

Empathic AI Hackathon Pitch

Empathic AI Assistant for Emotional Insight and Customer Care

1. The Problem - Emotions in Communication Are Often Ignored

In today's digital interactions-healthcare, HR, customer support-text is everywhere. But we rarely understand how the other person feels just by their words.

Whether it's a frustrated customer, a distressed employee, or a struggling patient-businesses are flying blind to emotional signals in their text.

This leads to poor engagement, inappropriate responses, and bad decisions.

2. Our Solution - An Empathic AI that Listens Emotionally

We built a real-time emotion-aware assistant that:

- Detects emotions in user messages using fine-tuned NLP models.
- Generates emotionally aligned responses using LLMs.
- Provides an interactive interface to explore and integrate this empathy engine.

It's like giving AI emotional intelligence - not just understanding *what* is said, but *how* it's felt.

3. Key Technology & Features

- Sentiment Classification: distilBERT fine-tuned with LoRA (Low-Rank Adaptation) for CPU efficiency.
- Contextual Response Generation: Falcon-7B with emotion-conditioned prompts or predefined fallback responses.
- Streamlit Interface for real-time, user-friendly interaction.

Efficiency-first: Parameter-efficient fine-tuning + fallback logic handles real-world constraints.

4. Business Value & Use Cases

- Customer Support: Identify angry customers and de-escalate -> Reduce churn
- Healthcare: Detect distress in patient chat -> Early intervention
- HR: Analyze surveys for burnout -> Improve retention
- Social Platforms: Moderate emotional tone -> Safer user experience

This tool empowers emotionally aware decision-making at scale.

5. Challenges We Overcame

- - Model size vs. deployability: Solved via LoRA.
- - Memory bottlenecks: Used quantization and fallback logic.
- - Empathy is hard to quantify: Solved via emotion-conditioned prompts.

6. Demo & Results

In our Streamlit app:

- User input: "I just failed my exam. I feel terrible."
- -> Emotion: Sadness
- -> Response: "I'm really sorry you're going through this. It's okay to feel that way."

Evaluated with BLEU, ROUGE, and human judgment: users said it **felt right**.

7. What's Next?

- - Integrate into CRMs, telehealth, HR analytics, feedback tools.
- - Potential offerings: empathy engine API, emotional monitoring tool, comms plugin.

8. Closing Line

In a world where AI is everywhere, empathy is your competitive edge.

We built a system that helps machines not just understand words - but truly listen.