

HealthAI - Intelligent Healthcare Assistant

Project Title

HealthAI: Intelligent Healthcare Assistant Using Hugging Face

Project Description

HealthAI is a smart healthcare chatbot built using Streamlit and powered by the Mistral-7B-Instruct-v0.2 model hosted on Hugging Face. It is designed to simulate medical conversations, answer health-related queries, and support patient-doctor interactions with intelligent, model-driven responses.

Features

- User-friendly Interface with Streamlit
- Model Selection Sidebar (e.g., Mistral-7B)
- Text-based Medical Query Input
- Real-time Model Response using Hugging Face Inference API
- Expandable for additional models or tools

Technologies Used

Python - Core programming language

Streamlit - Web interface for the chatbot

Hugging Face Hub - Model hosting and inference API

Mistral-7B - Chosen LLM for medical Q&A

Functional Modules

1. UI/UX with Streamlit

- Sidebar for model selection
- Main panel for entering medical prompts
- Output section showing model response

2. Backend Inference Logic

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- Takes user input as a prompt
- Sends a POST request to Hugging Face API endpoint
- Receives and displays the response

3. Model Integration

- Uses mistralai/Mistral-7B-Instruct-v0.2 via the Hugging Face Inference API
- Token-based authentication for secure access

Environment Variables / Secrets

HUGGINGFACE_API_KEY: The authentication token for accessing Hugging Face Inference API.

- Must be stored securely (e.g., .streamlit/secrets.toml or environment variable).
- Format: hf_XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Deployment Instructions

1. Install Dependencies:

```
pip install streamlit requests
```

2. Set Your Hugging Face Token:

```
headers = {"Authorization": "Bearer YOUR_HUGGINGFACE_API_KEY"}
```

3. Run the App:

```
streamlit run app.py
```

4. Visit in Browser:

```
http://localhost:8501
```

Future Enhancements

- Add speech-to-text input for voice queries
- Enable medical report PDF upload & summarization

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- Integrate open medical knowledge sources
- Fine-tune model for domain-specific accuracy