INTELLIGENT RECRUITMENT & RESUME SCREENING USING MACHINE LEARNING

FEYNN AI LABS INTERNSHIP PROJECT

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Problem Statement: Resume Screening

Despite significant investments in recruitment and hiring, many organizations struggle to find and attract qualified candidates for open positions. Traditional recruitment methods such as job postings and resume screening can be time-consuming and often result in a high volume of unqualified candidates. This can lead to longer time-to-hire, higher recruitment costs, and lower quality hires. A solution is needed to streamline and optimize the recruitment and hiring process, leveraging advanced technologies such as AI, machine learning, and data analytics to identify and attract the best-fit candidates while minimizing time and costs.

An intelligent recruitment and hiring platform is a software solution that uses artificial intelligence and other advanced technologies to streamline and optimize the recruitment and hiring process. These platforms can help organizations reduce the time and effort required to find and hire qualified candidates, while also improving the quality of the hires.

Some key features of an intelligent recruitment and hiring platform may include:

Resume screening: AI-powered resume screening tools can quickly scan resumes and identify the best-fit candidates based on keywords, skills, experience, and other criteria.

Candidate matching: Advanced algorithms can analyze job descriptions and candidate profiles to identify the best matches, even if the job titles or qualifications don't exactly match.

Pre-employment assessments: Online assessments can be used to evaluate candidates' skills, abilities, and personality traits, providing a more accurate picture of their potential fit for the role.

Video interviewing: Video interviewing tools can allow candidates to interview remotely, reducing the need for in-person interviews and allowing for greater flexibility in scheduling.

Candidate engagement: Automated communication tools can help keep candidates engaged throughout the recruitment process, providing updates on their status and next steps.

Data analytics: Recruitment and hiring platforms can provide real-time data and insights into the hiring process, allowing organizations to identify areas for improvement and make data-driven decisions.

Overall, an intelligent recruitment and hiring platform can help organizations save time and money while improving the quality of their hires

Market/Customer/Business Need Assessment

Market Assessment:

There is a growing need in the market for recruitment and hiring platforms that can help organizations save time and reduce costs while improving the quality of their hires.

The global recruitment software market is expected to reach USD 3.97 billion by 2027, with a CAGR of 7.4% from 2020 to 2027.

Why is resume screening so widely used?

1. It narrows down a large pool of candidates

2. It reduces time to fill

3. It helps you assess the effectiveness of job posts

Source: Indeed

vervoe

The COVID-19 pandemic has accelerated the adoption of remote hiring and virtual recruiting technologies, creating a greater demand for intelligent recruitment and hiring platforms.

The objective of using various screening techniques and levels of screening is to filter out candidates that either don't meet the stated minimum requirements or aren't a good fit for cultural or other reasons (i.e., job realities or salary expectations). Screening is simply a process of elimination. The goal is to ensure that those candidates who are invited to participate in a face-to-face interview are, in fact, highly qualified.

Evaluation by Association: Use the posting location—i.e., an industry or professional association-specific job site—as an initial screen.

Application: Conduct an initial assessment based on review of a candidate's cover letter, resume and application. This may also include review of a candidate's business (i.e., LinkedIn) and/or social networking (i.e., Facebook or Twitter) profiles. To avoid investing time assessing a candidate that isn't viable, incorporate pre-screening questions that require the candidate to attest that he or she meets the stated minimum criteria. In this phase, the objective is to eliminate candidates that don't meet the basic requirements for the position based on fundamental factors including minimum experience and education, salary expectations and/or willingness to relocate or meet work schedule requirements, if applicable.

Assessment: Conduct a preliminary assessment of skills. This can be done in conjunction with or subsequent to the application review process. Depending on position requirements, a more in-depth assessment of a candidate's level of skill and aptitude may be appropriate.

Screening Interview: An initial telephone interview is a second level of active screening that's used to assess the candidate's objective and motivation, relevant education and experience and to get a sense for the candidate as a person. In the course of approximately twenty to thirty minutes, an interviewer can confirm application and resume details and assess a range of soft skills—for example, active listening and communication—as well as engagement and overall level of poise and professionalism. The objective is to eliminate candidates that don't warrant the time and cost of an in-person interview or in-depth skills assessment.

External Verification: Verify stated educational qualifications and check references.

Using these techniques in combination with an online application system allows companies to reduce the time and costs of a paper-based recruiting and screening process and may reduce liability associated with compliance reporting and record retention.

Customer Assessment:

Organizations of all sizes and industries can benefit from intelligent recruitment and hiring platforms, from small startups to large enterprises.

HR professionals and recruiters are the primary users of these platforms, as they are responsible for managing the recruitment and hiring process.

Customers are looking for platforms that are easy to use, customizable to their needs, and can integrate with their existing HR systems.

Creating a robust talent pipeline is a critical step on the road to building a successful team. When executed well, the interview process is swift, painless, and hopefully even enjoyable for the candidate and company employees. But before you get there, a tremendous amount of work goes into sourcing and screening candidates. Resume screening tools can help make the process easier.

At larger companies, hiring teams may include several recruiters and recruiting coordinators, allowing for a shared workload. There's strength in numbers, and larger teams are better equipped to catch red flags and bring in top-rated talent.

On the other hand, some teams only have one or two recruiters who wear many hats. But whether your organization is large or small, if you're struggling to get through a massive pile of resumes, some companies turn to resume screening software.

Business Need Assessment:

The traditional recruitment process can be time-consuming, costly, and often results in low-quality hires.

The use of intelligent recruitment and hiring platforms can help organizations reduce recruitment costs, minimize time-to-hire, and improve the quality of their hires.

By leveraging AI, machine learning, and data analytics, organizations can identify the best-fit candidates for their open positions, resulting in better retention rates and increased productivity.

In a tight job market, companies need to maximize their strategies and tools for finding the best tech talent. Technology itself is part of the solution.

Managers and executives must also weigh the value of hiring internal candidates, who may be a more proven fit, versus external candidates with excellent references and qualifications

Depending on the position, some companies may put a high value on teamwork and collaborative skills, while others place more emphasis on a candidate's proven skills and accomplishments. Company A may have a process where finalists for a job opening meet with various team members who give hiring managers their evaluation. Company B might cut out the team member interview completely, and the hiring manager offers the job to the candidate they see as best qualified for the position.

But whatever the company culture and job openings, it all starts with each candidate's calling card -- the resume.

Target Specifications and Characterization (your customer characteristic)

Target Specifications:

Organizations of all sizes, industries, and geographies

HR professionals and recruiters responsible for managing the recruitment and hiring process

Companies with a high volume of job openings and/or a need to hire specialized or hard-to-find talent

Organizations that want to reduce recruitment costs, minimize time-to-hire, and improve the quality of their hires

Companies that value data-driven decision-making and want to leverage advanced technologies to optimize their recruitment process

Characterization of Customers:

HR professionals and recruiters who are tech-savvy and open to adopting new technologies

Companies that value diversity, equity, and inclusion in their recruitment process and want to minimize unconscious bias

Organizations that prioritize candidate experience and want to provide a seamless and engaging recruitment process for candidates

Companies that are experiencing high turnover rates or difficulty retaining employees

Businesses that are rapidly growing and need to scale their recruitment efforts quickly and efficiently.

External Search (online information sources/references/links)

"Intelligent Recruitment: How AI is Transforming Talent Acquisition" - A whitepaper by HR.com that explores the benefits and challenges of using AI in recruitment and hiring. Link: https://www.hr.com/en/resources/collaboration_and_engagement/intelligent-recruitment-how-ai-is-transforming-tal_ft8lejow.html
"The Future of Recruitment: AI and Hiring" - An article on the Society for Human Resource Management (SHRM) website that discusses the ways in which AI and machine learning are transforming the recruitment and hiring process. Link: https://www.shrm.org/hr-today/news/hr-magazine/summer2019/pages/the-future-of-recruitment-ai-and-hiring.aspx

"The Top 16 AI-powered Recruitment Software in 2021" - A list of AI-powered recruitment software solutions compiled by HR Technologist. Link: https://www.hrtechnologist.com/articles/recruitment-onboarding/top-ai-powered-recruitment-software-solutions-in-2019/

"The Impact of AI on Recruitment and Hiring" - An article on the Harvard Business Review website that explores the ways in which AI is changing the recruitment and hiring landscape. Link: https://hbr.org/2018/07/the-impact-of-ai-on-recruiting

Bench marking alternate products (comparison with existing products/services)

Benchmarking alternate products is an important step in evaluating the strengths and weaknesses of existing products or services in the market. Here are some examples of existing intelligent recruitment and hiring platforms that can be used for comparison:

LinkedIn Talent Solutions - LinkedIn is a popular platform for sourcing and recruiting candidates, offering a range of tools and features such as job postings, candidate

search, and applicant tracking. LinkedIn also uses AI and machine learning to provide job recommendations and match candidates with relevant job openings.

Jobvite - Jobvite is a cloud-based recruiting software that offers applicant tracking, candidate engagement, and recruitment marketing tools. The platform also uses AI and machine learning to automate various aspects of the recruitment process, such as resume screening and candidate matching.

Smart Recruiters – Smart Recruiters is a recruitment software that offers end-to-end hiring solutions, including job posting, applicant tracking, and candidate communication. The platform uses AI and machine learning to streamline the recruitment process and provide data-driven insights to recruiters and hiring managers.

Workday - Workday is an enterprise resource planning (ERP) software that offers human capital management (HCM) solutions, including recruitment and talent management tools. Workday's recruitment platform includes features such as job posting, candidate management, and interview scheduling, and leverages AI to match candidates with relevant job openings and provide data-driven insights.

By benchmarking these and other existing products, businesses can gain a better understanding of the features and capabilities of intelligent recruitment and hiring platforms, and identify opportunities for improvement or differentiation in their own offerings.

Applicable Patents (Patent of Tech/Software/Framework etc you are going to use in your Product/Service idea)

If you are planning to use a particular technology, software, or framework in your product or service idea, it is important to conduct a thorough patent search to ensure that you are not infringing on any existing patents. This can be done through online patent databases such as Google Patents, the United States Patent and Trademark Office (USPTO), or the World Intellectual Property Organization (WIPO). It is also recommended to consult with a patent lawyer to assess the patent landscape and ensure that your product or service idea does not violate any existing patents.

Applicable Regulations (government and environmental regulations imposed by countries)

If you are planning to develop and launch an intelligent recruitment and hiring platform, it is important to be aware of applicable regulations that govern technology, data privacy, and labor practices in the countries where you plan to operate. Here are some examples of regulations that may be relevant:

Data Privacy Regulations - In many countries, there are strict data privacy regulations that dictate how companies can collect, use, store, and share personal information. For example, the General Data Protection Regulation (GDPR) in the European Union (EU) imposes strict requirements for obtaining user consent, protecting user data, and providing users with access to their data.

Labor Laws and Regulations - Employment laws and regulations vary from country to country, and it is important to comply with local laws when hiring and managing employees. For example, in the United States, there are federal and state laws that govern issues such as minimum wage, overtime pay, and employee benefits.
Technology Regulations - Depending on the nature of your product or service, you may need to comply with regulations that govern the use of specific technologies or software. For example, if your platform uses facial recognition technology, you may need to comply with regulations that govern the use of biometric data.

Environmental Regulations - While not directly related to recruitment and hiring, environmental regulations may be relevant if your platform has a physical presence, such as an office or data center. For example, there may be regulations related to energy use, waste disposal, or hazardous materials.

It is important to research and comply with all applicable regulations in the countries where you plan to operate to avoid legal and financial penalties, and to maintain a positive reputation with customers and stakeholders.

Applicable Constraints (need for space, budget, expertise)

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Applicable Constraints (need for space, budget, expertise)

When developing an intelligent recruitment and hiring platform, there are several constraints that businesses should be aware of. Here are some examples of constraints that may be applicable:

Space - Depending on the size and scope of your platform, you may need physical space for data storage, servers, or other equipment. This can be a constraint for startups or businesses that are operating with limited physical space.

Budget - Developing and launching an intelligent recruitment and hiring platform can require significant financial resources, including funding for research and development, hiring technical staff, and marketing and advertising. This can be a constraint for businesses that have limited budgets or are unable to secure sufficient funding.

Expertise - Developing an intelligent recruitment and hiring platform requires specialized technical expertise in areas such as AI, machine learning, data analytics, and software development. Businesses may need to hire technical staff or engage with third-party vendors to provide this expertise.

Time - Developing a new platform can be a time-consuming process, requiring extensive planning, research, and testing. This can be a constraint for businesses that have a tight timeline or are competing with other companies in the market.

It is important for businesses to carefully consider these constraints and develop strategies to mitigate their impact. This may include exploring cost-effective alternatives, partnering with third-party vendors, or prioritizing key features and functionalities based on available resources.

Business Model (Monetization Idea)

There are several monetization ideas that can be used for an intelligent recruitment and hiring platform. Here are a few examples:

Subscription Model: Under this model, businesses can charge a monthly or yearly fee to access the platform's features and functionalities. This can be particularly effective if the platform provides value-added services such as data analytics or customized recruitment strategies.

Commission Model: Another monetization idea is to charge a commission for successful hires made through the platform. This can be particularly effective for businesses that are able to source and recruit high-quality candidates.

Advertising Model: The platform can also generate revenue through advertising, by allowing employers or job seekers to advertise their job openings or qualifications, respectively.

Freemium Model: Under this model, the basic functionalities of the platform are offered for free, while additional features or services are provided for a fee. This can be effective in attracting new customers and generating revenue from premium services.

Customized Pricing: The platform can also offer customized pricing for businesses based on their size, hiring needs, and other factors. This can provide a flexible pricing model that can cater to businesses of all sizes.

Ultimately, the best monetization idea will depend on the unique features and functionalities of the platform, as well as the needs and preferences of the target market. It is important for businesses to carefully evaluate each monetization idea and determine which is most appropriate for their business model and target market.

Concept Generation (process of coming up with Idea)

The process of generating ideas for an intelligent recruitment and hiring platform can involve several steps, including:

Identifying the Problem: The first step is to identify the problem or challenge that the platform is intended to solve. This can involve conducting market research, analyzing industry trends, and gathering feedback from potential customers.

Brainstorming: Once the problem has been identified, the next step is to generate ideas for how the platform can solve it. Brainstorming sessions can be conducted with stakeholders, team members, and external experts to generate a wide range of ideas.

Prioritizing Ideas: After brainstorming, the next step is to prioritize the ideas based on factors such as feasibility, impact, and customer demand. This can involve conducting a SWOT analysis to evaluate the strengths, weaknesses, opportunities, and threats associated with each idea.

Developing a Concept: Once the ideas have been prioritized, the next step is to develop a concept for the platform. This can involve creating a prototype or mock-up of the platform, defining its key features and functionalities, and determining its target market.

Testing and Refining: Once a concept has been developed, it is important to test and refine it through feedback from potential customers, industry experts, and other stakeholders. This can involve conducting focus groups, surveys, and user testing to gather feedback and make necessary adjustments to the concept.

Overall, the process of generating ideas for an intelligent recruitment and hiring platform involves a combination of creativity, market research, and feedback from stakeholders. By following a structured process and leveraging a range of resources, businesses can develop innovative and effective ideas for their platform.

Concept Development (Brief summary of Product/Service will be developed)

The intelligent recruitment and hiring platform that will be developed is a comprehensive software solution designed to help businesses streamline their hiring process and make data-driven decisions. The platform will leverage machine learning and data analytics technologies to provide businesses with insights into their hiring process, from candidate sourcing to onboarding.

The platform will offer a range of features and functionalities, including job posting and distribution, applicant tracking, candidate assessment and screening, and interview scheduling. It will also provide businesses with data-driven insights into their recruitment process, such as candidate demographics, source of hire, time-to-hire, and candidate experience.

The platform will be designed with the user in mind, with an intuitive and user-friendly interface that makes it easy for businesses to navigate and manage their hiring process. It will also be customizable to meet the unique needs and preferences of each business, with the ability to integrate with other HR systems and technologies.

Overall, the intelligent recruitment and hiring platform will be a powerful tool for businesses looking to improve their recruitment process and make data-driven hiring decisions.

Final Product Prototype (abstract) with Schematic Diagram

The final product prototype of the intelligent recruitment and hiring platform will be a comprehensive software solution that leverages machine learning and data analytics technologies to help businesses streamline their recruitment process. The platform will include a range of features and functionalities, such as job posting and distribution, applicant tracking, candidate assessment and screening, and interview scheduling.

The platform will be designed to provide businesses with data-driven insights into their recruitment process, such as candidate demographics, source of hire, time-to-hire, and candidate experience. These insights will enable businesses to make more informed hiring decisions, improve their recruitment strategies, and ultimately, achieve better hiring outcomes.

The platform will also be customizable to meet the unique needs and preferences of each business. It will be designed with an intuitive and user-friendly interface that makes it easy for businesses to navigate and manage their hiring process. Additionally, the platform will be able to integrate with other HR systems and technologies, such as payroll and performance management software.

Overall, the final product prototype of the intelligent recruitment and hiring platform will be a powerful tool for businesses looking to improve their recruitment process, save time and resources, and make data-driven hiring decisions.

Product details

Data cleaning: Data Cleaning is first step that help to clean data as per our use case we clean the data . step include in cleaning the data is remove unnecessary column in the dataset and use labelencoding then remove all the duplicate

Data preprocessing: Data preprocessing is the another step of preparing data for model building in this project we have to do some text preprocessing for preparing text .

Natural language processing: Natural language processing used for text processing cleaning the text using NLP lowercase, stopword removal , lemmatization , word tokenization then do the vectorization of the text and use for model building.

Model Building: Model that I used is Random forest classifier it is a one of the robust classifier algorithm in supervised learning and here I used combination of 300 decision tree

Model evaluation: Model evaluation is one of the important process for testing purpose , with the help of evaluation we assure about model how efficiently model will work in future time .

Team Required to develop

Database engineer

Data Analyst

ML Engineer

Human Resource for filter the resume based on ML output

What does it cost ?

The cost factor depend when the model reaches the deployment stage .

How does it work?
The intelligent recruitment and hiring platform works by leveraging machine learning and data analytics technologies to streamline the recruitment process. Here's a brief overview of how it works:
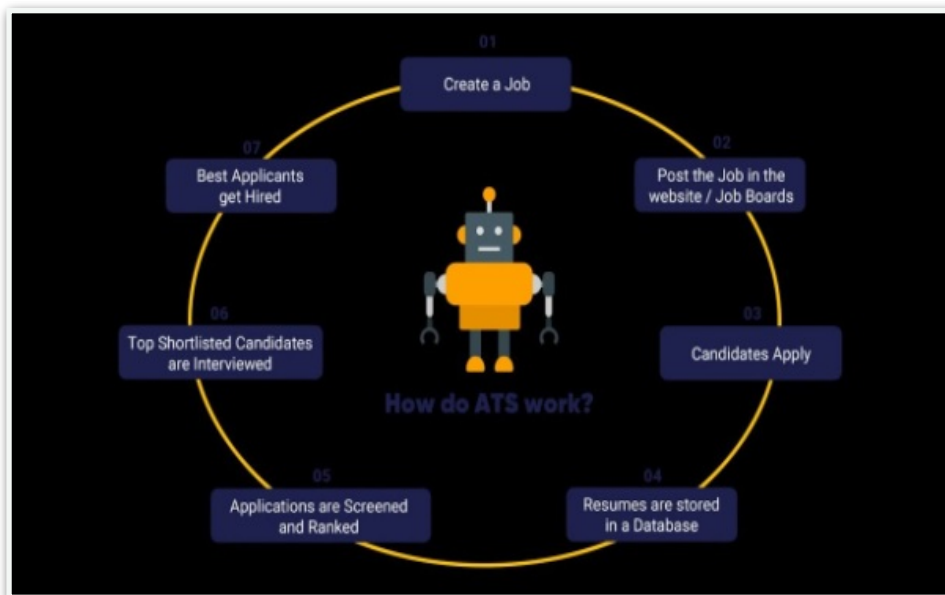
Job posting: The platform allows businesses to create and post job listings across multiple job boards and social media platforms.
Applicant tracking: The platform tracks and manages all job applications in a centralized system, making it easy for businesses to review and evaluate candidates.

Candidate assessment and screening: The platform uses algorithms to assess candidate qualifications and match them with job requirements, ranking candidates based on their fit.

Interview scheduling: The platform streamlines the interview scheduling process by allowing businesses to send invitations and schedule interviews within the platform.

Data-driven insights: The platform provides businesses with data-driven insights into their recruitment process, such as candidate demographics, source of hire, time-to-hire, and candidate experience.

Data Sources

The intelligent recruitment and hiring platform relies on a variety of data sources to provide businesses with insights into their recruitment process. These data sources may include:

Job boards and social media platforms

Resumes and applications

Candidate assessments and evaluations

Interview scheduling and feedback

Performance and productivity data for hired candidates

Algorithms, frameworks, software, etc. needed

The intelligent recruitment and hiring platform will require a variety of algorithms, frameworks, and software tools to operate effectively. Some of the key technologies that may be used include:

Machine learning algorithms for candidate assessment and screening

Data analytics tools for performance and productivity analysis

Cloud computing platforms for scalability and data storage

Frameworks for integrating with other HR systems and technologies

Team required to develop

Developing an intelligent recruitment and hiring platform will require a skilled and experienced team with expertise in software development, machine learning, and data analytics. The specific roles and responsibilities of the team may include:

Project manager

Software engineers

Machine learning engineers

Data scientists

UI/UX designers

Quality assurance engineers

Code Implementation

Import Required Library

```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from wordcloud import WordCloud, STOPWORDS
import nltk
from nltk.stem import PorterStemmer, WordNetLemmatizer
from nltk.corpus import stopwords
from nltk.tokenize import word_tokenize, sent_tokenize
import gensim
import re
from gensim.utils import simple_preprocess
from gensim.parsing.preprocessing import STOPWORDS
from sklearn.metrics import classification_report, confusion_matrix
```

Import dataset using Pandas

```python
df = pd.read_csv("/content/drive/MyDrive/Image_datset/Resume.csv")
df.head(5)
```

	ID	Resume_str	Resume_html	Category
0	16852973	HR ADMINISTRATOR/MARKETING ASSOCIATE\...	<div class="fontsize fontface vmargins hmargin...	HR
1	22323967	HR SPECIALIST, US HR OPERATIONS ...	<div class="fontsize fontface vmargins hmargin...	HR
2	33176873	HR DIRECTOR Summary Over 2...	<div class="fontsize fontface vmargins hmargin...	HR
3	27018550	HR SPECIALIST Summary Dedica...	<div class="fontsize fontface vmargins hmargin...	HR
4	17812897	HR MANAGER Skill Highlights ...	<div class="fontsize fontface vmargins hmargin...	HR

Drop Unnecessary *Coloumn*

```python
df.drop(columns = ['Resume_html', 'ID'], inplace = True)
df.head(5)
```

Number of Resume in indivisual category

```python
print(df['Category'].value_counts())
```
```
[48]
...   INFORMATION-TECHNOLOGY       120
      BUSINESS-DEVELOPMENT         120
      FINANCE                      118
      ADVOCATE                     118
      ACCOUNTANT                   118
      ENGINEERING                  118
      CHEF                         118
      AVIATION                     117
      FITNESS                      117
      SALES                        116
      BANKING                      115
      HEALTHCARE                   115
      CONSULTANT                   115
      CONSTRUCTION                 112
      PUBLIC-RELATIONS             111
      HR                           110
      DESIGNER                     107
      ARTS                         103
      TEACHER                      102
      APPAREL                       97
      DIGITAL-MEDIA                 96
      AGRICULTURE                   63
      AUTOMOBILE                    36
      BPO                           22
Name: Category, dtype: int64
```

Function for Preprocessing of text

```python
def preprocess(doc):
    # convert all characters in the string to lower case
    doc = doc.lower()
    # remove non-english characters, punctuation and numbers
    doc = re.sub('[^a-zA-Z]', ' ', doc)
    # tokenize word , it segregate the all words
    doc = nltk.tokenize.word_tokenize(doc)
    # remove stop words - the word that is not important to get insight and output so we remove it
    doc = [w for w in doc if not w in nltk.corpus.stopwords.words('english')]
    # stemming - it is a  the process of reducing a word to its stem that affixes to suffixes and prefixes or to the roots of words known as "lemmas
    doc = [STEMMER.stem(w) for w in doc]

    return ' '.join(doc)
```

```
df['Category'].value_counts().sort_index().plot(kind = 'bar' , figsize = (12,6) )
plt.title("Number of Resume for Each Profile")
plt.xlabel("Resume Profiles")
plt.ylabel("Resume Frequence ")
plt.show()
```


Number of Resume for Each Profile

Distribution
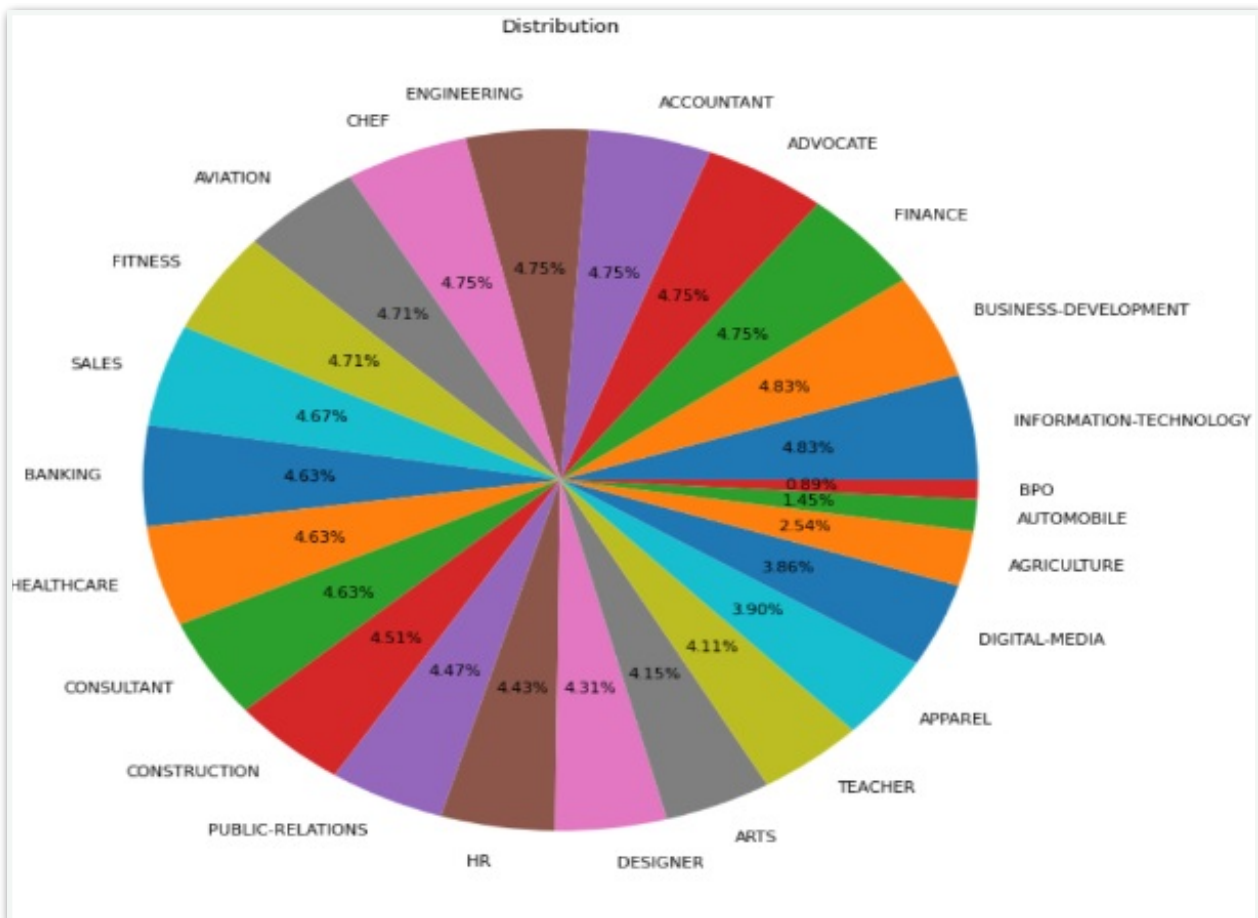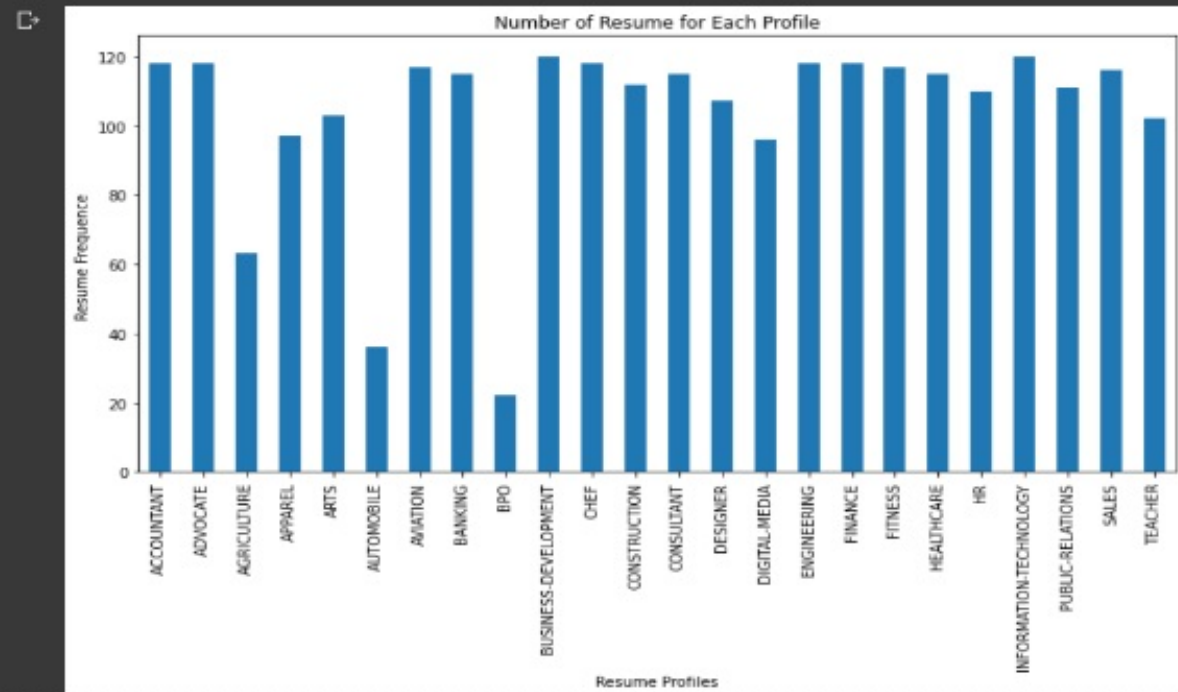
Train Test Spilit

```python
from sklearn.model_selection import train_test_split
X_train, X_test, Y_train, Y_test = train_test_split(df['clean'], df['Category'], test_size = 0.2)
```
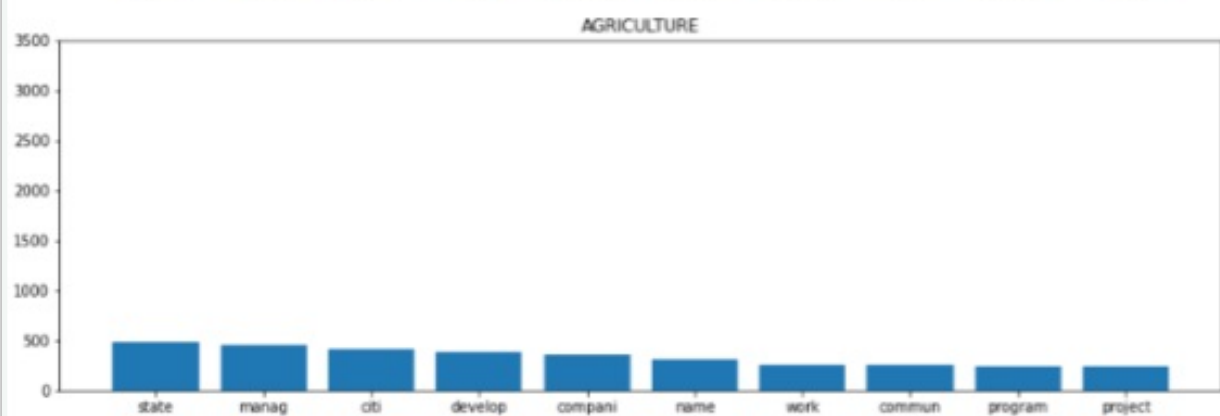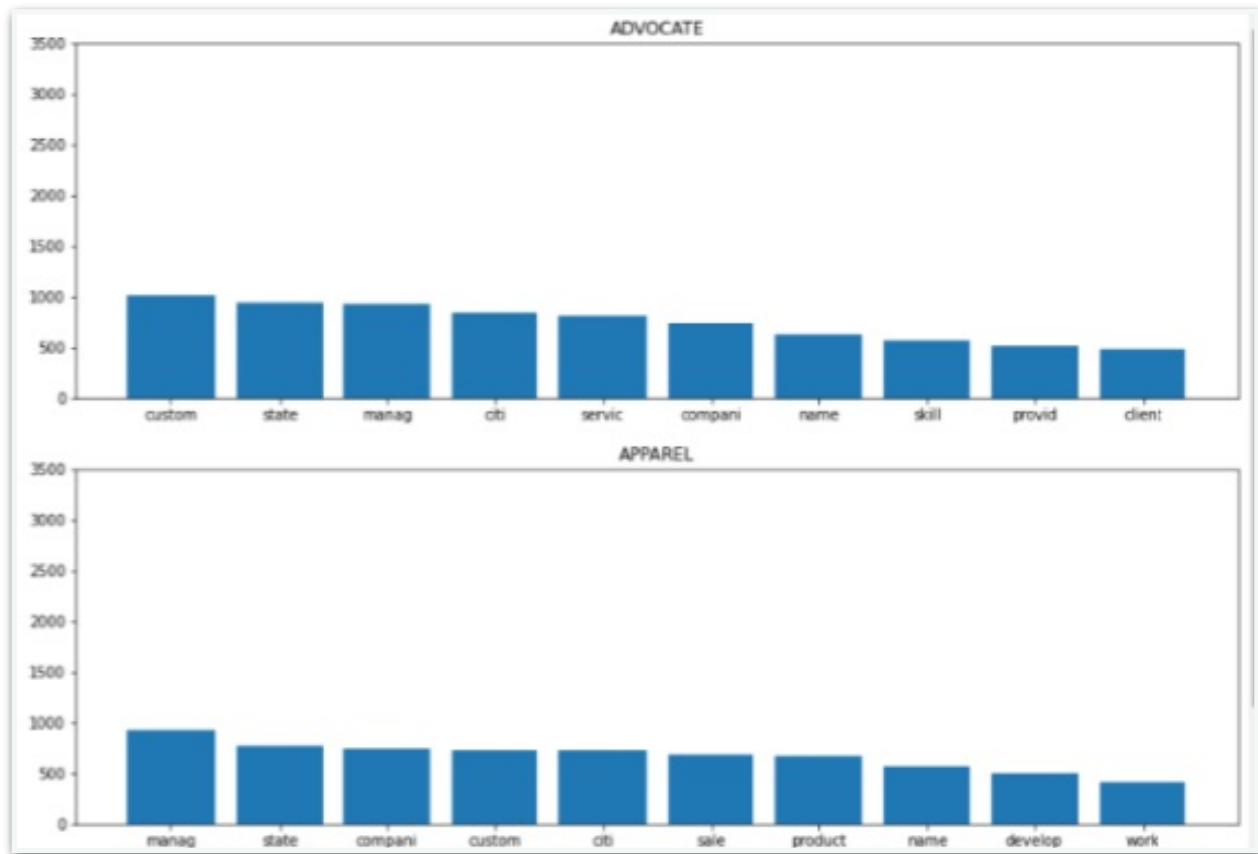
```python
print("Size of training data")
print(X_train.size)
print(Y_train.size)
print(" ")
print("Size of testing data")
print(X_test.size)
print(Y_test.size)
```

```
Size of training data
1987
1987

Size of testing data
497
497
```

Model Training for predict the category of Resume using Random Forest Classifier

```python
# We use grid search for finding the optimal parameter of Random Forest
from sklearn.ensemble import RandomForestClassifier
from sklearn.model_selection import GridSearchCV

RFC = RandomForestClassifier(random_state=42)
param_grid = {
    'n_estimators': [200, 500,300],
    'max_features': ['auto', 'sqrt', 'log2'],
    'max_depth' : [4,5,6,7,8,11],
    'criterion' :['gini', 'entropy']
}

grid = GridSearchCV(estimator=RFC, param_grid=param_grid, cv= 5, scoring='accuracy', return_train_score=False, verbose=1)
grid_search = grid.fit(conuntvectorizer_train, Y_train)
```

```
from sklearn import metrics
print("model report: %s: \n %s\n" % (RF_Model, metrics.classification_report(Y_test, prediction)))
```

```
model report: RandomForestClassifier(max_depth=11, max_features='auto', n_estimators=300,
                random_state=42):
                        precision    recall  f1-score   support

            ACCOUNTANT       0.60      0.89      0.71        28
              ADVOCATE       0.89      0.63      0.74        27
           AGRICULTURE       1.00      0.08      0.15        12
               APPAREL       1.00      0.35      0.52        23
                  ARTS       1.00      0.04      0.08        24
            AUTOMOBILE       0.00      0.00      0.00         6
              AVIATION       0.50      0.75      0.60        16
               BANKING       0.54      0.59      0.57        22
                   BPO       0.00      0.00      0.00         6
  BUSINESS-DEVELOPMENT       0.42      0.70      0.53        20
                  CHEF       0.58      0.76      0.66        25
          CONSTRUCTION       0.86      0.69      0.77        26
            CONSULTANT       1.00      0.12      0.21        26
              DESIGNER       0.63      0.71      0.67        17
         DIGITAL-MEDIA       0.59      0.59      0.59        22
           ENGINEERING       0.61      0.71      0.65        24
               FINANCE       0.71      0.45      0.56        22
               FITNESS       0.39      0.50      0.44        14
            HEALTHCARE       0.53      0.67      0.59        24
                    HR       0.57      0.94      0.71        18
INFORMATION-TECHNOLOGY       0.53      0.93      0.68        27
       PUBLIC-RELATIONS       0.52      0.52      0.52        25
                 SALES       0.39      0.35      0.37        26
               TEACHER       0.50      0.94      0.65        17

              accuracy                           0.58       497
             macro avg       0.60      0.54      0.50       497
          weighted avg       0.64      0.58      0.54       497
```

Conclusion

Based on the problem statement you provided, an intelligent recruitment and hiring platform that uses machine learning has the potential to significantly improve the recruitment and hiring process by leveraging advanced technology to identify and evaluate the most qualified candidates. This platform can help reduce bias and discrimination in the hiring process by providing objective criteria and data-driven insights to decision-makers.

By leveraging machine learning algorithms to analyze large amounts of data, the platform can identify patterns and trends that may not be immediately apparent to human recruiters, enabling more informed decision-making and better quality hires. Additionally, the platform can automate many of the time-consuming and repetitive tasks involved in recruitment and hiring, freeing up recruiters and hiring managers to focus on higher-level tasks.

Overall, an intelligent recruitment and hiring platform that uses machine learning has the potential to transform the recruitment and hiring process, making it more efficient, effective, and fair.

Model Notebook Google Drive Link

https://drive.google.com/drive/folders/1Uig-wE9S6SUiNRVM14d0zGwySgzRvGbh?usp=share_link

Github Repository Link

https://github.com/raksha2727/Intelligence-Requirement-and-Resume-Screening-Project-