AI-Powered Patient Symptom Checker

Project Overview:

Create an AI-based web or mobile application that allows patients to input their symptoms and receive an AI-driven preliminary diagnosis. The system would use natural language processing (NLP) to analyze the input, match it against a database of medical conditions, and suggest possible causes, next steps, and recommended doctors or specialists.

Key Features:

1. Symptom Input: Patients describe their symptoms using free-text input.

2. NLP Model: Use a pre-trained BERT model or fine-tune a medical-specific NLP model to classify symptoms and suggest conditions.

3. Knowledge Base: Integrate a medical condition database (such as ICD-10) to match symptoms with diseases.

4. Risk Assessment: Provide a risk score based on symptoms, urging immediate medical consultation if necessary.

5. Doctor Recommendations: Suggest the type of healthcare provider based on the potential condition.

6. User Feedback: Allow users to give feedback on the AI's diagnosis to improve the model.

Technologies Involved:

1. NLP: Fine-tune a BERT model or use healthcare-specific models like BioBERT.

2. Data: Use public medical datasets (like MIMIC-III) for model training and validation.

3. Frontend: Build with a simple interface using Streamlit or React for real-time responses.

4. Backend: Flask/Django for API development.

5. Database: MongoDB or PostgreSQL to store medical condition data.

Bonus Features:

1. Language Support: Incorporate multilingual symptom input (helpful in non-English speaking

countries).

2. Real-time Chatbot: Add a conversational chatbot that helps users refine their symptom descriptions.

This project could improve patient awareness and guide them toward the right healthcare professional while alleviating some of the burden on healthcare systems by reducing unnecessary visits.