

# Text Summarization Application with Semantic Search

Offline AI System using BART, Sentence Transformers,  
ChromaDB & Docker

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# Project Introduction

- AI-powered text summarization system
- Semantic search over previous summaries
- Fully Dockerized (Backend + UI)
- Works **offline** using local models

# Key Features

- Text summarization using **BART**
- Semantic search using **Sentence Transformers**
- Vector storage with **ChromaDB**
- Docker-based deployment
- Web UI using **Gradio**

# Backend Technologies

- **FastAPI** – REST API server
- **BART (facebook/bart-large-cnn)** – Text summarization
- **Sentence-Transformers (all-MiniLM-L6-v2)** – Embeddings
- **ChromaDB** – Vector database
- **NLTK** – Text preprocessing

# Dockerization

- Consistent environment
- Cross-platform support
- Easy deployment

# Use Cases

- Academic research
- News summarization
- Knowledge management
- Private document analysis
- AI learning projects

# Limitations

- CPU-only inference
- No authentication
- ChromaDB stored locally
- Single-user focus

# Conclusion

- Fully offline AI system
- Practical NLP application
- Strong Docker + ML integration
- Privacy-friendly design

# Thank You