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# An AI & ML based BM25-Driven Methodology for Shortlisting Job Applicant Resumes

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**Abstract:** *These days, a lot of applications, such shortlisting candidates for recruiting processes, depend on information retrieval technologies. This research study presents the use of the robust ranking algorithm Best Match 25 (BM25) for information retrieval in the context of applicant shortlisting. The approach aims to improve the accuracy and efficacy of candidate shortlisting in comparison to earlier methods. This study proposes a method for integrating BM25 into the hiring process to facilitate the selection of qualified candidates from a corpus of resumes or candidate CVs. This study offers a candidate shortlisting system that uses code-driven information retrieval techniques to assist recruiters and HR professionals in locating people with specific skill sets. This code-driven system integrates custom parsers and query processors to efficiently match job requirements with job descriptions. By combining indexing, ranking algorithms, and relevance scoring, the system provides a personalized selection of top candidate matches, streamlining the shortlisting process. This approach is also adaptable and scalable to handle big datasets, which makes it appropriate for a range of hiring processes. This study emphasizes the special role of code-driven solutions in modern candidate shortlisting, stressing the need for efficient information retrieval techniques to satisfy talent acquisition requirements.*

**Keywords**: Candidate Shortlisting, Recruitment Process, BM25, Information Retrieval, Document Ranking, Query Processing, Code-Driven Solutions, Resume Parsing