

Emotional Support Buddy

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Problem & Objective

- Problem: Lack of deeply empathetic AI support
 - Target: Individuals seeking real-time emotional guidance
 - Objective: Build a safe, warm chatbot that validates feelings and adapts tone

Approach & RAG

- Key Strategies:
 - Retrieval-Augmented Generation with ChromaDB for requirement rules
 - Dynamic feedback loop: Feedback & Guardrail LLMs ensure relevance and safety
 - Context Manager tracks conversation history and emotional tone

Prompt Engineering

- System Prompts Defined:
 - ESB System Prompt: Warm, empathetic role specification
 - Feedback LLM Prompt: Generates single-line JSON directives
 - Guardrail LLM Prompt: Validates messages as SAFE/UNSAFE
 - Dynamic Directive: Guides ESB action, tone, and focus each turn

Application Architecture

- Components Overview:
 - Backend: LM Studio hosts Mistral-7B, phi-3-mini, qwen1.5 chat models
 - ChromaDB: Stores and retrieves 100 empathy rules
 - Feedback & Guardrail: Phi-3-mini for directives, Qwen1.5 for safety checks
 - Context Manager: Maintains history and user sentiment

Future Improvements

- Future Enhancements
 - Long-term memory for personalized support
 - Expanded emotional scenario coverage
 - User feedback loop for continuous learning

Demo Overview

- Live Interaction Examples:
 - Grief scenario: Validates loss, offers listening space
 - Joy scenario: Shares excitement, congratulates specifically
 - Anxiety scenario: Encourages grounding, suggests coping

Made by the AI Whisperers:

- Contiu Mario
- Coroiu Adela
- Cujba Daniel
- Dumitrana Mihnea
- Dumitrescu Razvan