Team Optimizer

MediBot

Diagnosis and Prescription, Simplified !

Background

- Many patients experience delays and errors in diagnosis and prescription, especially in regions lacking expert medical professionals.
- Symptoms can overlap across diseases, making accurate and rapid identification challenging.
- Determining proper medications and dosages requires expertise, up-to-date guidelines, and patient-specific factors.
- AI advancements in healthcare now allow analysis of symptoms, disease prediction, and personalized treatment recommendations.

Problem Statement

- Patients often face delays and errors in disease diagnosis and medication prescription.
- Complexity and overlap of symptoms make rapid and accurate identification challenging.
- Determining correct medications and dosages requires expertise and patient-specific data.
- Goal: Build an AI assistant that predicts diseases from symptoms and recommends safe, guideline-based medications.

Methodology & Approach

- Symptom Input: Users provide structured or unstructured symptoms.
- Preprocessing: AI cleans and encodes inputs for analysis.
- Disease Prediction: AI/ML model identifies the most probable disease(s).
- Medication Recommendation: Suggests first-line medications with dosage, route, frequency, and duration.
- Safety Checks: Provides precautions, contraindications, and flags uncertain cases for human review.
- Feedback Loop: Incorporates user or clinician feedback for continuous improvement.

Tech Stack

AI & ML	Data Sources	Backend & Deployment	Frontend / Interface
• Python, TensorFlow / PyTorch, scikit-learn • Natural Language Processing for symptom analysis	• Medical guidelines • Symptom-disease databases	• FastAPI / Flask for API • Cloud deployment (Render)	• Web or mobile application • Simple and user-friendly UI

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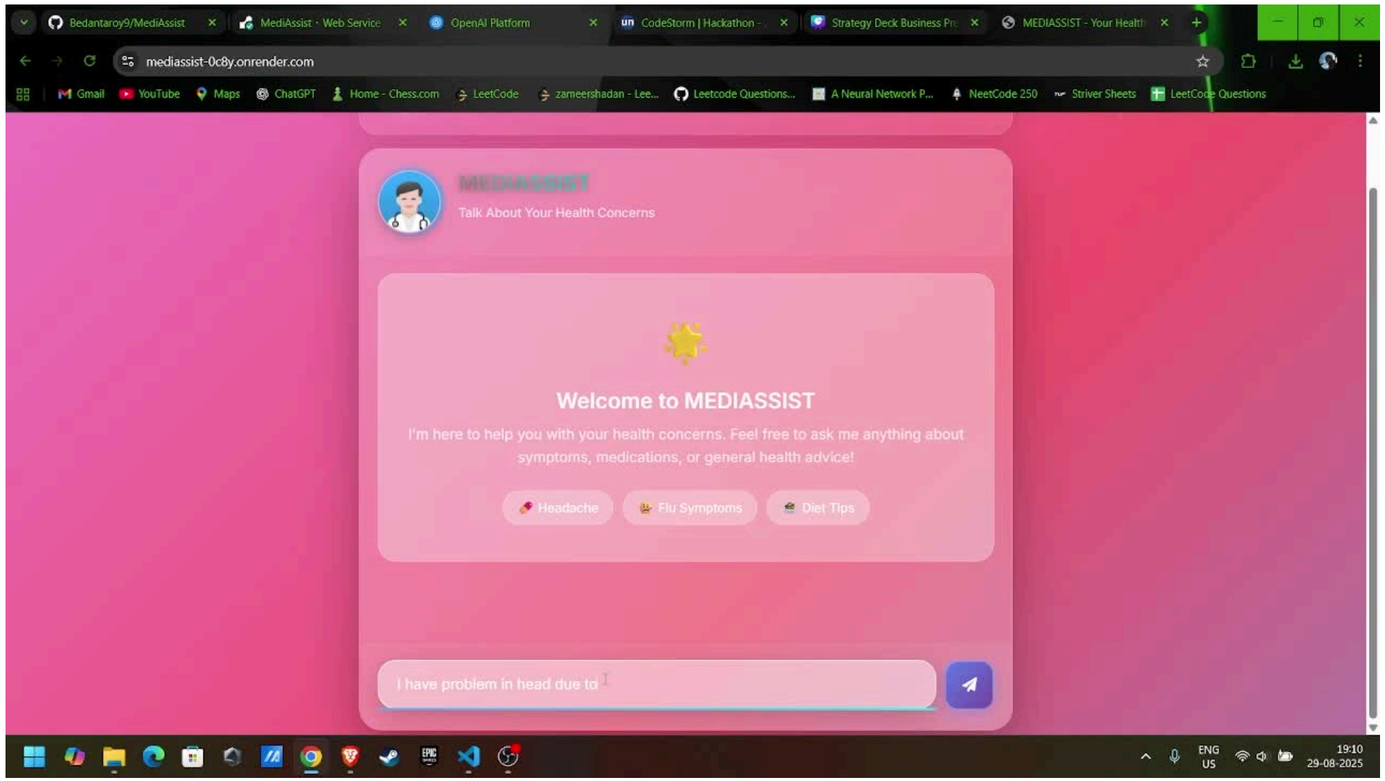
Results & Future Scope

- Results / Expected Outcomes:
  - Faster and more accurate disease diagnosis.
  - Reduced errors in medication prescription.
  - Improved accessibility to medical guidance, especially in regions with limited healthcare professionals.
  - Enhanced patient satisfaction and confidence in treatment.

- Future Scope:

  - Integration with Electronic Health Records (EHR) for seamless patient data access.
  - Support for multimodal inputs like lab results or medical images.
  - Personalized dosing using patient-specific parameters (age, weight, allergies).
  - Continuous improvement via feedback-driven AI learning.

Demo



- Github Link : https://github.com/Bedantaroy9/MediAssist
- Live Link : https://mediassist-0c8y.onrender.com

⚠️ Note: The app is hosted on Render. If it has been inactive for a while, it may take 30–60 seconds to wake up when you first open it. Please wait patiently while the service starts.

Conclusion

- Medibot provides fast, accurate, and safe disease diagnosis and medication guidance.
- It reduces errors, improves patient care, and increases accessibility to medical support.
- Emphasizes patient safety, regulatory compliance, and explainable AI predictions.
- AI as a trusted assistant, not a replacement for doctors.
- Future-ready: can integrate EHR, multimodal data, and personalized dosing.