



Implementation Partner



Telangana AI Rising Grand Challenge

Adoption of GenAI-Based Chatbot for MSME Scheme Guidance

Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in economic growth and employment generation. However, awareness of government-promoted schemes—both at the central and state levels—remains limited. This knowledge gap prevents eligible MSMEs from availing financial incentives, technology upgrades, and other growth-oriented benefits.

By building a Generative AI (GenAI)-enabled chatbot, the scheme discovery process can be simplified, reducing manual effort in deciphering eligibility criteria and streamlining the application journey.

Proposed Technological Solutions

1. GenAI-Powered Chatbot

- AI-driven system trained on scheme documents, policy guidelines, and FAQs.
- Conversational interface that allows MSME owners to check eligibility and receive step-by-step guidance.

2. Personalized Scheme Recommendations

- The chatbot leverages TS-iPASS data to retrieve MSME details (business type, turnover, district).
- Suggests relevant schemes tailored to the user's business profile.

3. Document Parsing & Summarization

- AI-driven text mining to extract key clauses from large government documents.
- Summarized benefits, eligibility conditions, and deadlines presented in an easy-to-understand format.

4. Application Process Assistance

- Interactive checklists to guide users through the documentation and submission process.
- Potential for form-filling automation using pre-populated MSME registration details.

5. Omnichannel Accessibility

- Chatbot available via web and mobile for broader reach.

6. RAG-Based Architecture (Retrieval-Augmented Generation)

- **Data Ingestion & Indexing:** Scheme documents split into smaller text chunks and embedded in a vector database.
- **Context Retrieval:** Relevant chunks fetched via semantic search when the user queries.
- **LLM Integration:** AI model uses retrieved chunks as context for generating factual, personalized responses.
- **Feedback Loop:** User feedback refines embeddings, improving search relevance and future responses.

Proposed Methodology

1. Model Training

- Fine-tune a large language model on MSME scheme datasets.
- Apply prompt engineering for better alignment with user queries.

2. (Future Enhancement) Integration with TS-iPASS

- Establish secure APIs to pull MSME registration details.
- Use retrieved data to personalize chatbot recommendations and responses.

3. Pilot & Testing Phase

- Evaluate performance using user feedback and metrics (e.g., satisfaction levels, time taken to find schemes).
- Expand chatbot coverage by incorporating lesser-known schemes.
- The input documents to be in English language whereas the chatbot responses to be in English and Telugu languages.

4. User Experience & Iteration

- Design an intuitive conversational interface for ease of use.
- Continually update the chatbot with new scheme announcements and revisions.

5. Scalability & Continuous Improvement

- Enable chatbot to recommend suitable government agencies, such as Export Promotion Councils and Women Entrepreneurs' Cells, based on MSME profiles.
- Develop a future version allowing direct application submission and real-time status tracking.

6. Governance & Security

- Implement robust data protection safeguards to ensure MSME information confidentiality.
- Adhere to IT regulations, ensuring compliance with privacy standards.