Resume Analysis eXpert-(RAX)

Project Overview:

It is a conceptual AI-powered hiring platform designed to improve how organizations screen, evaluate, and shortlist job candidates. Traditional Applicant Tracking Systems (ATS) rely heavily on keyword matching, which often leads to the rejection of qualified candidates and lacks transparency in decision-making. This RAX addresses these limitations by using semantic understanding and explainable AI to support faster, fairer, and more transparent hiring decisions.

The platform is designed for modern, remote, and distributed HR teams and focuses on reducing time-to-hire while improving the quality and fairness of recruitment outcome

Problem Statement

Current hiring systems face several critical challenges:

1. **Inefficient Resume Screening**
   Recruiters spend significant time manually reviewing resumes, especially when applications are received in large volumes.

2. **Keyword-Based Filtering Issues**
   Traditional ATS systems rely on exact keyword matching, which can reject qualified candidates who use different wording to describe similar skills.

3. **Lack of Transparency**
   Hiring decisions are often made by automated systems without clear explanations, making it difficult for recruiters and candidates to understand why decisions were made.

4. **Bias in Hiring**
   Personal details such as name, gender, or educational background can unintentionally influence screening decisions.

5. **Slow Hiring Process**
   Delays in screening and coordination cause organizations to lose high-quality candidates to faster-moving employers.

These issues result in poor candidate experience, reduced hiring quality, and inefficient recruitment processes.

Proposed Solution:

This proposes a modern, AI-driven solution that aligns with current advancements in artificial intelligence and cloud computing.

Key Features of the Solution

1. **Semantic Resume Understanding**
   The system uses Natural Language Processing (NLP) to understand the meaning of resumes and job descriptions rather than relying on exact keywords. This allows more accurate matching between candidates and job roles.

2. **Explainable AI-Based Scoring**
   Each candidate is evaluated using structured scoring based on skills, experience, and education. Every score is accompanied by a clear explanation that shows strengths, gaps, and reasons for selection or rejection.

3. **Bias-Aware Screening**
   Personal identifiers such as name, gender, and university can be hidden during initial screening to promote fair and skill-based hiring decisions.

4. **Scalable and Real-Time Processing**
   The platform is designed to handle bulk resume uploads using cloud-based distributed processing, allowing fast screening even during high-volume hiring.

5. **Collaborative Hiring Support**
   Recruiters and hiring managers can view ranked candidate lists and explanations in real time, improving team alignment and reducing decision delays.

6. **AI-Assisted Candidate Feedback**
   Rejected candidates can receive automated, constructive feedback highlighting areas for improvement, enhancing transparency and employer branding.

How our RAX Comes Under Distributed Computing

This is not a single-machine application. It is designed to handle large volumes of resumes, multiple recruiters, and real-time processing, which requires distributed computing.The system processes multiple resumes in parallel by dividing them into smaller tasks and analyzing them simultaneously using cloud-based workers. Resume analysis is performed asynchronously, allowing the system to remain responsive during high-volume uploads. Cloud infrastructure enables dynamic scaling of resources based on workload, ensuring consistent performance. All resume data and evaluation results are stored in distributed storage for high availability and fast

access. Recruiters and hiring managers can collaborate in real time, with candidate rankings and decisions synchronized across the system.

Technologies:

Frontend- [react.js](#) or angular
Backend- python fast API
Database - postgresql

Deployment:

Planning to use any free source like VERSAL

Conclusion:

RAX represents an updated and realistic approach to modern recruitment by combining semantic AI, explainable decision-making, and fairness-focused design. While similar technologies exist in today's market, this project integrates them into a unified, transparent, and collaborative hiring framework. The proposed system aims to significantly reduce time-to-hire, improve hiring quality, and promote ethical and data-driven recruitment practices.