Business Requirements Document (BRD)

1. Executive Summary

The objective of this project is to build an **AI-powered Resume Shortlister** for a recruitment consultancy specialized in staffing technical IT resources in the USA. The tool leverages AI, Retrieval-Augmented Generation (RAG), and AWS infrastructure to streamline resume screening, reduce manual effort, detect fraudulent resumes, and provide recruiters with the most relevant candidate matches against client job descriptions.

This BRD outlines the business context, objectives, requirements, risks, constraints, and success metrics for this initiative.

---

2. Purpose

- Automate and optimize resume shortlisting against job descriptions (JDs).
- Provide recruiters with the **top 20 most relevant resumes** with matching scores.
- Generate **candidate profile reports** highlighting skill match/mismatch.
- Improve recruiter productivity and reduce time spent per requirement.
- Establish fraud detection mechanisms to reduce fake resumes.

---

3. Business Context

Recruitment consultancies often face inefficiencies in processing large volumes of resumes. Recruiters, especially non-technical staff, struggle to: - Interpret technical job descriptions accurately. - Manually filter resumes, which is time-consuming. - Identify discrepancies or fraudulent resumes.

This AI-powered solution addresses these challenges by automating matching, providing explainable skill matches, and enabling faster candidate selection.

---

4. Objectives & Goals

Strategic Goals

1. **Increase recruiter productivity** by automating resume filtering.
2. **Enhance client satisfaction** by delivering highly relevant candidate shortlists faster.
3. **Reduce operational costs** by minimizing manual screening effort.
4. **Strengthen reputation** as a tech-enabled recruitment consultancy.

Measurable Objectives

- Reduce resume screening time per JD by **70%**.
- Achieve at least **85% matching accuracy** against JDs.
- Detect and filter **>90% fake or fabricated resumes**.
- Improve recruiter placement ratio by **30%**.

---

5. Scope

In-Scope

- Resume ingestion and embedding into AWS S3 + vector database (FAISS/Chroma).
- JD ingestion and semantic matching against resumes.
- RAG pipeline for contextual skill matching.
- Candidate ranking with top-20 recommendations.
- Resume profile report with matching & missing skills.
- Recruiter-facing UI (React/Next.js).
- Fraud detection and resume authenticity checks.
- Deployment on AWS cloud (S3, ECS, EC2, Lambda, API Gateway).

Out-of-Scope (Future Enhancements)

- Automated outreach to candidates.
- Integration with external job boards or LinkedIn.
- End-to-end applicant tracking system (ATS).

---

6. Stakeholders

- **Business Owner**: Recruitment Consultancy CEO/MD
- **Product Owner**: Head of Technology Innovation
- **Recruiters (Primary Users)**: Non-technical hiring coordinators
- **Clients (Indirect Stakeholders)**: IT hiring managers
- **Development Team**: AI Engineers, Backend/Frontend Developers, AWS Cloud Engineers
- **Compliance/Legal**: Ensuring data privacy (GDPR/CCPA)

---

7. Current Pain Points

1. Manual resume screening is slow and error-prone.
2. Non-technical recruiters struggle with technical JDs.
3. High prevalence of fraudulent resumes (fake skills, fabricated experience).
4. Client dissatisfaction due to poor candidate-requirement alignment.
5. Operational inefficiency with unstructured resume storage.

---

8. Business Requirements

Functional Business Requirements

1. **Resume Ingestion**: Upload and store resumes in AWS S3, convert into embeddings.
2. **JD Processing**: Recruiter uploads/pastes JD, system parses and generates embeddings.
3. **Matching Engine**: Match JD embeddings with resume embeddings using FAISS/Chroma.
4. **Ranking & Recommendation**: Return top-20 resumes ranked by relevance.
5. **Candidate Report**: Generate skill match/mismatch reports per resume.
6. **Fraud Detection**: Detect anomalies like inconsistent employment dates, copied job descriptions, unverifiable skills.
7. **Recruiter UI**: User-friendly portal for JD input, resume results, download, and reports.

Non-Functional Business Requirements

1. **Performance**: Query & match in <3 seconds for 100,000+ resumes.
2. **Scalability**: Support growth up to 10M resumes.
3. **Accuracy**: >85% matching precision.
4. **Security**: Encrypted storage (S3), access controls, compliance with data protection laws.
5. **Availability**: 99.9% uptime.

---

9. Constraints

- Resumes stored only in **English** (Phase 1).
- Limited to structured/unstructured PDF/DOCX resumes.
- Initial deployment restricted to AWS cloud.
- Fraud detection dependent on available metadata (no external integrations initially).

---

10. Assumptions

- Recruiters will continue to upload resumes and JDs manually.
- Resume database will be actively curated/cleaned by internal teams.
- Clients provide structured JDs with clear technical skills.
- AWS will be the sole cloud provider.

---

11. Dependencies

- AWS Services (S3, ECS, EC2, Lambda, API Gateway).
- FAISS/Chroma vector database.
- Python-based backend (Flask/FastAPI).
- React/Next.js recruiter UI.
- Fraud detection algorithms.

---

12. Risks

1. **False Positives/Negatives**: Incorrectly matched or missed candidates.
2. **Fraudulent Resume Evasion**: Fake resumes may bypass detection.
3. **Data Privacy Concerns**: Storing PII (names, emails, addresses) in cloud.
4. **Recruiter Adoption Risk**: Resistance to new tech workflows.
5. **AWS Cost Overruns**: High compute/storage costs with scale.

---

13. Success Metrics

- **Operational Efficiency**: Screening time reduced by 70%.
- **Accuracy**: 85%+ skill matching precision.
- **Recruiter Adoption**: >90% recruiters actively using system within 3 months.
- **Client Satisfaction**: Net Promoter Score (NPS) > 8.
- **Fraud Detection Rate**: >90% fraudulent resumes flagged.

---

14. Roadmap (Phased Delivery)

Phase 1: MVP (3 Months)

- Resume ingestion, JD matching, top-20 resumes, recruiter UI.

Phase 2: Advanced Matching (6 Months)

- Candidate reports, fraud detection engine, recruiter dashboards.

Phase 3: Optimization & Scaling (12 Months)

- Large-scale resume handling (10M+).
- Advanced fraud detection with external data sources.
- Integration with ATS platforms.

---

15. Appendices

- **Glossary**: JD (Job Description), RAG (Retrieval-Augmented Generation), S3 (AWS Simple Storage Service).
- **References**: AWS documentation, FAISS/Chroma docs, recruitment domain best practices.