# Project Submission: Resume Categorization Applocation with Machine Learning

## Milestone 2

### 1. Related Work

- Traditional resume screening methods are manual, time-consuming, and biased. Several machine learning techniques, especially in natural language processing (NLP) and classification, have been explored for automating this process, enhancing accuracy, and reducing recruiter workload. This project builds on these techniques to create a system that automatically categorizes resumes and recommends job matches based on candidate skills.

### 2. Data Pre-processing

- The dataset consists of resumes, which require parsing and cleaning. Key steps include handling missing data, normalizing text, and extracting essential features like skills, experience, and education from the resumes using NLP techniques. This ensures the data is ready for machine learning model training.

### 3. Data Visualization / EDA

- Exploratory Data Analysis (EDA) was conducted to understand resume distribution by categories, identify the most common skills, and visualize trends in job recommendations. Libraries like Matplotlib and Seaborn were used for creating visualizations such as skill distribution histograms and job category comparisons.

### 4. Model Creation and Testing

- Multiple machine learning models were tested, including decision trees and support vector machines (SVM), for resume categorization. A collaborative filtering approach was used for job recommendations. Performance was evaluated using accuracy, precision, and recall, showing promising results in automating resume screening and job matching.

This project aims to automate the resume screening process by utilizing machine learning, offering a scalable solution to recruitment challenges. It improves efficiency, reduces bias, and enhances candidate engagement.

**For more details on the source code and models, check the** GitHub repository.

**Here are some references you can include for the project:**

**References:**

**1. Saeed, N. (2024): Building Resume Screening App | Resume Screening with Machine Learning: Job Recommendations, Parsing, & Categorization.**

**2. Kaggle. (2024): Resume Datasets - 1**

**Resume Datasets - 2**

**3. Kaggle. (2024): Resume Data for Testing**

**4. Brownlee, J. (2023). Machine Learning Mastery: A Gentle Introduction to Machine Learning*. Machine Learning Mastery.**

**These references support the methods and tools used in your project for resume categorization and job recommendation systems.**