**Software Requirements Specification (SRS)**

**AI-Powered Resume Analyzer & Job Matcher**

**1. Introduction**

**1.1 Purpose**

The AI-Powered Resume Analyzer is designed to **analyze resumes and match them with job descriptions** using **AI and NLP techniques**. It helps recruiters **shortlist the best candidates faster** by automating **resume screening** and **skill-job matching**.

**1.2 Scope**

* **NLP-based resume parsing and candidate profiling.**
* **AI-driven job matching based on experience, skills, and achievements.**
* **Automated ranking of resumes based on job descriptions.**
* **Integration with LinkedIn & job portals via APIs.**

**1.3 Definitions, Acronyms, and Abbreviations**

* **NLP** – Natural Language Processing
* **TF-IDF** – Term Frequency-Inverse Document Frequency (for keyword ranking)
* **ML** – Machine Learning

**1.4 References**

* IEEE SRS Standard (IEEE 830-1998)
* Research on AI-based recruitment systems

**2. Overall Description**

**2.1 Product Perspective**

The system acts as an **AI-powered hiring assistant** that processes resumes and recommends candidates **ranked by relevance** to job descriptions.

**2.2 Product Features**

* **Resume Parsing:** Extracts structured data from resumes.
* **Skill Matching:** Matches resume skills with job descriptions.
* **Job Recommendation:** Suggests best-fit jobs for candidates.
* **Resume Ranking:** Scores and ranks candidates based on AI analysis.
* **Recruiter Dashboard:** Displays candidate rankings and insights.

**2.3 User Characteristics**

* **Recruiters:** Automate resume screening.
* **Job Seekers:** Get AI-driven job recommendations.
* **HR Teams:** Streamline hiring processes.

**2.4 Constraints**

* AI model requires **constant dataset updates** for better accuracy.
* Resume parsing accuracy depends on **document formatting**.

**3. Specific Requirements**

**3.1 Functional Requirements**

| **ID** | **Requirement** |
| --- | --- |
| FR-1 | System shall parse resumes and extract structured data. |
| FR-2 | AI model shall match resume skills with job descriptions. |
| FR-3 | System shall rank candidates based on AI analysis. |

**3.2 Non-Functional Requirements**

* **Accuracy:** NLP-based resume parsing must achieve **85%+ accuracy**.
* **Response Time:** Resume analysis must complete within **3 seconds**.
* **Security:** Encrypts sensitive data using **AES-256**.

**4. AI Model Pipeline**

1. **Resume Parsing (spaCy, BERT NLP Model)** → Extracts structured resume data.
2. **TF-IDF & Named Entity Recognition (NER)** → Identifies skills & experience.
3. **ML-Based Candidate Scoring** → Ranks resumes for job descriptions.
4. **Job Recommendation API** → Suggests job listings based on AI analysis.

**5. System Design & Use Cases**

* **Use Case 1:** Recruiter uploads a job description → AI ranks top resumes.
* **Use Case 2:** Job seeker uploads a resume → AI suggests best-matching jobs.

**6. Technology Stack**

* **Frontend:** React.js + Material UI
* **Backend:** Node.js + Express.js
* **Database:** MongoDB
* **NLP Model:** BERT + spaCy + TF-IDF
* **Cloud Deployment:** AWS (S3, Lambda, EC2)
* **Authentication:** Firebase/Auth0

**7. Assumptions & Dependencies**

* Resumes must be in **PDF/DOCX formats**.
* AI model performance improves with **larger datasets**.

**8. Appendix**

* API endpoints for resume analysis & job recommendations.
* Future roadmap: Implement **GPT-based resume screening**.

🚀 **Next Steps:** Now we start development on both projects!