

Document Similarity Comparison and Ranking

Problem Statement

In the recruitment process, it is essential to efficiently match job descriptions (JDs) with the profiles of available consultants. This involves comparing and ranking the similarity between two types of text documents:

- **Document #1:** Job Description (JD) embedded in an AR (Automated Requisition).
- **Document #2:** Set of profiles of consultants.

The goal is to compare the similarity of these documents based on skills, experience, and contextual information, and then rank the consultant profiles based on their match with the JD. The system should send an email to the AR requestor with the top 3 matches or notify the recruiter if no suitable matches are found.

Key challenges include:

- **Contextual Comparison:** Accurately comparing documents based on skills, experience, and contextual relevance.
- **Ranking Profiles:** Effectively ranking consultant profiles based on their similarity to the JD.
- **Automated Communication:** Sending automated emails to the AR requestor or recruiter based on the comparison results.

This solution aims to streamline the recruitment process by automating the comparison and ranking of consultant profiles against JDs, ensuring efficient and accurate matching.

Expected Solution Overview

We will leverage an open-source AI-based multi-agent framework to decompose the workflow into specialized, cooperating agents, and expose control and status via a rich Web UI. Below are examples of the agents involved:

Agent	Role & Inputs	Outputs	Reasoning / Generative AI Use
Comparison Agent	Job Description (JD), Consultant Profiles	Similarity scores between JD and profiles	Compare documents based on skills, experience, and contextual information.
Ranking Agent	Similarity scores	Ranked list of consultant profiles	Rank profiles based on their similarity scores to the JD.

Communication Agent	Ranked list of profiles, AR requestor email, Recruiter email	Automated emails to AR requestor or recruiter	Send emails with top 3 matches or notify the recruiter if no matches are found.
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We can use any database and synthetic data to simulate the solutions.

Web UI Design

This solution must provide both recruiters and AR requestors with web UI pages with live visibility.

For AR Requestors:

- **Current Matching Status Dashboard:**
 - JD Comparison Status (Completed / In Progress)
 - Top 3 Matches (Listed / Not Found)
 - Email Notification Status (Sent / Pending)
- **Real-Time Workflow Progress Bar with below action items:**
 - JD Compared
 - Profiles Ranked
 - Email Sent to AR Requestor

For Recruiters:

- **Admin Console includes:**
 - JD Search & Filters (by skills, experience, status).
 - View agentic framework-managed queues, latencies, error rates.
 - Report Generation about matching results by JD or consultant profile.

This design ensures that both AR requestors and recruiters have real-time visibility and control over the document comparison and ranking process, leading to more efficient and effective recruitment.