

Automating Job Description Analysis for Recruiters

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Problem Statement:

HR teams spend hours manually reviewing job descriptions.

Identifying required technical and soft skills is time-consuming.

Errors in skill mapping can lead to poor hiring decisions.

Manual review is slow and time consuming

Project Scope

Target Users: HR teams and recruiters.

Developed an AI-powered NLP extraction to analyze job descriptions and extract technical and soft skills for HR teams.

The tool automatically categorizes skills, prioritizes key requirements, and provides structured insights to improve hiring accuracy, workforce planning, and skill-gap analysis.

Project Scope Continuation

Application will categories below skill sets:

- Programming Languages
- Databases & Data Warehouses
- Cloud Platforms
- DevOps & CI/CD Tools
- ETL & Data Migration Tools
- Machine Learning & AI Frameworks
- BI & Reporting Tools
- SAP Functional & Technical Skills
- Soft Skills

Why Rule based NLP and System Architecture?

Why NLP?

- High precision, interpretable, no training data
- Quicker and provides quicker insights based on the Job description.

System Architecture

- Input → NLP → Matcher → Output

Solution Overview

Automatically analyzes job descriptions from PDFs, DOCX, or text.

Extracts and categorizes:

- Minimum Qualifications
- Technical skills
- Soft skills
- Tools & technologies

Prioritizes key skills to help recruiters focus on relevant requirements.

Features

Upload or paste job descriptions.

AI automatically identifies skills and tools.

Categorizes skills into technical, soft, cloud, DevOps, ML/AI, and more.

Provides structured insights for quick decision-making.

Benefits

- Saves time and reduces manual effort.
 - Improves accuracy of candidate-job matching.
 - Supports workforce planning and skill-gap analysis.
 - Scalable solution for multiple job postings.
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How It Works

- Input job description (copy-paste or file upload).
- NLP engine scans the text and identifies key terms.
- Matches terms against a predefined tech stack.
- Outputs categorized skills and highlights key requirements.

Tech Stack

- AI/NLP engine analyzes text.
- Recognizes thousands of technical and soft skills.
- Provides results including Minimum Qualifications, Technical Skills, Soft skills and domain specific skillsets

Methodology

Problem Solving Approach:

- Rule-Based Skill Extraction, Accurate for specific job categories
- Predefined keywords and phrases for each category (Programming Languages, Databases, Cloud, etc.)
- Text is processed using NLP (Spacy)
- PhraseMatcher identifies skills from the job description
- Easy to update and extend with new skills
- Transparent and interpretable results
- Fast, cost-effective and lightweight approach
- Easy to maintain for HR-focused skill extraction
- Works well with structured and unstructured job descriptions

Demo Snapshot

AI Skill Extraction

Choose input method:

Paste Text Upload File (PDF/DOCX)

Input

Duration of the Contract: 12+ Months
Pay Rate: Open, DOE
Client Industry: B2B / Technology / Digital Analytics
Skills Required:

- Primary: B2B, Data Engineering, Databricks
- Secondary: Project Management, Stakeholder Handling
- Good to Have: MarTech / Marketo, Salesforce or Dynamics, API development (RESTful & GraphQL), Cloud Platforms (Azure/AWS/Google Cloud Platform)

Job Description

Output

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Job Description

Extracted Tech Stack & Skills

API Integrations

- graphql (2)
- apis (2)

Minimum Qualifications

- experience (1)

Cloud Platforms

- azure (1)
- aws (1)

ML AI

- machine learning (1)

Future Work

- BERT NER, matching, dashboards
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Any Queries?

Thank you
