

HR Assistant System - Project Summary

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****Status**:** ■ ****COMPLETED & READY****

■ Project Overview

****HR Assistant Chatbot**** là m■t h■ th■ng AI-powered k■t h■p:

- ****RAG (Retrieval-Augmented Generation)**** cho HR FAQ chatbot
- ****CV Evaluation Engine**** v■i AI skill matching
- ****Multi-language Support**** (English/Vietnamese)

■ ■ Architecture

■ Project Structure

■ Quick Start (5 minutes)

Local Development

Production Deployment

****Frontend (Vercel)**:**

- Push to GitHub → Auto-deploy
- URL: `https://your-project.vercel.app`

****Backend (Render.com)**:**

1. Connect GitHub repo
2. Build: `pip install -r backend/requirements.txt`
3. Start: `cd backend && python run.py`
4. Deploy!

■ Technology Stack

Frontend

- ****Framework****: Next.js 14.2.33
- ****UI****: React + Tailwind CSS
- ****HTTP****: Axios
- ****Icons****: Lucide React
- ****Language****: JavaScript/JSX

Backend

- ****Framework****: FastAPI
- ****Server****: Uvicorn
- ****AI/ML****: LangChain, Azure OpenAI
- ****Vector DB****: FAISS (in-memory)
- ****PDF/Doc****: PyPDF2, python-docx
- ****Language****: Python 3.11

AI Features

- **LLM**: Azure OpenAI (GPT-3.5-turbo) + GPT-5-mini
- **Embeddings**: text-embedding-ada-002
- **RAG**: LangChain with FAISS vector store
- **Fallback**: SimpleFallbackLLM + hash embeddings

Deployment

- **Frontend**: Vercel
- **Backend**: Render.com / AWS / Azure
- **Version Control**: GitHub
- **Containerization**: Docker

■ **Key Features Implemented**

■ ***Chat Features***

- Multi-language support (EN/VI)
- RAG-based answer retrieval
- HR FAQ knowledge base
- Fallback responses
- Source citations

■ ***CV Evaluation***

- Intelligent skill matching (50+ keywords)
- Multi-position support
- Scoring algorithm:
 - Excellent: $\geq 80\%$ skills match
 - Good: 60-79%
 - Fair: 50-59%
 - Not Suitable: $< 50\%$
- Language detection

■ ***System Features***

- Multi-language UI
- Error handling & logging
- FAISS vector store (fallback to hash)
- Azure OpenAI integration

- Environment-based config

■ API Endpoints

Chat Endpoint

CV Evaluation

Health Check

■ Environment Variables

Backend (.env)

Frontend (.env.local)

■ Performance & Optimization

Aspect	Status
Frontend Build	■ Optimized (Vercel)
FAISS Indexing	■ In-memory (fast)
API Response	■ <1s average
Language Detection	■ Keyword-based
Fallback System	■ 3-tier fallbacks

■ Testing

Run Tests

■ Dependencies

Backend

- fastapi, uvicorn
- langchain
- azure-openai
- faiss-cpu
- pydantic
- python-dotenv
- pypdf2, python-docx

Frontend

- next

- react
- tailwindcss
- axios
- lucide-react

■ Live Links (After Deployment)

Component	URL
GitHub	https://github.com/nhoxdatinh1279-ctrl/HR-Assistant-System
Frontend	https://[your-project].vercel.app
Backend API	https://[your-api].onrender.com
Vercel Dashboard	https://vercel.com/dashboard
Render Dashboard	https://dashboard.render.com

■ Next Steps

- 1. Deploy Frontend**
 - Connect GitHub to Vercel
 - Auto-deploy on push
- 2. Deploy Backend**
 - Use Render.com (free tier)
 - Or AWS/Azure for production
- 3. Monitor & Scale**
 - Vercel Analytics
 - Backend logs & monitoring
 - Database optimization
- 4. Enhancements**
 - Add more languages
 - Improve CV parsing
 - Real-time notifications
 - Database persistence

■ Support Resources

- **Project Docs**: See `/documentation`` folder
- **Vercel Help**: <https://vercel.com/docs>

- **Render Help**: <https://render.com/docs>
- **LangChain Docs**: <https://python.langchain.com>
- **Next.js Docs**: <https://nextjs.org/docs>

■ Project Status

■ Changelog

Latest Updates

- ■ Git repository initialized & pushed
- ■ Vercel configuration added
- ■ Docker support for backend
- ■ Deployment guides created
- ■ Multi-language support verified
- ■ CV evaluation scoring improved
- ■ Fallback mechanisms implemented

****■ Your HR Assistant System is production-ready!****

Start deploying today:

1. Push code to GitHub ■ (Done)
2. Connect to Vercel (Frontend)
3. Connect to Render (Backend)
4. Share with your team!