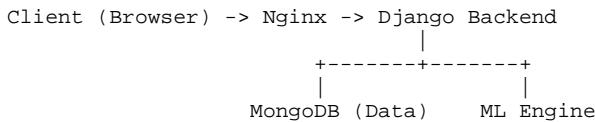


AI-Powered Resume Screening System

System Architecture Document

1. High-Level Architecture

The system follows a Model-View-Controller (MVC) pattern with a Service-Repository layer for ML logic.



2. Component Detail

2.1 Backend (Django + DRF)

Modular apps structure:

- **apps.accounts**: Custom User, Role management, JWT Auth.
- **apps.jobs**: Job Posting CRUD.
- **apps.resumes**: File uploads & Text extraction (PDF/DOCX).
- **apps.screening**: Bridge between Data and ML Engine.
- **apps.web**: SSR UI using Django Templates.

2.2 Database (MongoDB)

Using MongoDB via djongo for flexibility with unstructured resume data.

Collections: *auth_user, api_resume, api_jobposting, api_screeningresult*

2.3 ML / NLP Pipeline

Decoupled Python package **ml_engine**.

1. Input: Job Description + Resumes
2. Preprocessing: Tokenize, Lemmatize (NLTK)
3. Vectorization: TF-IDF
4. Ranking: Cosine Similarity
5. Output: Similarity Scores (0-1)

3. Resume Screening Lifecycle

1. User uploads Resume (POST /api/resumes/)
2. Server extracts text & saves to MongoDB
3. User triggers Screening (POST /api/screen/{job_id})
4. ML Engine fetches data, computes TF-IDF & Cosine Similarity
5. Results saved to ScreeningResult collection
6. Frontend displays ranked candidates

4. Authentication

JWT (JSON Web Token) based flow.

- content-type: application/json
- Authorization: Bearer