SautiBot: An AI-Powered Support Chatbot for Abuse Reporting and Help-Seeking

# 1. SDG Focus

This project supports two key UN Sustainable Development Goals:  
- SDG 3: Good Health and Well-being  
- SDG 16: Peace, Justice, and Strong Institutions  
By providing an AI-powered safe space for users to report abuse and access help, SautiBot contributes to improving mental health and strengthening institutions that offer protection.

# 2. Problem Statement

Many survivors of abuse do not have access to safe, anonymous, and judgment-free spaces to report their situations or seek support. Cultural stigma, fear of retaliation, or logistical barriers often silence victims, particularly in low-resource settings. SautiBot was developed to bridge this gap.

# 3. Proposed AI Solution

SautiBot is a chatbot built with NLP-powered keyword detection and rule-based logic to detect signs of distress or abuse. It uses a customizable CSV template containing keywords and responses, enabling instant user support or emergency escalation. It can connect users to real-time hotlines like Usikimye or display emergency numbers like 911 or 1199.

# 4. AI & Software Engineering Concepts Applied

- NLP via keyword detection (pattern matching)  
- Streamlit for rapid deployment of a lightweight UI  
- Version control using Git and GitHub  
- Functional testing through scenario walkthroughs  
- Ethical principles for user protection, fairness, and privacy  
- Modular and scalable Python code design

# 5. Tools and Frameworks Used

- Python 3.12  
- Streamlit  
- Pandas  
- Git + GitHub  
- Visual Studio Code  
- Manual validation (no automated unit tests)

# 6. Data Sources

The core logic of SautiBot relies on a custom-built CSV file (chatbot\_response\_templates.csv) containing keyword-response pairs. These were manually curated and include both English and Swahili variations.

# 7. Ethical & Sustainability Checks

- The bot avoids saving user inputs, ensuring privacy.  
- Keywords were written with inclusivity in mind (e.g., gender, age, language).  
- No personal data is collected or stored.  
- Lightweight deployment via Streamlit ensures it runs in low-resource settings.

# 8. Testing and Validation

The chatbot was tested by simulating real-world abuse scenarios such as:  
- Physical abuse by relatives  
- School-related violence  
- Sexual harassment  
- Mental health emergencies  
Manual tests were run to ensure proper routing to emergency contacts and empathetic responses.

# 9. Deployment & MVP

The project was deployed on Streamlit Cloud and is publicly accessible:  
🔗 https://sautibotapppy-zx7cqciusxpnqbb5f5zsmw.streamlit.app/  
  
The MVP includes:  
- Anonymous chat mode  
- Keyword detection from CSV  
- Emergency and support escalation options  
- Sidebar emergency contacts  
- Clean and accessible UI

# 10. Impact & Future Work

Impact:  
- Provides a private space to speak up  
- Gives emergency help pathways  
- Demonstrates a scalable, modular framework for similar initiatives  
  
Future work:  
- Integrate live chat with counselors  
- Add multi-language NLP model  
- Introduce feedback and conversation logging (anonymous)  
- Include a reporting dashboard for NGOs

# 11. Conclusion

SautiBot bridges a real gap in mental health and abuse reporting access. By using ethical, AI-driven software practices, it empowers users to find help safely. It is a fully functioning MVP ready for iteration and scaling in partnerships with crisis organizations or support groups.

# 12. References (APA Style)

- United Nations. (n.d.). Sustainable Development Goals. https://sdgs.un.org/goals  
- Usikimye. (n.d.). https://usikimye.org  
- Streamlit. (n.d.). https://streamlit.io  
- GitHub. (n.d.). https://github.com  
- Python Software Foundation. (n.d.). https://python.org