

# JobFit: Resume Categorizer and ATS

## Abstract

The **Resume Categorizer and ATS (Applicant Tracking System) Application** leverages advanced **Natural Language Processing (NLP)** techniques and **Machine Learning** algorithms to automate the categorization and analysis of resumes. In the current job market, recruiters and HR professionals are often overwhelmed by the volume of applications received for various positions. This application addresses this challenge by providing an efficient solution to categorize resumes based on predefined job categories, extract key candidate information, and filter resumes by specific skills.

The application utilizes Python's **spacy** library for **Named Entity Recognition (NER)** to accurately extract candidate names and contact details from resumes. The resume text is cleaned and transformed using the **Term Frequency-Inverse Document Frequency (TF-IDF)** vectorization, which helps in effectively representing textual data for machine learning models. A pre-trained machine learning model is used to classify resumes into categories such as "Java Developer," "Data Scientist," "Web Designer," and more, based on the content of the resumes.

Additionally, the application features a robust **skill extraction** mechanism that identifies and lists relevant skills from the resumes. By using a combination of predefined skill sets and NLP techniques, the application ensures a comprehensive and accurate identification of candidate skills, eliminating unwanted symbols and garbage values.

Users can upload multiple resumes in PDF format, and the application processes these files to produce a categorized output. The results include candidate names, job categories, filenames, extracted skills, and contact details, which are compiled into a downloadable **CSV file** for ease of access and further analysis.

This project demonstrates the effective application of **NLP** and **machine learning** in simplifying and automating the recruitment process, providing significant time savings and efficiency improvements for HR professionals. By integrating categorization and applicant tracking functionalities, the application offers a comprehensive solution to manage and streamline the hiring workflow.