Technical Documentation

Tech Stack Documentation

Programming Language:

- Python

Core Libraries & Frameworks:

- LangChain: For LLM orchestration and pipelines
- FAISS: For semantic search using vector similarity
- OpenAI (via LangChain): For GPT-based LLM processing
- Matplotlib & NumPy: For analytics and performance plotting

Functionality-Specific Tools:

- PDF & Text Loaders: PyPDFLoader, TextLoader
- Text Chunking: CharacterTextSplitter, RecursiveCharacterTextSplitter
- Vectorization: OpenAIEmbeddings
- Prompt Engineering: PromptTemplate, LLMChain
- Memory: ConversationBufferMemory (planned/optional)

Component Specifications

1. ResumeLoader

- Purpose: Loads and vectorizes resume from PDF.
- Technology: LangChain loaders, FAISS, OpenAI Embeddings.
- Functionality: PDF parsing, chunking, embedding, scoring via RAG QA.

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2. InterviewSystem

- Purpose: Conducts AI-driven adaptive interviews.

- Technology: LangChain LLMChain, RetrievalQA, PromptTemplate.

- Functionality: Contextual QA, dynamic difficulty adjustment, concept handling.

3. QuestionAnswerEval

- Purpose: Evaluates responses technically and linguistically.

- Technology: PromptTemplates for evaluation.

- Functionality: Technical and communication score computation, analytics.

4. EasyScoring

- Purpose: Combines resume and interview evaluations.

- Formula: aug_technical_score = tech_score * technical_match.

- Functionality: Candidate scoring vector and performance representation.

GenAI Strategy

1. LLM Selection & Customization

- Model: OpenAI GPT (LangChain)

- Temperature: 0.5

- Prompt customization using PromptTemplate

2. Prompt Engineering for Interview Scenarios

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- Context-aware, concept and difficulty-specific prompts

- Structured evaluation outputs

3. Fine-tuning & Evaluation Methodology

- Evaluation on relevance, accuracy, grammar, vocabulary, articulation, clarity

- Weighted score calculations

4. Multimodal Integration Approach

- Current: Text-only

- Future Scope: Audio via speech-to-text, video via emotion analysis