



AI-Driven Healthcare Chatbot

Revolutionizing Access to Medical
Information

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AI-Driven Healthcare Chatbot

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INTRODUCTION

Modern healthcare often faces challenges such as delayed diagnosis and inaccessible information.

The AI-Driven Healthcare Chatbot aims to bridge gaps between patients and healthcare providers.

Key features include disease prediction using Decision Tree algorithms and enhanced communication through NLP.

EXISTING WORK WITH LIMITATIONS

The background features abstract geometric shapes, including triangles and circles, in shades of blue and white. Two large white circles overlap in the lower-left quadrant. The overall aesthetic is modern and tech-oriented.

Challenges:

Lack of reliable online health information.

Overburdened healthcare professionals.

Limited access in rural or underserved areas.

Need: A reliable, accessible, and scalable solution for providing accurate health information and assistance.

PROPOSED WORK AND METHODOLOGY

Approach:

Develop an NLP-based chatbot for user interaction.

Use a Decision Tree algorithm for disease prediction.

Integrate with existing telemedicine platforms.

Steps :

- Data collection and preprocessing.

- Model training and evaluation.

- Deployment and user testing.

Novelty of the Project

Combines AI and healthcare for real-time assistance.

Focuses on accurate symptom checking and triaging.

Prioritizes data security and user privacy.

Continuous availability (24/7).

REAL-TIME USAGE

01 Symptom Checking and Preliminary Diagnosis.

03 Emergency Guidance and First Aid Support.

02 Appointment Scheduling and Medication Reminders.

04 Post-operative Care Monitoring.

HARDWARE AND SOFTWARE REQUIREMENTS

Hardware:

Processor: Multi-core (Intel i5/i7, AMD Ryzen).

RAM: At least 16 GB.

Storage: SSD (256 GB or more).

GPU: NVIDIA GTX/RTX series (optional).

Software:

Programming Languages:
Python, JavaScript.

Libraries: TensorFlow, NLTK, Flask.

Deployment: AWS, Azure, or Google Cloud.

OVERALL SYSTEM ARCHITECTURE

- 01** Architecture Diagram:
- 02** User interacts with chatbot.
- 03** NLP processes input.
- 04** AI engine predicts diseases.
- 05** Database manages user data and responses.
- 06** Feedback loop for continuous improvement.

LITERATURE REVIEW

Review of related work on
disease prediction
algorithms.

Analysis of existing chatbots
in healthcare.

Key findings and gaps
addressed by this project.

MODULE WORKFLOW EXPLANATION

Workflow:

User input is processed by the NLP module.

Relevant symptoms are extracted.

Prediction engine provides possible diagnoses.

Results are presented with next steps.

MODULE DESCRIPTION

Modules:

NLP Module: Analyzes and interprets user queries.

Prediction Engine: Uses Decision Tree for diagnosis.

Database: Stores and retrieves user interaction data.

IMPLEMENTATION AND CODING

01 Implementation Details:

■ **02** Preprocessing user data with NLP.

■ **03** Training Decision Tree model on medical datasets.

■ **04** Developing APIs for seamless integration.

05 Sample code snippets for key functionalities.

TESTING

Testing Methodology:

Functional Testing: Ensures chatbot responses match queries.

Performance Testing: Measures speed and reliability under load.

User Testing: Feedback on usability and accuracy.

Results:

- **High accuracy in disease prediction.**

Positive user feedback.

RESULTS AND DISCUSSION

Findings:

Enhanced accessibility to reliable health information.

Reduced waiting time for initial diagnosis.

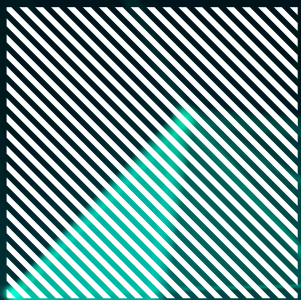
Improved user satisfaction.

Discussion:

Impact on healthcare accessibility.

Potential for scalability and integration.

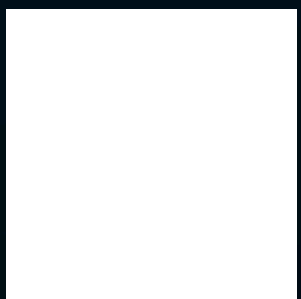
CONCLUSION



The chatbot bridges critical gaps in healthcare delivery.



Combines AI, NLP, and secure infrastructure for user benefit.



Future Scope:

Voice interaction.

Wearable device integration.

Expanded mental health support.

The background features a dark blue gradient with abstract, glowing wireframe structures. On the left, a blue wireframe structure resembling a series of connected triangles or a low-poly mesh extends from the bottom left towards the center. On the right, a teal wireframe structure, also composed of interconnected triangles, extends from the top right towards the center. These structures create a sense of depth and modern, technological aesthetics.

THANK YOU!