Pediatric Pulmonology Chatbot – Technical Documentation

Project Overview:

This project presents a rule-based chatbot designed to assist caregivers in triaging common pediatric respiratory symptoms such as asthma, bronchopulmonary dysplasia (BPD), cystic fibrosis (CF), and reactive airway disease (RAD). The chatbot provides non-critical advice based on user responses to a structured symptom flow.

Key Features:

- Rule-based decision flow based on common respiratory symptoms in children.
- Covers four major pediatric conditions: Asthma, BPD, CF, and RAD.
- Provides safe triage advice and flags emergency symptoms.
- Easy-to-use interface built with Streamlit.

Technologies Used:

- Python for logic and backend development
- Streamlit for chatbot web interface
- GitHub for version control and documentation
- Pandas for data manipulation and analysis
- sentence-transformers for converting sentences into numerical vectors for NLP tasks
- torch (Py torch) for deep learning and neural network modeling
- Manual data extraction from medical sources (WHO, Mayo Clinic, Cleveland Clinic, National library of Medicine etc.)

How It Works:

Users are guided through a series of yes/no questions. Their responses help the chatbot identify potential respiratory issues and provide corresponding advice, including when to seek emergency care. All logic is derived from clinical guidelines and structured in a decision tree format.

Live Chatbot:

https://paediatricpulmonarybot.streamlit.app/

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