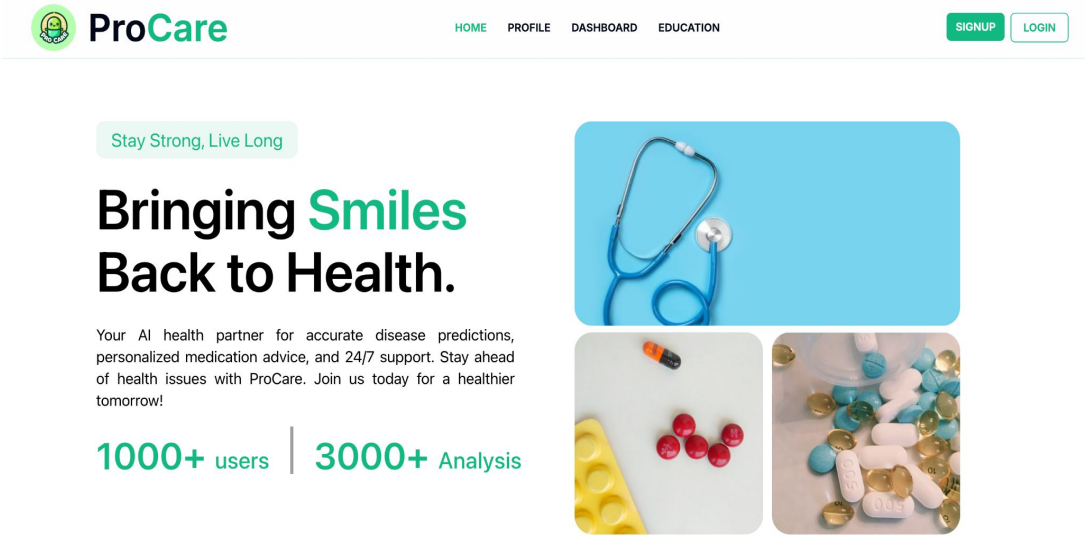
- Data Processing
  - Pandas, NumPy, Scikit-learn, Matplotlib
- Machine Learning Framework
  - Tensorflow, Pytorch, Google Colab, Optuna
- Frontend and Backend
  - Nextjs, tailwind, figma
  - Nodejs, Flask,
- Database
  - MongoDB

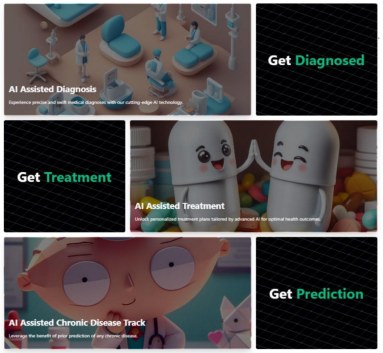
WORKING OF PROTOTYPE

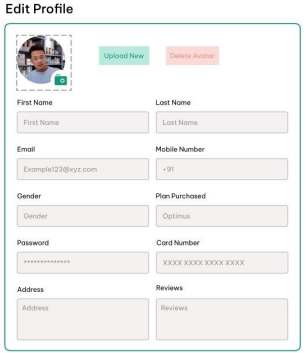
Go to Website

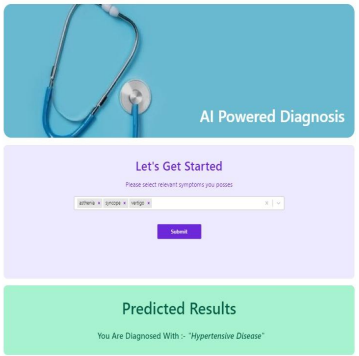
- Go to get Treatment Page
  - Enter the form and submit
    - Get Recommended Medicine and Treatment Options
- Go to Get Diagnose Page
  - Enter the form and submit
    - Get the details of the possible disease you are suffering from
- Go to Get Prediction Page
  - Enter the form and submit
    - Get the chances of the developing chronic disease in future
- Go to education Page
  - You will see the educational content
    - Click on the content to see more
- Got to dashboard / Profile
  - Edit your profile
    - See Personalised treatment options

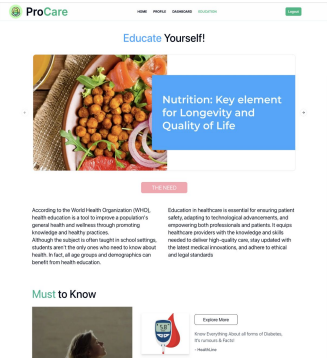
USER INTERFACE











Unique Selling Proposition

- The AI-Enhanced Healthcare Diagnostics and Management System stands out with its ability to deliver precise, AI-driven medical diagnostics and personalized treatment plans, accessible anytime, anywhere.
- Unlike traditional healthcare systems, this platform integrates advanced machine learning algorithms to analyze vast amounts of patient data, enabling early detection of diseases and tailored healthcare solutions.
- The system's scalability and ability to provide high-quality diagnostics remotely make it particularly valuable in underserved and rural areas, addressing a critical gap in India's healthcare infrastructure.
- This combination of cutting-edge technology, accessibility, and personalized care sets it apart from conventional healthcare solutions, offering unmatched efficiency and patient outcomes.

Business Model

- Value Proposition- The system provides AI-powered detection and diagnosis of chronic disease and also suggest the recommended medicine and cure the customer can take. This allows user to access healthcare service online reducing the need of physical visits.

- Customer Segments- The customer segments includes Patients who want to monitor their health and get recommendation for treatment, Health Care Provider who need AI tools to assist in diagnosis.

- Channel- The primary platform for the user to access service is web application ProCare. However in later stages a personalised mobile application can also be used.

- Revenue Streams-For generating revenue, we will implement a Subscription Model where users are charged a monthly fee based on the plan they choose. Each plan offers different levels of access to our services, ranging from basic disease detection and general medicine recommendations to more advanced features like personalized treatment options.

- Key- Partnership- Our partnership includes with Health-care Provider, Pharmaceutical companies and Regulatory Bodies

Market

- India's healthcare market, valued at $372 billion in 2022, is rapidly embracing digital health solutions, driven by a 27% CAGR in telemedicine adoption post-COVID.
- With 70% of the population living in rural areas and facing limited access to specialized care, AI-enhanced diagnostics and management systems can fill critical gaps.
- The government's digital health initiatives further support the integration of such technologies, making India a prime market for AI-driven healthcare innovations.