AI-Powered Symptom Checker for Rural Uganda □□

From Code to Creativity – Exploring the AI Revolution

Empowering Communities with Accessible Healthcare Tools

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Project Overview

Problem Statement

Many rural Ugandan communities lack immediate access to doctors and medical facilities. This leads to delayed diagnoses and poor health outcomes, especially for children.

Solution

An **AI-powered symptom checker** that:

- Diagnoses common childhood illnesses.
- Provides first-aid advice in **4 languages** (English, Luganda, Swahili, Runyankole).
- Works offline and with voice input.

Target Audience

- Rural families, community health workers, and schools in Uganda.
- Students learning AI/tech skills.

Features

Feature	Description
Multi-Language Support	Switch between English, Luganda, Swahili, and Runyankole.
Voice Input	Speak symptoms instead of typing (supports English/Swahili).
First-Aid Tips	Culturally relevant advice for 20+ diseases.
Offline Use	No internet required after setup.
Simple Interface	Designed for users with limited tech experience.

Technical Specifications

Dataset (`symptom2disease_ug_children.csv`)

- **Format**: CSV file with binary symptoms (`1` = present, `0` = absent).
- **Diseases Covered**: Malaria, Typhoid, Pneumonia, HIV/AIDS, etc.
- **Example Row**:

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fever,cough,fatigue,headache,...,disease
1,1,0,1,...,Malaria
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Tools & Libraries Python: Core programming language.

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Streamlit: For building the app interface.

Scikit-learn: Trains the AI model (RandomForestClassifier).

SpeechRecognition: For voice input support.
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File Structure □ Project Folder/ ├── □ iSymptomChecker.py # Main app code ├── □ symptom2disease_ug_children.csv # Dataset ├── □ first_aid.json # First-aid tips in 4 languages └── □ images/ # Screenshots (optional)

Installation & Setup Requirements Python 3.7+

Microphone (for voice input)

Steps Install Dependencies: pip install pandas streamlit scikit-learn SpeechRecognition pyaudio

How to Use Choose Language Select your preferred language (English, Luganda, Swahili, or Runyankole).

Input Symptoms

Voice: Click the microphone icon and speak (e.g., “Ndi musujja” = “I have a fever”).

Manual: Toggle sliders for symptoms (0 = No, 1 = Yes).

Get Diagnosis Click Check Symptoms to see the predicted illness and first-aid tips.

App Screenshot Example: Diagnosing Malaria

Advantages Saves Time: Reduces unnecessary clinic visits.

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Educational: Teaches symptoms and prevention.

Localized: Works in 4 Ugandan languages.

Low-Cost: Free to use and modify.
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Limitations Accuracy: May misdiagnose rare diseases.

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Tech Access: Requires a smartphone/computer.

No Physical Exam: Can’t replace a doctor’s checkup.
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Future Improvements Add SMS support for basic phones.

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Include pictures for symptom identification.

Partner with clinics for real-world testing.

Expand to more languages (e.g., Acholi, Ateso).
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Acknowledgments Dataset Inspiration: Kaggle’s Symptom2Disease dataset.

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Translations: Collaborations with local language experts.

Mentors: Teachers and open-source developers.
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