Product Requirements Document (PRD)

Purpose: Define product features, user requirements, and scope.

Expanded Sections:

- **User requirements:**
  - As an HR user, I want to upload resumes and a JD to get ranked matches.
  - As a recruiter, I want to preview resumes and match scores in a conversational UI.
- **Features:**
  - File upload (JD + resumes) Text extraction and embedding
  - Match score computation
  - Chatbot-style result display
- **MVP Scope:**
  - Semantic matching
  - PDF/DOCX/OCR support
  - Chat UI
- **Future Scope:**
  - Skill gap analysis
  - Cover letter generation
  - ATS integration

Purpose

The main purpose of this document is to define the product's functionality, user requirements, and development scope, ensuring that every feature aligns with the end-users' real-world workflows and recruitment goals. The document provides clarity between stakeholders, designers, and engineers regarding what the system must do and in which stages.

This product aims to **automate and enhance the resume screening process** using AI-based semantic understanding. It reduces manual evaluation effort, introduces conversational interactivity for recruiters, and ensures that candidates are ranked transparently based on job relevance rather than superficial keyword matches. The result is a more efficient, data-driven, and bias-aware recruitment workflow.

User Requirements

User requirements describe what target users need to achieve through the system. These are expressed from the perspective of two primary user personas—**HR managers** and **recruiters**.

- **As an HR user**, I want to **upload resumes and a job description (JD)** so that I can **automatically receive ranked matches** based on candidate-job relevance.
  Rationale: HR professionals manage large inflows of applications. Automating semantic ranking saves time and standardizes evaluation, ensuring fairness and consistency.

- **As a recruiter**, I want to **preview resumes and their corresponding match scores in a conversational UI**, so I can **interactively review candidate suitability and ask for summaries or explanations.**
  Rationale: Recruiters often require clarity on why a certain candidate is ranked higher. A chatbot interface enhances transparency and allows for a more intuitive exploration of candidate insights.

Features

The system delivers a series of features designed to enable intelligent matching, interactive review, and user-friendly navigation.

- **File Upload (JD + Resumes):**
  Users can upload one job description and multiple resumes in supported formats (PDF, DOCX, and images). The backend automatically classifies and stores these files for further processing.

- **Text Extraction and Embedding:**
  Resumes and job descriptions are converted into text using **PyMuPDF**, **python-docx**, or **Tesseract OCR** , depending on file format. Extracted content is then transformed into vector representations via **Sentence Transformers**, enabling the system to understand contextual relationships instead of relying on simple keyword matching.

- **Match Score Computation:**
  The backend calculates **cosine similarity** between the JD and resume embeddings. Each resume receives a numerical similarity score, representing how well it aligns with the requirements outlined in the job description.

- **Chatbot-Style Result Display:**
  The results are presented through an **AI chatbot interface**. The recruiter can interact naturally—asking questions like “Show me the top candidate for Python roles” or “Explain this candidate’s strengths.” The chatbot then fetches relevant information using API calls and displays scores and insights conversationally.

MVP Scope

The **Minimum Viable Product (MVP)** focuses on delivering the core functionality necessary for meaningful user feedback and validation. It’s designed to demonstrate the system’s technical feasibility and value proposition before scaling up.

- **Semantic Matching:**
  Core algorithm for calculating candidate-job similarity using contextual embeddings. This ensures that the matching process reflects real skill relevance rather than keyword density.

- **PDF/DOCX/OCR Support:**
  Enables handling of both text and image-based resumes, ensuring accessibility for different candidate submission formats.

- **Chat UI:**
  The chatbot-style user interface serves as the primary interaction layer, combining textual explanations with match visualization for an engaging experience.

Future Scope

The post-MVP roadmap introduces advanced features aimed at optimizing talent analytics, candidate engagement, and system integration capabilities.

- **Skill Gap Analysis:**
  Introduces an analytical layer that highlights which skills are missing or underrepresented in each resume relative to the job description. This helps HR identify training opportunities or develop data-backed hiring guidance.

- **Cover Letter Generation:**
  Powered by language models, this feature will automatically generate customized, job-aligned cover letters for candidates or HR reference, saving time and ensuring

consistency.

- **ATS (Applicant Tracking System) Integration:**
  The system will incorporate APIs to connect seamlessly with commonly used ATS platforms. This integration will allow recruiters to import/export candidate data, job postings, and status updates directly within the workflow, reducing redundancy.