



AI Chatbot for Employee Onboarding

By
Swetha R Barade
IT
2022115072



Introduction

- ❑ Worked with the MERN stack and explored integrating AI in web development for a real-world problem presented during the period of the web development internship at CEI India.
- ❑ This experience gave me a solid foundation in coding and team collaboration.
- ❑ I gained valuable insights learned how to adapt to evolving project requirements.
- ❑ Overall, this experience significantly enriched my understanding of modern web development practices

Problem Definition

- ❑ The recruitment process at CEI was slow due to the manual checking of resumes.
- ❑ This led to errors and delays, affecting overall productivity of the company.
- ❑ The project aimed to automate resume management using an AI chatbot, improving efficiency in retrieving and organizing candidate data for HR.
- ❑ This transformation enables HR professionals to focus on engaging with top candidates as this is a more effective hiring strategy.



Objective

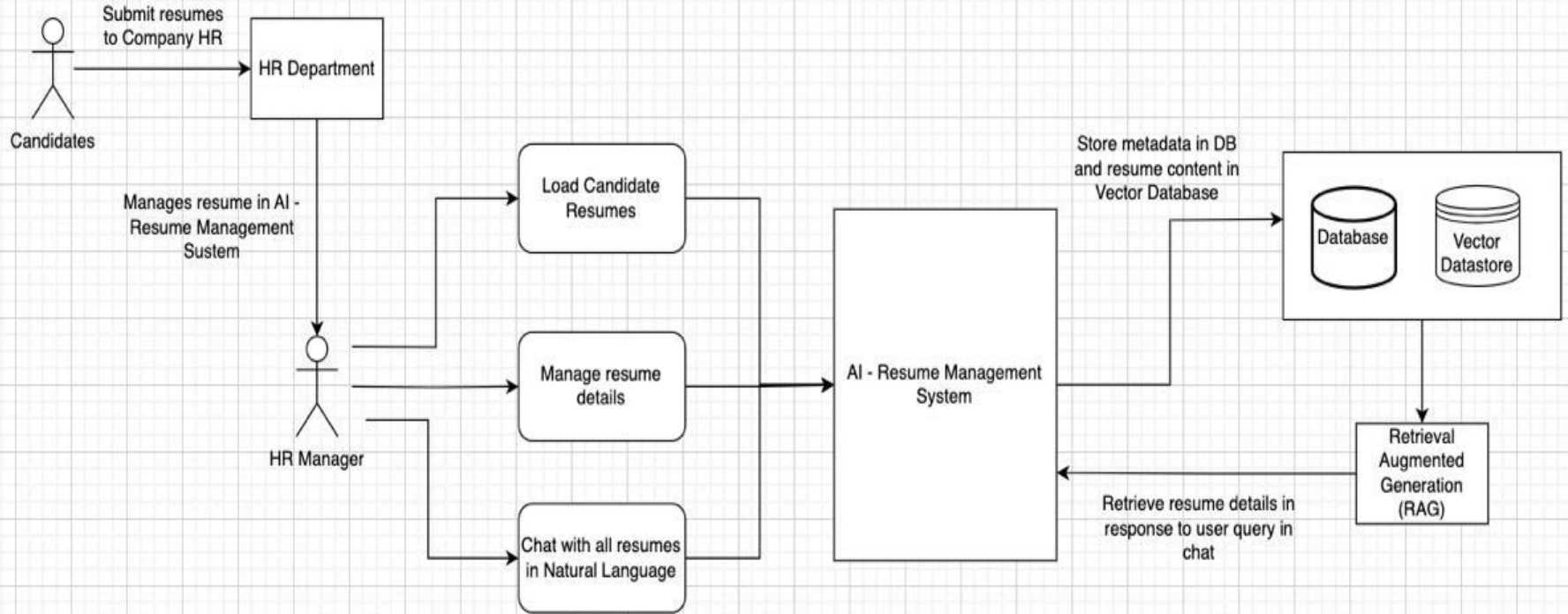
- ❑ The goal was to apply my learning from coursework to a real-world project using the MERN stack.
- ❑ I worked on web development tasks, gained practical problem-solving skills, and explored AI integration.
- ❑ Throughout the project, I collaborated with team members to ensure integration of various components.
- ❑ This hands-on experience deepened my understanding of full-stack development while also allowing me to experiment with innovative AI solutions.

Survey/Ideas

- ❑ After talking to the HR team, the need to search resumes to reduce manual work was identified.
- ❑ This approach would make the recruitment process faster and more efficient for the HR team.
- ❑ By automating the searching of resumes human error can be minimized and instant access to particular employee information is facilitated.
- ❑ This also enhances the overall quality of hires by allowing them to focus on strategic decision-making

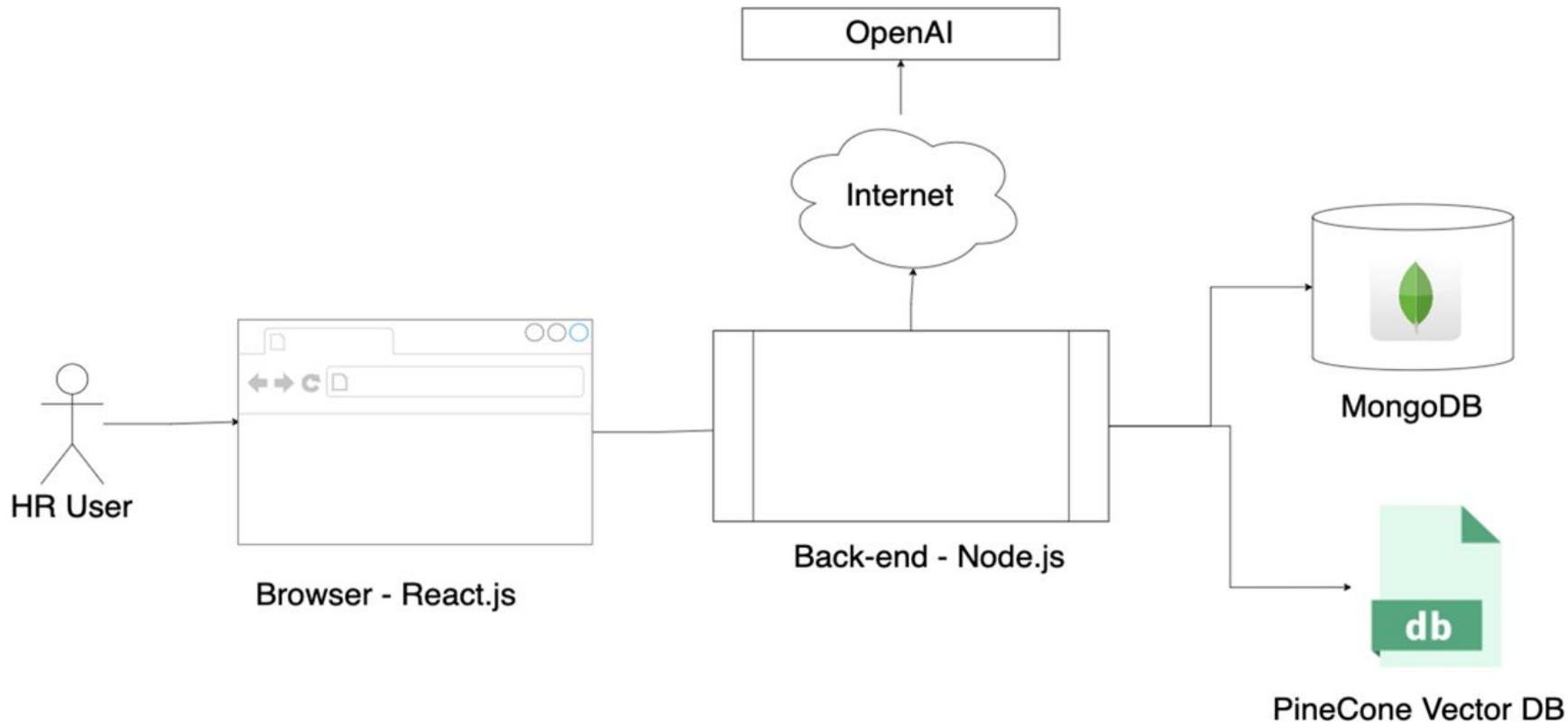


System Architecture



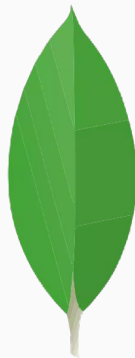
Detailed Design

- ❏ Developed a user-friendly interface using React.js for resume uploads and chatbot interactions.
- ❏ The backend was built with Node.js and Express.js.
- ❏ Python FastAPI was used for AI-driven search features.
- ❏ This combination of technologies creates a responsive experience for the HR, facilitating easy retrieval of information from the uploaded documents.



Tools and Technologies Used

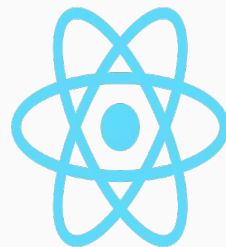
- ❑ MongoDB - to store resumes(unstructured data) in a scalable format.
- ❑ Express.js - to handle APIs for backend communication.
- ❑ React.js - to build a responsive front-end for HR to upload resumes and interact with the chatbot.
- ❑ Node.js - to handle the server-side operations.
- ❑ Python FastAPI - to extract data from resumes.
- ❑ OpenAI & Pinecone - to enable AI-driven searches, making it easy to retrieve relevant information about the employee quickly.



M



E



R



N



Screenshots/videos of the output



Upload

List Files

Chat

ChatBot

user: skills of the employee? ▲

bot: The skills of the employee based on the provided context are: - Python - C Programming - HTML/CSS/Javascript - MySQL - Postgres - Cyber Security - Communication - Analytical Skills - Problem-Solving Additionally, the employee is also engaged in learning Spanish, Photography, and Chess.

user: previous internship experience?

bot: Based on the provided context, there is no specific mention of previous internship experience. The individual has listed their skills, competencies, technical courses/certifications, and education background, but did not include any details about previous internship experiences. It is possible that the person may not have had any internship experience or may have chosen not to include it in this context.

Results and Discussions

- ❑ The AI chatbot performed well in testing, delivering accurate search results and improving the speed of recruitment tasks.
- ❑ HR personnel found it easy to use, and it significantly reduced manual effort.
- ❑ The system handled large volumes of resumes efficiently
- ❑ Feedback from the HR team was positive, highlighting the system's ease of use and reliability.

References

- ❑ Vasudevan, S., & Paul, D. (2020). An Overview of Chatbot Systems for HR and Recruitment. *Journal of AI Research*, 68, 101-116.
- ❑ Liu, X., & Huang, T. (2021). Enhancing Recruitment Processes with AI Chatbots: A Review. *Human Resource Management Review*, 31(4), 100-113.
- ❑ Wang, X., & Wu, Z. (2021). Performance Evaluation Metrics for Web Applications: A Comprehensive Review. *Journal of Web Engineering*, 20(1), 1-25.
- ❑ McTear, M. (2017). The Conversational Interface: Where Conversational Agents and Human-Computer Interaction Meet. *The Handbook of Human-Computer Interaction*, 2nd ed., 103-13