

```
In [3]: import pandas as pd
from matplotlib import pyplot as plt
from nltk import everygrams
from nltk.corpus import stopwords as sw
import math
from collections import Counter
import itertools
import re

import warnings
warnings.filterwarnings('ignore')
```

```
In [4]: # Loading the datasets
resumeDf = pd.read_csv('resume_data.csv')
print ("Total Rows =", len(resumeDf))
print ("Available Columns =", list(resumeDf.columns))
resumeDf.head()
```

Total Rows = 14804

Available Columns = ['Resume_title', 'City', 'State', 'Description', 'work_experiences', 'Educations', 'Skills', 'Links', 'Certificates', 'Additional Information']

Out[4]:

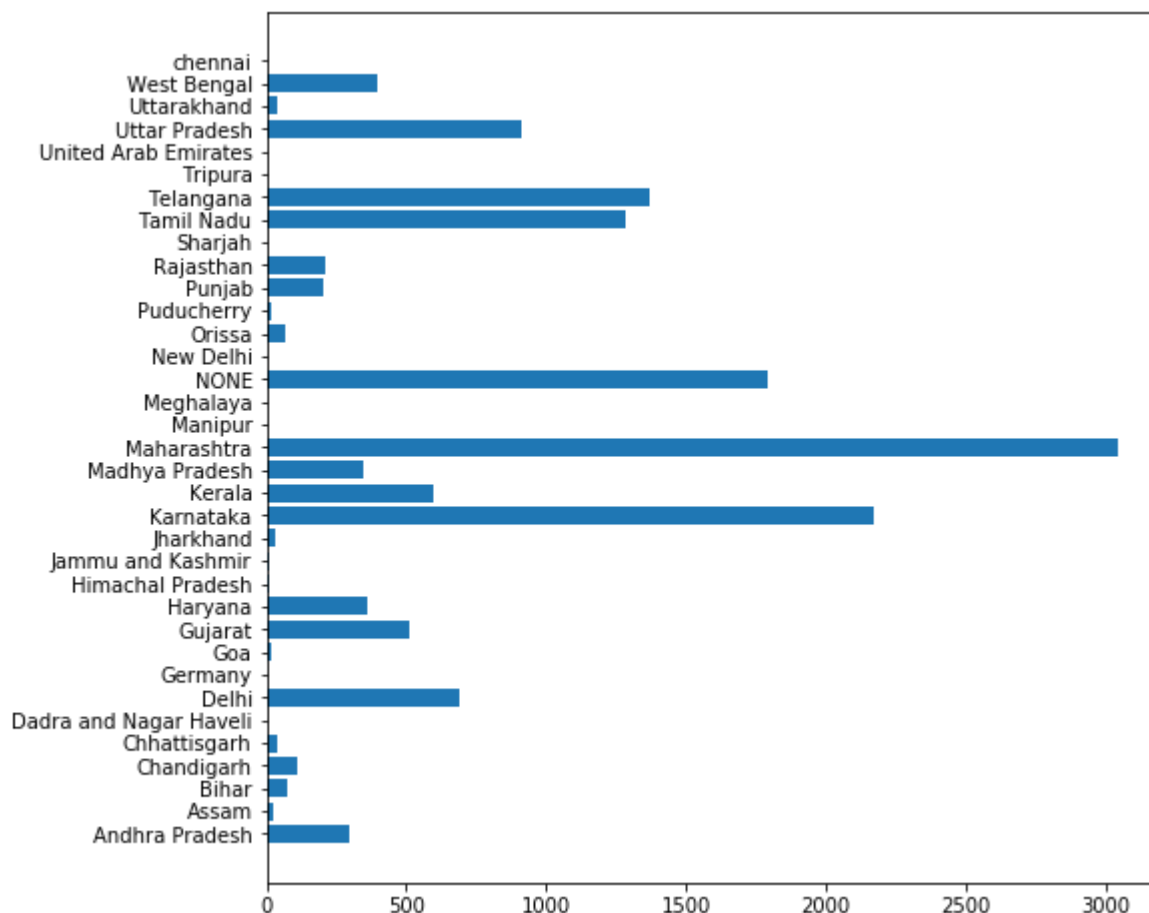
	Resume_title	City	State	Description	work_experiences	Educations	Skills
0	Java Developer	Tirur	Kerala	To prove myself dedicated, worthy and energetic...	{0: [{'wtitle': 'Java Developer'}, {'wcompany...}	{0: [{'e_title': 'Bachelor's in Bachelor of C...	['Java (Less than 1 year)', 'Jsp (Less than 1...
1	Software Developer	Bengaluru	Karnataka	Working as Software Developer at IngrolInfo Sof...	{0: [{'wtitle': 'JAVA DEVELOPER'}, {'wcompany...}	{0: [{'e_title': 'MCA in Master of Computer A...	['Programming Languages', 'Core Java', 'J2EE \n...
2	Java developer	Pune	Maharashtra	Looking for a challenging career which demands...	{0: [{'wtitle': 'Java Developer'}, {'wcompany...}	{0: [{'e_title': 'Bachelor's in Electrical En...	['ECLIPSE (year)', 'HIBERNATE', 'SPRING (L...
3	Seeking innovative and challenging career assi...	Pune	Maharashtra	NONE	{0: [{'wtitle': 'Java Developer'}, {'wcompany...}	{0: [{'e_title': 'BE in Computer'}, {'e_schoo...	['GIT', 'Angular 7', 'MAVEN', 'Java', 'Jen...
4	NONE	Pune	Maharashtra	NONE	{0: [{'wtitle': 'Java Developer'}, {'wcompany...}	{0: [{'e_title': 'Bachelor of Engineering in ...}	['Project: HF Payro Systems Role', 'Java Devel...

```
In [5]: # Preprocessing
resumeDf['State'] = resumeDf['State'].str.strip()
resumeDf['City'] = resumeDf['City'].str.strip()
```

```
In [6]: # Understanding judicial state distribution
resumeDf_grouped_state = resumeDf.groupby('State').size()
all_states = list(resumeDf_grouped_state.index)
all_sizes = resumeDf_grouped_state.values

selected_states, selected_sizes = [], []
for row in zip(all_states, all_sizes):
    if row[-1] > 1 and len(row[0]) > 2:
        selected_states.append(row[0])
        selected_sizes.append(row[1])

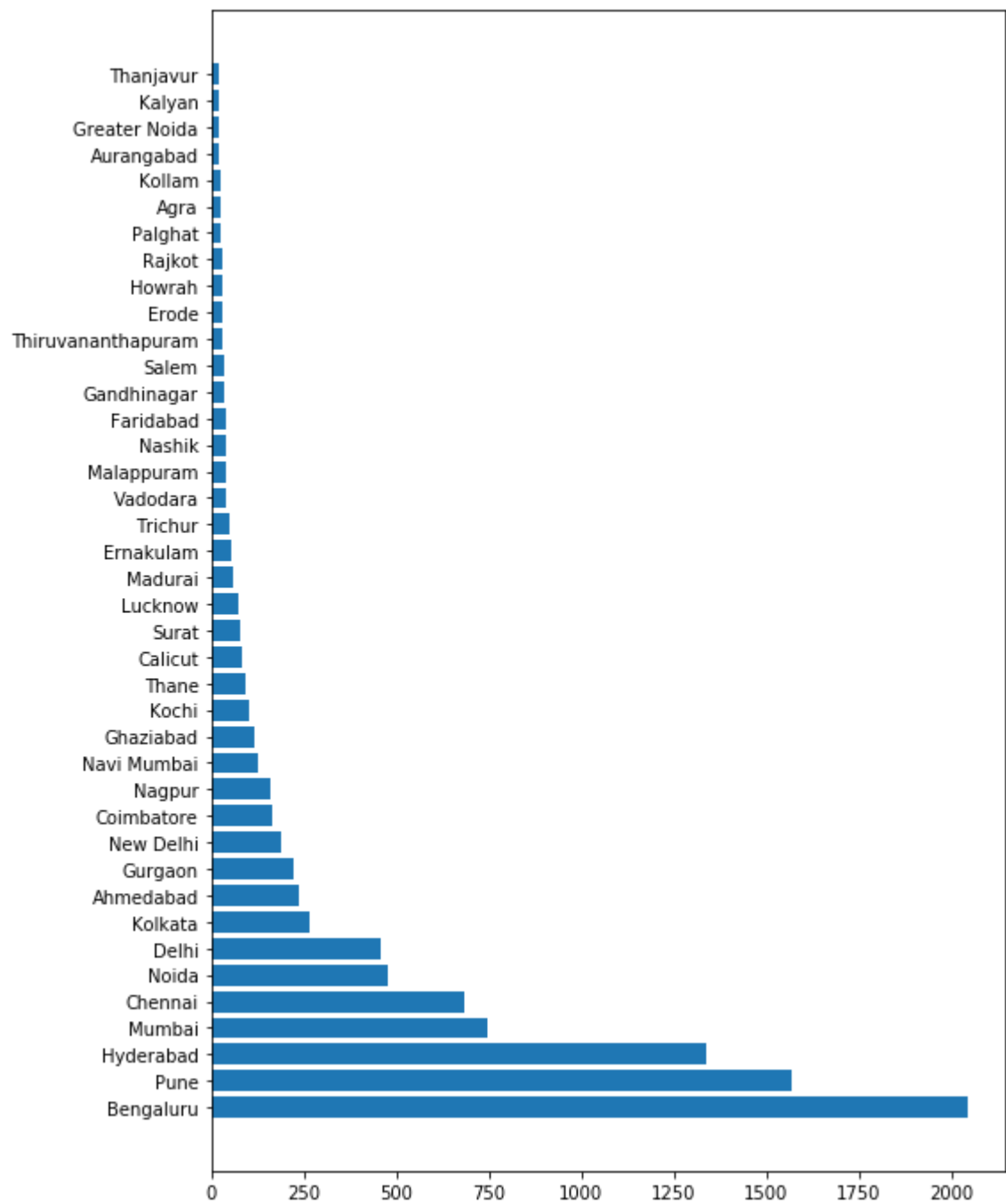
plt.figure(figsize=(8, 8))
plt.barh(selected_states, selected_sizes)
plt.show()
```



```
In [7]: # Understanding City distribution for the largest 10 cities
MAXIMUM_STATE, MAXIMUM_CITIES = 10, 40
top_states = [item[0] for item in sorted(zip(selected_states, selected_sizes),
key=lambda x: x[-1], reverse=True) if item[0] != 'NONE'][:MAXIMUM_STATE]
resumeDf_popular_states = resumeDf[resumeDf['State'].isin(top_states)]
resumeDf_popular_states_grouped = resumeDf_popular_states.groupby(['City', 'State']).size()
multi_indexes_grouped = resumeDf_popular_states_grouped.index
popular_cities, popular_city_size = [], []
for row in range(len(resumeDf_popular_states_grouped)):
    popular_cities.append(multi_indexes_grouped[row][0])
    popular_city_size.append(resumeDf_popular_states_grouped[row])

sorted_cities = sorted(zip(popular_cities, popular_city_size), key=lambda x: x
[-1], reverse=True)
popular_cities, popular_city_size = [list(tup)[:MAXIMUM_CITIES] for tup in zip
(*sorted_cities)]

plt.figure(figsize=(8, 12))
plt.barh(popular_cities, popular_city_size)
plt.show()
```



```

In [9]: # Understanding most popular contents in title
other_corrections = {'developer': 'Developer', 'Jr.': 'Junior', 'Php': 'PHP',
                     'php': 'PHP', 'mca': 'MCA', 'java': 'Java', 'Full Stack':
                     'FullStack', '1': 'one', '2': 'two', '3': 'three',
                     '4': 'four', '5': 'five', '6': 'six', '7': 'seven', '8':
                     'eight', '9': 'nine', '0': 'zero', 'Sr': 'Senior'}
custom_stopwords = ['NONE', 'I', 'Pvt', 'Ltd']
stopwords = list(set(sw.words('english') + custom_stopwords))
resume_titles = []
for line in list(resumeDf['Resume_title']):
    temp_list = []
    if str(type(line)) == "<class 'str'" or not math.isnan(line):
        # Apply other corrections
        for correction in other_corrections.keys():
            line = line.replace(correction, other_corrections.get(correction))
        for word in line.split():
            if word not in stopwords:
                filtered_wd = re.sub('[^0-9a-zA-Z]+', ' ', word.strip()).strip()

                if len(filtered_wd) == 0 or filtered_wd in stopwords:
                    continue
                temp_list.append(filtered_wd.lower())
        if len(temp_list) > 0:
            resume_titles.append(temp_list)

resume_titles_flattened = list(itertools.chain(*resume_titles))
# Futher flatten resume titles
new_resume_titles_flattened = []
for row in resume_titles_flattened:
    if len(row.split()) == 1:
        new_resume_titles_flattened.append(row.lower())
    else:
        for item in row.split():
            filtered_wd = re.sub('[^0-9a-zA-Z]+', ' ', item.strip()).strip()
            if len(filtered_wd) == 0 or filtered_wd in stopwords:
                continue

            for correction in other_corrections.keys():
                if filtered_wd == correction:
                    filtered_wd = filtered_wd.replace(correction, other_corrections.get(correction))
                    break
            new_resume_titles_flattened.append(item.lower())

```

```
In [10]: # Creating N-grams
lower_ngrams, upper_ngram = 2, 5
n_trigrams = dict(Counter(list(everygrams(new_resume_titles_flattened, lower_ngrams, upper_ngram))))
n_trigrams_tup = [(n_trigrams.get(key), key) for key in n_trigrams.keys()]
n_trigrams_tup.sort(key=lambda item: item[0], reverse=True)
print("Total N-Gram Tuples =", len(n_trigrams_tup))
# Printing Top Tuples
MAX_TUPLES = 500
n_trigrams_tup[:MAX_TUPLES]
```

Total N-Gram Tuples = 90994

```
Out[10]: [(648, ('software', 'developer')),
(581, ('php', 'developer')),
(421, ('web', 'developer')),
(385, ('python', 'developer')),
(384, ('java', 'developer')),
(374, ('developer', 'php')),
(351, ('machine', 'learning')),
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(298, ('developer', 'software')),
(272, ('years', 'experience')),
(232, ('developer', 'software', 'developer')),
(214, ('developer', 'python')),
(202, ('php', 'developer', 'php')),
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(178, ('data', 'scientist')),
(177, ('developer', 'web')),
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(151, ('android', 'developer')),
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(60, ('developer', 'fresher'))]
```



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(12, ('demonstrated', 'history', 'working', 'information')),
(12, ('history', 'working', 'information', 'technology'))]
```



```

In [129]: # Understanding most popular contents in description
custom_stopwords = ['NONE', 'to', 'using', 'i', 'pvt', 'ltd', 'it', 'use', 'ha
ving', 'along', 'would', 'etc', 'gives']
stopwords = list(set(sw.words('english') + custom_stopwords))
resume_descr = []
for line in list(resumeDf['Description']):
    temp_list = []
    if str(type(line)) == "<class 'str'" or not math.isnan(line):
        # Apply other corrections
        for correction in other_corrections.keys():
            line = line.replace(correction, other_corrections.get(correction))
        for word in line.split():
            if word not in stopwords:
                filtered_wd = re.sub('[^0-9a-zA-Z]+', ' ', word.strip()).stri
p()

                if len(filtered_wd) == 0 or filtered_wd in stopwords:
                    continue
                if len(filtered_wd) > 1:
                    temp_list.append(filtered_wd.lower())
        if len(temp_list) > 0:
            resume_descr.append(temp_list)

resume_descr_flattened = list(itertools.chain(*resume_descr))
# Futher flatten resume titles
new_resume_descr_flattened = []
for row in resume_descr_flattened:
    if len(row.split()) == 1:
        new_resume_descr_flattened.append(row.lower())
    else:
        for item in row.split():
            filtered_wd = re.sub('[^0-9a-zA-Z]+', ' ', item.strip()).strip()
            if len(filtered_wd) == 0 or filtered_wd in stopwords:
                continue

            for correction in other_corrections.keys():
                if filtered_wd == correction:
                    filtered_wd = filtered_wd.replace(correction, other_co
rrections.get(correction))
                    break
            new_resume_descr_flattened.append(item.lower())

```

```
In [131]: # Creating N-grams
lower_ngrams, upper_ngram = 2, 5
n_trigrams = dict(Counter(list(everygrams(new_resume_descr_flattened, lower_ngrams, upper_ngram))))
n_trigrams_tup = [(n_trigrams.get(key), key) for key in n_trigrams.keys()]
n_trigrams_tup.sort(key=lambda item: item[0], reverse=True)
print("Total N-Gram Tuples =", len(n_trigrams_tup))
# Printing Top Tuples
MAX_TUPLES = 750
n_trigrams_tup[:MAX_TUPLES]
```

Total N-Gram Tuples = 1192755

```
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(822, ('design', 'development')),
(809, ('sql', 'server')),
(756, ('data', 'science')),
(734, ('problem', 'solving')),
(708, ('experience', 'working')),
(696, ('deep', 'learning')),
(688, ('growth', 'organization')),
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(671, ('two', 'years')),
(663, ('team', 'player')),
(647, ('html', 'css')),
(615, ('good', 'experience')),
(615, ('big', 'data')),
(612, ('extensive', 'experience')),
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(600, ('web', 'services')),
(591, ('experience', 'developing')),
(586, ('new', 'technologies')),
(582, ('life', 'cycle')),
(558, ('application', 'development')),
(554, ('pl', 'sql')),
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(369, ('three', 'years', 'experience')),
(366, ('it', 'experience')),
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```

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(321, ('pvt', 'ltd')),
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```

```
In [139]: # Understanding most popular contents in Additional Information
custom_stopwords = ['NONE', 'to', 'using', 'i', 'pvt', 'ltd', 'it', 'use', 'ha
ving', 'along', 'would', 'etc', 'gives']
stopwords = list(set(sw.words('english') + custom_stopwords))
resume_add_info = []
for line in list(resumeDf['Additional Information']):
    temp_list = []
    if str(type(line)) == "<class 'str'" or not math.isnan(line):
        # Apply other corrections
        for correction in other_corrections.keys():
            line = line.replace(correction, other_corrections.get(correction))
        for word in line.split():
            if word not in stopwords:
                filtered_wd = re.sub('[^0-9a-zA-Z]+', ' ', word.strip()).stri
p()
                if len(filtered_wd) == 0 or filtered_wd in stopwords:
                    continue
                if len(filtered_wd) > 1:
                    temp_list.append(filtered_wd.lower())
        if len(temp_list) > 0:
            resume_add_info.append(temp_list)

resume_add_info_flattened = list(itertools.chain(*resume_add_info))
# Futher flatten resume titles
new_resume_add_info_flattened = []
for row in resume_add_info_flattened:
    if len(row.split()) == 1:
        new_resume_add_info_flattened.append(row.lower())
    else:
        for item in row.split():
            filtered_wd = re.sub('[^0-9a-zA-Z]+', ' ', item.strip()).strip()
            if len(filtered_wd) == 0 or filtered_wd in stopwords:
                continue

            for correction in other_corrections.keys():
                if filtered_wd == correction:
                    filtered_wd = filtered_wd.replace(correction, other_co
rrections.get(correction))
                break
            new_resume_add_info_flattened.append(item.lower())
```

```
In [140]: # Creating N-grams
lower_ngrams, upper_ngram = 2, 7
n_trigrams = dict(Counter(list(everygrams(new_resume_add_info_flattened, lower_ngrams, upper_ngram))))
n_trigrams_tup = [(n_trigrams.get(key), key) for key in n_trigrams.keys()]
n_trigrams_tup.sort(key=lambda item: item[0], reverse=True)
print("Total N-Gram Tuples =", len(n_trigrams_tup))
# Printing Top Tuples
MAX_TUPLES = 750
n_trigrams_tup[:MAX_TUPLES]
```

Total N-Gram Tuples = 1983653

```

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(81, ('management', 'tools')),
(81, ('word', 'ms', 'excel')),
(81, ('data', 'structures', 'algorithms')),
(81, ('bootstrap', 'javascript', 'jquery')),
(81, ('data', 'science', 'machine')),
(81, ('science', 'machine', 'learning')),
(81, ('deep', 'learning', 'data')),
(80, ('mini', 'project')),
(80, ('script', 'jquery')),
(80, ('android', 'app')),
(80, ('systems', 'unix')),
(80, ('php', 'wordpress')),
(80, ('working', 'experience')),
(80, ('technical', 'skill', 'set')),
(80, ('html', 'java', 'script')),
(80, ('cloud', 'platform', 'gcp')),
(80, ('ms', 'access', 'sql')),
(80, ('technical', 'skills', 'web', 'technologies')),
(80, ('web', 'technologies', 'htmlfive', 'cssthree'))]
```

```

In [17]: # Fetching the Educational Details
continued_for = 0
common_key = []
degrees = []
others = []
pre_common_replacement = {'Masters of': 'Master of', 'Bachelors of': 'Bachelor of', 'Master s in': 'Master of', 'Master in': 'Master of', 'Master s': 'Master',
                           'Bachelor s in': 'Bachelor of', 'Bachelor in': 'Bachelor of', 'Bachelor s': 'Bachelor'}

common_replacement = {'BE': 'Bachelor of Engineering', 'B E': 'Bachelor of Engineering', 'MCA': 'Master of Computer Application', 'ME': 'Master of Engineering', 'M E': 'Master of Engineering', 'CSE': 'Computer Science Engineering', 'CS': 'Computer Science Engineering', 'B A': 'Bachelor of Arts', 'BA': 'Bachelor of Arts', 'BCS': 'Bachelor of Computer Science', 'B C S': 'Bachelor of Computer Science', 'M C A': 'Master of Computer Application', 'B Tech': 'Bachelor of Technology', 'B C A': 'Bachelor of Computer Application', 'BTech': 'Bachelor of Technology', 'BCA': 'Bachelor of Computer Application', 'B Sc': 'Bachelor of Science', 'B S': 'Bachelor of Science', 'BS': 'Bachelor of Science', 'BBA': 'Bachelor of Business Application', 'B B A': 'Bachelor of Business Application', 'B S C': 'Bachelor of Science', 'SSLC': 'Class X', 'S S L C': 'Class X', 'AISSE': 'Class X', 'MS': 'Master of Science', 'M S': 'Master of Science', 'PhD': 'Doctoral', 'P h D': 'Doctoral', 'M Sc': 'Master of Science', 'Bcom': 'Bachelor of Commerce', 'B com': 'Bachelor of Commerce', 'BSc': 'Bachelor of Science', 'MSc': 'Master of Science', 'MBA': 'Master of Business Administration', 'M B A': 'Master of Business Administration', 'M Tech': 'Master of Technology', 'MTech': 'Master of Technology', 'M Sc': 'Master of Science', 'S S C': 'Class X', 'SSC': 'Class X', 'HSC': 'Class XII', 'PG': 'Post Graduate', 'UG': 'Under Graduate', 'S S C': 'Class X', 'H S C': 'Class XII', 'C B S E': 'Class XII', 'CBSE': 'Class XII', 'Higher Secondary': 'Class XII', '10th': 'Class X', '12th': 'Class XII', 'BBM': 'Bachelor of Business Management', 'B B M': 'Bachelor of Business Management', 'HIGH SCHOOL': 'Class XII', 'Plus Two': 'Class XII', 'I C S E': 'Class X', 'Secondary School Examination': 'Class X'}

common_replacement_vals = list(set([common_replacement.get(key).lower() for key in common_replacement.keys()]))
unique_identifiers = {'B': ''}

for row in resumeDf['Educations']:
    if str(type(row)) != "<class 'float'>":
        try:

```

```

vals = eval(row)
for idx in range(len(vals)):
    education_row = vals[idx][0]
    key = list(education_row.keys())[0]
    degree_val = education_row.get(key)
    degree_val = re.sub('[^0-9a-zA-Z]+', ' ', degree_val.strip())
.strip()

    if degree_val.lower() == 'none' or len(degree_val) < 2:
        continue

    elif degree_val == 'Bachelor':
        degrees.append('Ordinary Bachelor')
        continue

    elif degree_val == 'Master':
        degrees.append('Ordinary Master')
        continue

    else:

        # Pre-common replacement
        for precommon in pre_common_replacement.keys():
            if degree_val.find(precommon) != -1:
                degree_val = degree_val.replace(precommon, pre_com
mon_replacement.get(precommon))
                break

        flag=False;
        for common_vals in common_replacement_vals:
            if degree_val.lower().find(common_vals) != -1:
                degrees.append(common_vals)
                flag = True;
                break

        if not flag:
            for key in common_replacement.keys():
                if key.lower() in degree_val.lower():
                    degrees.append(common_replacement.get(key).low
er())

                    flag = True;
                    break

        if not flag:
            if degree_val == 'Bachelor':
                degrees.append('Ordinary Bachelor')
            elif degree_val == 'Master':
                degrees.append('Ordinary Master')

            else:
                degrees.append(degree_val)
                others.append(degree_val)

except:
    continue

```

```
In [18]: # Printing the most common degrees
degree_map = dict(Counter(degrees))
degree_map_tup = [(degree_map.get(key), key) for key in degree_map.keys()]
degree_map_tup.sort(key=lambda item: item[0], reverse=True)
degree_map_tup
```

```
Out[18]: [(3167, 'bachelor of engineering'),
(2993, 'class x'),
(2652, 'bachelor of technology'),
(2128, 'class xii'),
(1995, 'computer science engineering'),
(1855, 'bachelor of science'),
(1848, 'bachelor of arts'),
(1793, 'master of computer application'),
(1273, 'bachelor of computer application'),
(1124, 'master of engineering'),
(626, 'bachelor of computer science'),
(529, 'master of science'),
(324, 'bachelor of commerce'),
(318, 'master of technology'),
(269, 'post graduate'),
(201, 'Ordinary Master'),
(143, 'Education'),
(126, 'Diploma'),
(94, 'Master of Computer Science'),
(62, 'Certificate'),
(62, 'Diploma in Computer Engineering'),
(47, 'Diploma in Information Technology'),
(46, 'Ordinary Bachelor'),
(46, 'Diploma in Computer Science'),
(46, 'Secondary School Certificate'),
(45, 'Master of Computer science'),
(35, 'Computer Science'),
(31, 'Certification'),
(28, 'master of business administration'),
(27, 'Secondary Education'),
(27, 'education'),
(24, 'Diploma in Computer'),
(22, 'Technology'),
(20, 'Information Technology'),
(20, 'Engineering'),
(20, 'Diploma in Computer Technology'),
(19, 'Diploma in Computer science'),
(18, 'DIPLOMA'),
(18, 'Master of computer science'),
(18, 'Diploma in Computer Engineering in Computer Engineering'),
(16, 'Diploma in Computer Science and Engineering'),
(15, 'M Com'),
(14, 'Master of Computer Science in Computer Science'),
(14, 'Diploma in Information Technology in Information Technology'),
(14, 'General'),
(14, 'certification'),
(13, 'English'),
(12, 'Master Degree'),
(12, 'certificate'),
(12, 'Master of Information Technology'),
(12, 'Education A P'),
(11, 'bachelor of business management'),
(11, 'Maths'),
(10, 'School Certificate in Examination'),
(9, 'Diploma in IT'),
(9, 'Computer Science and Engineering'),
(9, 'Diploma in computer engineering'),
```

```

(9, 'Diploma in Engineering'),
(9, 'Diploma in Computer Application'),
(9, 'School Certificate'),
(8, 'Diploma in Technical Education'),
(8, 'DIPLOMA in Information Technology'),
(8, 'Leaving Certificate'),
(8, 'Secondary School Certificate in Examination'),
(8, 'Computer Engineering'),
(8, 'CERTIFICATE'),
(8, 'Diploma in Computer Science in Computer Science'),
(7, 'Master Degree in Computer Science'),
(7, 'Master of Computer'),
(7, 'Master of Computers'),
(7, 'Masters'),
(7,
'Diploma in Information Technology Engineering in Information Technology En
gineering'),
(7, 'Master In Computer Application in Computer Application'),
(7, 'doctoral'),
(7, 'Business'),
(7, 'Masters in Computer Science in Computer Science'),
(7, 'MPC'),
(7, 'Diploma in Computer in Engineering'),
(6, 'Polytechnic in Computer Science'),
(6, 'Maths Science'),
(6, 'Masters in Computer Application'),
(6, 'Engineering Technology'),
(6, 'Technology Used'),
(6, 'Masters in Computer Application in Computer Application'),
(6, 'Artificial Intelligence'),
(6, 'Diploma in Machine Learning and Artificial Intelligence'),
(6, 'Matriculation'),
(6, 'Diploma in I T'),
(6, 'business'),
(6, 'Diploma in Computer Engg'),
(5, 'EXAM'),
(5, 'M M'),
(5, 'technology'),
(5, 'D D M'),
(5, 'Diploma in Computer Science Council of Technical'),
(5, 'Diploma In Computer Science in Computer Science'),
(5, 'Computer Education'),
(5, 'H Sc'),
(5, 'C S'),
(5, 'Masters in Computer Science'),
(5, 'DIPLOMA in State Board of Technical'),
(5, 'Artificial Intelligence and Machine Learning'),
(5, 'Computer science'),
(5, 'Advanced diploma in Artificial in intelligence'),
(5, 'communication'),
(5, 'DIPLOMA in Comp'),
(5, 'Diploma in Information technology'),
(5, 'Chemical Engineering'),
(5, 'design'),
(5, 'Masters in Computer Applications'),
(5, 'M COM'),
(4, 'COMPUTER SCIENCE'),

```

```

(4, 'Diploma in Advanced Computing in Advanced Computing'),
(4, 'EDUCATION'),
(4, 'Diploma in engineering'),
(4, 'Graduation'),
(4, 'Deploma'),
(4, 'Diploma in Electrical'),
(4, 'Web designing'),
(4, 'Diploma in PHP Programming Language'),
(4, 'Govt'),
(4, 'General Linear Models'),
(4, 'M P C'),
(4, 'Secondary School Certificate in Computer Science'),
(4, 'Communication'),
(4, 'DAC'),
(4, 'Organisation'),
(4, 'Artificial Intelligence And Machine Learning'),
(4, 'Ph D close to obtain in Spatial Information Technology'),
(4, 'Introduction to Computer Science and Programming'),
(4, 'Introduction to Computer Science'),
(4, 'School Certificate in Board of Technical'),
(4, 'Diploma in computer'),
(4, 'Diploma in Technology'),
(4, 'secondary school certificate'),
(4, 'Secondary school certificate'),
(4, 'DAC in Advance computing'),
(4, 'Digital Marketing Certi'),
(4, 'DCE'),
(4, 'Master of Project'),
(4, 'Ph D in research'),
(4, 'ML in Additional Data Mining'),
(4, 'Per Engineering'),
(4, 'ML in Research Analyst Developer'),
(4, 'Post Graduation Diploma in Advanced Computing in Advanced Computing'),
(4, 'M Phil in Education'),
(4, 'Masters in Computer Applications in Computer Applications'),
(4, 'Diploma in Graphic'),
(4, 'Associate in Technology'),
(4, 'Chanakya Industrial Training'),
(4, 'diploma'),
(4, 'Certificate of Secondary Education in Indian'),
(3, 'Diploma in IT Tools Programming Internet Technology NET Technology'),
(3, 'Diploma in ECE'),
(3,
'Diploma in Machine Learning and Artificial Intelligence in Machine Learnin
g and Artificial Intelligence'),
(3, 'Education Examination Board'),
(3, 'Diploma in Advance Computing in Advance Computing'),
(3, 'Engineering and Research'),
(3, 'Hindi'),
(3, 'computing'),
(3, 'Diploma in E TC'),
(3, 'XII STD'),
(3, 'Master of Computer in Engineering'),
(3, 'Master of Computer Science Application'),
(3, 'Doctorate'),
(3, 'Diploma in Polytechnic'),
(3, 'Secondary School Certificate in music'),

```

```
(3, 'Polytechnic in Electronic and telecommunication'),
(3, 'Secondary Education in Common Subjects'),
(3, 'Diploma in electrical engg'),
(3, 'Diploma in computer science'),
(3, 'Completed Internship in Php'),
(3,
'Diploma in Computer Science and Engineering in Computer Science and Engine
ering'),
(3, 'diploma in Computer Science and Engineering'),
(3, 'Master of Computer Science And Engineering'),
(3, 'Master Degree in Computer Application in Computer Application'),
(3, 'Industrial'),
(3, 'Master of Artificial Intelligence Machine Learning'),
(3, 'Biology Science'),
(3, 'Master of computer in computer'),
(3, 'Secondary'),
(3, 'A Level'),
(3, 'Year of Pass'),
(3, 'P D M'),
(3, 'A Level in examination conducted'),
(3, 'Master degree in Computer Engineering'),
(3, 'Master of research'),
(3, 'X Std'),
(3, 'Masters in VLSI and ES'),
(3, 'Diploma in Electronic in communication Engineering'),
(3, 'Diploma in Data in Understanding 9 step process for data conversion'),
(3, '12'),
(3, '2 in Bio maths'),
(3, 'Diploma in Computer Science Technology'),
(3, 'Technology Summary'),
(3, 'Diploma in desired areas'),
(3, 'DIPLOMA in Maharashtra'),
(3, 'Master Degree in engineering'),
(3, 'Master of Software Engineer'),
(3, 'Heigher Secondary School Certificate in Science and Maths'),
(3, 'Secondary School Certificate in General Studies'),
(3, 'Diploma in DAC'),
(3, 'DAC in Advance'),
(3, 'Diploma in ECE Narayana Polytechnic Colleague Gudem'),
(3, 'Certificate in Data Science Machine Learning Python Deep Learning'),
(3, 'Master of Distributed and Mobile Computing'),
(3, 'Master of Maths'),
(3, 'Master of Computer and Information Science'),
(3, 'Science'),
(3, 'Master of Computers science'),
(3, 'Diploma in Electrical Engg in Electrical Engg'),
(3, 'Higher studies in Technology'),
(3, 'Diploma in stream of Computer engineering'),
(3, 'Certification and Certification'),
(3, 'Secondary School Certificate in Education'),
(3, 'Master of IT'),
(3, 'license'),
(3, 'COMPUTER SCIENCE AND ENGINEERING'),
(3, 'Master of Computer in Computer'),
(3, 'Software Engineering'),
(3, 'engineering'),
(3, 'Certificate in Course'),
```


(3, 'Certificate in Secondary Education Examination Board'),
(3, 'Master of computer science in computer science'),
(3, 'Diploma in DOTE'),
(3, 'Diploma in Computer Technology in Computer Technology'),
(3, 'M Com in Finance'),
(3, 'Chartered Accountant'),
(3, 'Diploma in Electrical Engineering in Electrical Engineering'),
(3, 'Master of Finance'),
(2, 'G D M'),
(2, 'Class Awarded for Engineering'),
(2, 'Diploma in savli'),
(2, 'IIHT in Advance Java and J2EE'),
(2, 'Diploma in information technology engineering'),
(2, 'Diploma in Computer technology'),
(2, 'Master degree in COMPUTER APPLICATION in COMPUTER APPLICATION'),
(2, 'Diploma in BTER'),
(2, 'computing technology'),
(2, 'M D M'),
(2, 'Certificate of Secondary Education in Examination'),
(2, 'Certificate of Higher Education in Computer Science'),
(2, 'Diploma in information technology'),
(2, 'Education T S'),
(2, 'industrial'),
(2, 'X STD'),
(2, 'Diploma in Engineering in Engineering'),
(2, 'DESIGN OF GALOIS LFSR'),
(2, 'Certificate in State board'),
(2, 'Diploma in Computer Engineering in Kerala'),
(2, 'Master of Software engineering'),
(2, 'Diploma in Nagar Parishad'),
(2, 'Senior secondary certificate in Madhya Pradesh'),
(2, 'Business English Certificate'),
(2, 'g ll r d ludh n'),
(2, '2science'),
(2, 'T E B fittter C N C operating'),
(2, 'ELECTRICIAN'),
(2, 'Ph D'),
(2, 'Ph D in supervision of Prof'),
(2, 'M Phil in supervision of Prof'),
(2, 'Intermidiete'),
(2, 'M Com in running'),
(2, 'Noble college in Arts'),
(2, 'Doctorate of Philosophy in Biotechnology in Philosophy'),
(2, 'I t i'),
(2, 'Human Resource'),
(2, 'LL B'),
(2, 'Professional Qualification or Polytechnic Diploma'),
(2, 'ITI Refrigeration and Air Conditioning in Refrigeration'),
(2, 'DIPLOMA in PROJECT TITLE'),
(2, 'Diploma in Information Technology in AMUDE'),
(2, 'Diploma in Computer Engineering in Computer Science'),
(2, 'MATRIX in SCIENCE'),
(2, 'Teaching'),
(2, 'Diploma in Computer in Computer'),
(2, 'Diploma in Computer in science Engineering'),
(2, 'SCC'),
(2, 'Percentage'),

(2, 'Diploma in COMPUTER ENGINEERING'),
 (2, 'Diploma in Education'),
 (2, 'Vocational Education'),
 (2, 'DIPLOMA in COMPUTER SCIENCE AND TECHNOLOGY'),
 (2, 'DIPLOMA in Computer Science'),
 (2, 'VOLUNTEER EXPERIENCE OR LEADERSHIP'),
 (2, 'Master certificate course in plc and scada and hmi in Automation'),
 (2, 'MCM'),
 (2, 'Engineering Diploma'),
 (2, 'Graduation in General and graphic application'),
 (2, 'A level from NIELIT'),
 (2, 'Secondary School certificate in Examination'),
 (2, 'Certificate in Academic Project'),
 (2, 'Year of Qualification'),
 (2, 'A Level in Computer Science'),
 (2, 'DECLARATION'),
 (2, 'Certificate in TECHNOLOGY'),
 (2, 'Religion'),
 (2, 'I sc'),
 (2, 'Masters Degree in Computer Science'),
 (2, 'PHP Technology'),
 (2, '2 in Arts'),
 (2, 'GNIIT'),
 (2, 'DIPLOMA in Computer Science Technology'),
 (2, 'Master of E G S Pillay'),
 (2, 'Diploma In Computer Engineering in Computer Engineering'),
 (2, 'Training course in PHP and Web Designing in php'),
 (2, 'Enterprises Resource Planning'),
 (2, 'computer science and engineering in Engineering'),
 (2, '2nd year Engineering in Computer Engineering'),
 (2, 'Web Design'),
 (2, 'Master of Masters in computer Application'),
 (2, 'Diploma in Computer Science Technology in Computer Science Technolog
 y'),
 (2, 'Polytechnic Diploma in Computer Science and Engineering'),
 (2, 'Master of Computer in Maths'),
 (2, 'diploma in IT'),
 (2, 'DIPLOMA in Computer Engineering'),
 (2, 'kerala in perinthalmanna software computer center'),
 (2, 'multiple browsers'),
 (2, 'Diploma in Information'),
 (2, 'Pree Degree'),
 (2, 'Diploma in Computer Science in Mannampandal'),
 (2, 'C H M'),
 (2, 'Education Details'),
 (2, 'Post Graduation Diploma In Advanced Computing in Applied Science'),
 (2, 'Diploma In Computer Engineering in Computer Enginerring'),
 (2, 'GED in Science'),
 (2, 'Artificial intelligence'),
 (2, 'Advanced Diploma in Artificial Intelligence Grade S 90'),
 (2, 'ORGANISATION'),
 (2, 'First Class Honours in Relevant'),
 (2, 'Secondary School Certificate in Nagpur Board'),
 (2, 'Master of Computer in Technology'),
 (2, 'Diploma in Engineering in Technology'),
 (2, 'drama'),
 (2, 'under graduate'),

```

(2, 'Master of Computer Science in Applied Artificial Intelligence'),
(2, 'Advanced diploma in Artificial intelligence'),
(2, 'Machine Learning and Artificial Intelligence'),
(2, 'M Phil in Computer Sc'),
(2, 'A Level in B'),
(2, 'Master of Information and Communication Technology'),
(2, 'Master of Artificial intelligence'),
(2, 'B Pharm'),
(2, 'Research'),
(2,
'Mphil in English Language and Literature in English Literature and Language'),
(2, 'M A in English Language Literature in English Language Literature'),
(2, 'Information Technology Engineering'),
(2, 'Master degree in science'),
(2, 'Post Graduation in Artificial Intelligence and Machine Learning'),
(2, 'Master of Science'),
(2, 'Certificate in Computing'),
(2, 'Science and Biotechnology'),
(2, 'Professional Diploma in Computer Application'),
(2, 'Masters in International Business'),
(2, 'Life'),
(2, 'Qualification'),
(2, 'Big Data'),
(2, 'Sales Force'),
(2, 'Xii Std'),
(2, 'cerfication in web developing'),
(2, 'University degree in Computer Science'),
(2, 'Higher Diploma in Software engineering'),
(2, 'Diploma in Android'),
(2, 'Diploma in Java'),
(2, 'Computer engineering'),
(2, 'Diploma in Information Technology Application in including'),
(2, 'Passed Secondary Education'),
(2, 'Advanced Diploma in including C'),
(2, 'Polytechnic'),
(2, 'Maths and Computer Science'),
(2, 'Secondary School Certificate in English Hindi'),
(2, 'Master of Big data and alalysis'),
(2, 'Diploma in advanced computing in advanced computing'),
(2, 'singing and dance'),
(2, 'Senior Secondary Certificate'),
(2, 'Diploma in computer programming in computer programming'),
(2, 'Computer science and engineering'),
(2, 'D m'),
(2, 'Diploma in computer engineering in computer engineering'),
(2, 'Certificate in Institution'),
(2, 'Software Engg'),
(2, 'architecture design'),
(2, 'Master Of Computer in Application'),
(2, 'General Science'),
(2, 'Post Graduation in Data Science Engineering'),
(2, 'AEC DEP or Skilled Trade Certificate in Applied Computer Science'),
(2, 'Engineering in Tech Automobile Engineering'),
(2, 'Computer Science and Technology'),
(2, 'Master of Data Science'),
(2, 'dance'),

```

```
(2, 'music'),
(2, 'Master of Advance Software Technology'),
(2, 'M C'),
(2, 'O level'),
(2, 'Graduate'),
(2, 'MA'),
(2, 'Diploma in Computer engineering'),
(2, 'Master of information technology'),
(2, 'Diploma in Computer Applications in Computer Application'),
(2, 'web designing'),
(2, 'Diploma in Web designing'),
(2, 'DIPLOMA in CHILAKALURIPETA'),
(2, 'Diploma in Technical'),
(2, 'Diploma in EnTC Engineering'),
(2, 'Diploma in Computer in Computer science'),
(2, 'classXII'),
(2, 'Diploma in computer science in score'),
(2, 'Certificate in A K T U'),
(2, 'Vocational'),
(2, '82 55 IT in Information Technology'),
(2, 'Secondary School in Computer Science'),
(2, 'Post Graduation in Advanced Computing'),
(2, 'Certification in Angular 8'),
(2, 'Diploma in Computer Science Stream in Computer Science'),
(2, 'Java Technology'),
(2, 'GNIIT in Cloud and Mobile Software Engineering'),
(2, 'Mater of computer application'),
(2, 'Master of Electronic and Communication Engineering'),
(2, 'C E T E'),
(2, 'M C M'),
(2, 'Diploma in computer in O Level'),
(2, 'Master Degree in Computer Applications'),
(2, 'Air Force Station'),
(2, 'B M'),
(2, 'music therapy'),
(2, 'Masters in Data Science in Data Science'),
(2, 'Master of Digital Marketing Strategy'),
(2, 'Master degree in Computer Science in Computer Science'),
(2, 'Certificate In Computing'),
(2, 'Master In Computer Application in 3 years post'),
(2, 'ECE in stream'),
(2, 'Dr T in Computer Science and Engineering'),
(2, 'Ph D in Electrical in city UK using Spark'),
(2, 'Master degree in Information Technology in Information Technology'),
(2, 'Diploma in Advance Computing'),
(2, 'CITA'),
(2, 'Masters In Big Data Engineering in Big Data Engineering'),
(2, 'Diploma in Computer Hardware and Maintenance'),
(2, 'ATCA Middleware Architecture'),
(2, 'diploma in English Hindi'),
(2, 'Business Understanding'),
(2, 'H sc'),
(2, 'Diploma in AUTOMOBILE ENGINEERING'),
(2, 'Certified'),
(2, '10'),
(2, 'Diploma in Computer in Dist Parbhani'),
(2, 'Secured'),
```

```

(2, 'Diploma in computer Engineering'),
(2, 'Nadimpalli satyanarayanaraju group of institutions'),
(2, 'Diploma in CE'),
(2, 'Masters in Board of Inter'),
(2, 'M C S'),
(2,
'DIPLOMA in Electronic And Communication Engineering in Communication Engin
eering'),
(2, 'Diploma in Computer Science examination'),
(2, 'O Level'),
(2, 'Gratuation'),
(2, 'Associate Degree in Computer Science'),
(2, 'Project II'),
(2, 'Business Administration'),
(2, 'World Education Services'),
(2, 'Information technology'),
(2, 'Diploma in computer Technology'),
(2, 'Master of COMPUTER SCIENCE'),
(2, 'AAR BMR Degree in Computers'),
(2, 'Dac Diploma in advanced computing in advanced computing'),
(2, 'Graduation in Comp Sci'),
(2, 'Diploma Certificate'),
(2, 'Higher Education'),
(2, 'Computer Science Technology'),
(2, 'Masters in Technology in Machine Design'),
(2, 'Communication Network'),
(2, 'coding competition conducted'),
(2, 'English Hindi'),
(2, 'Technology and Sciences'),
(2, 'Diploma in Dr D Y Patil'),
(2, 'Diploma in Comp Engg'),
(2,
'Master of Information Science and Security in Information Science and Secu
rity'),
(2, 'Masters Degree in Electrical Engineering in Electrical Engineering'),
(2, 'Oltron Technology'),
(2, 'Andhra University'),
(2, 'Diploma in Android php and server security'),
(2, 'Comp Science'),
(2, '10 th'),
(2, 'Chartered Accountancy'),
(2, 'M com'),
(1, 'Master In Computer Application'),
(1, 'Diploma in Govt'),
(1, 'certificate in Computer Science'),
(1, 'DIPLOMA in COMPUTER'),
(1, 'SMART DUSTBIN USING VOICE CONTROL'),
(1, 'Diploma In computer engineering 73 00 in computer engineering'),
(1, 'PU and degree'),
(1, 'P D'),
(1, 'Certificate in E TC'),
(1, 'Diploma in Electronic Engineering'),
(1, 'M M in Technology'),
(1, 'Event called'),
(1, 'Master Degree in Computer Application'),
(1, 'Post Graduation diploma in Orlando Academy'),
(1, 'Year of Passing'),

```

```

(1, 'Leaving Certificate in HSLC'),
(1, 'No'),
(1, 'Master of Applications'),
(1, 'Diploma in Quickyes'),
(1, 'X STD in K M M'),
(1, 'voice'),
(1, 'Govt Polytecnic Vijayawada in Technical Education'),
(1, 'Diploma in Comp'),
(1, 'Assistant Professor'),
(1, 'Diploma in Software Engineering'),
(1, 'diploma in GNIIT in software engineering'),
(1, 'Master of Master in Computer Application'),
(1, 'Diploma in Software Engineering in Brainware'),
(1, 'M C S in Vidya'),
(1, 'AEC DEP or Skilled Trade Certificate'),
(1, 'Engineering in Electronic Engineering'),
(1, 'Diploma in Electronis'),
(1, 'M Com in Passing'),
(1, 'Certification in Python Programming'),
(1, 'Leaving Certificate in Shree Adi Chunchanagiri Sarvodaya'),
(1,
'Master Degree in Computer Science and Engineering Artificial Intelligenc
e'),
(1, 'Indian Oil Corporation Limited'),
(1, 'certificate in Artificial Intelligence'),
(1, 'Masters in Computer'),
(1, 'Master of Signal Processing'),
(1, 'Diploma in Computer Eng in Computer Eng'),
(1, 'MPhil C S'),
(1, 'Intelligence and Soft Computing'),
(1, 'Artificial Intelligence to Detect Breast Cancer'),
(1, 'history'),
(1, 'Bluetooth Low Energy'),
(1, 'MASTER in ARTS'),
(1, 'Secondary School Certificate in English German Hindi Marathi'),
(1, 'Certification in Course'),
(1, 'M P C stream'),
(1, 'Master of ENGLISH LITERATURE'),
(1, 'Master of automobile'),
(1, 'Secondary Education in School Curriculum'),
(1, 'Engineering and Technology'),
(1, 'maths'),
(1, 'Leadership Strategy'),
(1, 'B Pharma'),
(1, 'Diploma of Higher Education in Science'),
(1, 'Matriculation in Matriculation Education'),
(1, 'Master of Arts in Public Administration'),
(1, 'Doctor of Philosophy in Philosophy'),
(1, 'Master of Labour Studies in Labour Studies'),
(1, 'EFFECTIVE ENGLISH COMMUNICATION'),
(1, 'Sciences'),
(1, 'MASTER S DEGREE in Artificial Intelligence'),
(1, 'P G D C S A in Computer Science'),
(1, 'Master of Ceremony'),
(1, 'National level technical symposium held'),
(1, 'General Proficiency'),
(1, 'Diploma in Computer Applications in Computer Applications'),

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(1, 'doctor in research'),
(1, 'Data Science Certification in Data Science and Artificial Intelligence'),
(1, 'master'),
(1, 'D COMMUNICATION'),
(1, 'CA Final Pursuing in Accounts Taxation Audit Finance'),
(1, 'IDF UX Research Diploma in computer science and engineering'),
(1, 'Master of Information in Technology'),
(1, 'Masters in Software Engineering in Software Engineering'),
(1, 'Diploma in Computer Programming'),
(1, 'Senior Secondary Certificate Examination'),
(1, 'Data Science Bootcamp in Machine Learning'),
(1, 'Automobile'),
(1, 'Master of Chemical Engineering in Chemical Engineering'),
(1, 'Masters in Machine Learning and Artificial Intelligence'),
(1, 'D I T'),
(1, 'B C'),
(1, 'ADVANCED DIPLOMA in COMPUTER APPLICATIONS AND PROGRAMMING'),
(1, 'MASTERS in SCIENCES'),
(1, 'Certification in Professional'),
(1, 'Master of Information Technology in Information Technology'),
(1, 'Master of Comp Science'),
(1,
'Master of Marketing Artificial Intelligence and Machine Learning Algorithm'),
(1, 'Ph D Pursuing in Computer Science and Engineering'),
(1, 'Year of passing'),
(1, 'XII in PCM'),
(1, 'Nuances of Impactful Research'),
(1,
'Information Technology and Higher Education Possibilities and Challenges'),
(1, 'Century Teaching'),
(1, 'Doctorate in Humanities in Humanities'),
(1, 'TESOL'),
(1, 'Master of computer engineering in Computer Engineering'),
(1, 'Diploma in Advance Computer Arts'),
(1, 'Diploma in Art Teacher Diploma ATD'),
(1, 'O LEVEL in Education'),
(1, 'A LEVEL in Education'),
(1, 'Certificate in appreciation'),
(1, 'Master of Education'),
(1, 'technology and science'),
(1, 'DIPLOMA in COMPUTER HARDWARE'),
(1, 'Certificate in I T'),
(1, 'Certificate in KEY ACADEMIC PROJECTS'),
(1, 'Advanced Diploma in Artificial Intelligence'),
(1, 'Master of Computer Science in Computer Science and Engineering'),
(1, 'masters in computer science'),
(1, 'Master of Computer Science Specialization with Machine Learning'),
(1, 'DAC in Artificial Intelligence'),
(1, 'Computer engineering in Computer engineering'),
(1, 'TCE'),
(1, 'tourism'),
(1, 'playstore it has above 5k'),
(1,
'Master of Information Technology in leadership in Information Technology

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y'),
(1,
'Diploma of Information Technology in Software Engineering in Information T
echnology'),
(1, 'maths in computer science'),
(1,
'Master of Computer Software Engineering in Foundations of Software Enginee
ring'),
(1, 'Advanced Diploma in Computer Application'),
(1, 'Diploma in Software in Engineering'),
(1, 'DIPLOMA in Polytechnic'),
(1, 'Master Degree in Computer Applications in Dot Net'),
(1, '2 in science'),
(1, 'Diploma in INFORMATION TECHONOLOGY'),
(1, 'Diploma in E TC in E TC'),
(1, 'Diploma in technology'),
(1, 'Diploma in Diploma in Computer science and technology'),
(1, 'H S S'),
(1, 'Mpc'),
(1, 'Diploma in Industrial'),
(1, 'Diploma Incomplete in PHP MySQL ASP NET C C Java'),
(1, 'Class'),
(1, 'English and Computer Science'),
(1, 'INDUSTRIAL VISITS'),
(1, 'Master of C ANDROID JAVA'),
(1, 'Diploma in Computer Science and Engineering in Computer Science'),
(1, 'Diplom in ECE'),
(1, 'DIPLOMA in Electronic Eng'),
(1, 'H Sc in Computer Science'),
(1, '12 in COMPUTER SCIENCE'),
(1, 'CLASS 12'),
(1, 'CLASS 10'),
(1, 'Dct in Computer science'),
(1, 'Communication Engg and Signal Processing'),
(1, 'school certificate in education'),
(1, 'Master of Computer science and engineering'),
(1, 'Leaving Certificate in Education'),
(1, 'Diploma in Electronic Communication'),
(1, 'Diploma in Electronic Telecommunicaton in Electronic Telecommunicato
n'),
(1, 'Developing mobile apps for Android platform'),
(1, 'MASTER DEGREE in Master of Computer'),
(1, 'Karnataka State Education Examination Board'),
(1, 'Engineerin Diploma in Computer Science and Engineering'),
(1, 'Certificate in technology'),
(1, 'D P S'),
(1, 'Certification course in Data Science'),
(1, 'LITES Nagercoil'),
(1, 'Diploma in C and'),
(1, 'AS Levels in response to the checklist questions'),
(1, 'Diploma in IIIT B'),
(1, 'Postgraduate Diploma in VLSI designs'),
(1, 'White box and Black box testing'),
(1, 'schooling'),
(1, 'Chemistry'),
(1, 'Diploma in Computer Engineering in Smt'),
(1, 'Certification in Data Science Engineering'),

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(1,
'Master Degree in Computing Information System in Computing Information Sys
tem'),
(1, 'Master of Computer Science in Karnataka'),
(1, 'Diploma in Production'),
(1, 'Academic Internship in Deep Learning'),
(1, 'Master of Mobile Computing Technology'),
(1, 'Master of Computer s Application in Computer s Application'),
(1, 'Diploma in IT Drop out'),
(1, 'Senior Secondary Certificate Examination in All India'),
(1, 'Data Science and Machine Learning'),
(1, 'Research Work'),
(1, 'RGPV'),
(1, 'Diploma in Wadwadi'),
(1, 'Kerala'),
(1, 'DIV'),
(1, 'Dr S in Pottery'),
(1, 'Intellectual Property rights'),
(1, 'image'),
(1, 'Secured an All India Engineering Entrance Examination'),
(1, 'Marketing'),
(1, 'Pre University College in Comouter Science'),
(1, 'Higher Primary School'),
(1, 'Certified on 2018 in Microsoft Certified Technology Specialist'),
(1, 'Masters Certification'),
(1, 'Diploma in Net Web Design'),
(1, 'MASTER'),
(1, 'central London Choose'),
(1, 'Non Degree Certificate Program in UX UI Design in UX UI Design'),
(1, 'Engineer s in Computer Science'),
(1, 'Education Computer Science'),
(1, 'A level'),
(1, 'Marketing Research'),
(1, 'certificate in Done Information Technology Training'),
(1, 'Masters In Software Engineering in Software Engineering'),
(1, 'diploma in Web Design'),
(1, 'Dac'),
(1, 'High secondary'),
(1, 'Master of computer related'),
(1, 'diploma in WEB DESIGN in DESIGN'),
(1, 'D E I'),
(1, 'Diploma in Arena animation'),
(1, 'AEC DEP or Skilled Trade Certificate in Web Designing'),
(1, '12 in HS'),
(1, 'VKSU'),
(1, 'Polytechnical diploma in IT in IT'),
(1, 'M A'),
(1, 'BMM'),
(1, 'Skp govt degree college'),
(1, 'Master of Marketing'),
(1, 'diploma in Computer Hardware in Hardware Networking'),
(1, 'Master of Computer Science Master Of Software Engineer'),
(1, 'Certification in Web Designing'),
(1, 'Science Engineering'),
(1, 'SV degree in education'),
(1, 'Masters in S K Somaiya'),
(1, '63 50'),

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(1, 'Internship'),
(1, 'P G'),
(1, 'P G D C A'),
(1, 'M A in Part 2'),
(1, 'Master of Tool'),
(1, 'Art teacher Diploma in Web Designing Course'),
(1, 'Diploma in Engineering in Computer'),
(1, 'BT ECH in INFORMATION TECHNOLOGY'),
(1, 'Leadership Quality'),
(1, 'Data'),
(1,
'Master of Computer Science and Engineering in Computer Science and Enginee
ring'),
(1, 'English Advanced Training'),
(1, 'Engineering And Technology'),
(1, 'Vocational in Engineering'),
(1, 'Diploma Engineering in information Technology'),
(1, 'KSSEB'),
(1, 'Diploma in Education in TTC'),
(1, 'Certificate of participation'),
(1, 'B tec'),
(1, 'Android Workshop organized by Xtrude'),
(1, 'School College'),
(1, 'ISc'),
(1, 'CHSE in 2'),
(1, 'school'),
(1, 'degree in design'),
(1, 'H S'),
(1, 'M D'),
(1, 'Master of Computer Science Data Science'),
(1, 'IT Software Engineering'),
(1, 'Annual Secondary Board Examination'),
(1, 'Technical Education'),
(1, 'Statistical Machine Translation'),
(1, 'M Des'),
(1, 'DIPLOMA in Artificial Intelligence'),
(1, 'Bio Maths'),
(1, 'Master of Software Engineering'),
(1, 'Diploma in Electronic and telecommunications'),
(1, 'Social Science English'),
(1, 'Neuropathology'),
(1, 'Web Designing'),
(1, 'Diploma in civil engineering in civil engineering'),
(1, 'Diploma in Information Technology in HPBOSE'),
(1, 'non functionality node'),
(1, 'Diploma of Higher Education in Computer science'),
(1, 'Dip E TC'),
(1, 'PROJECT DETAILS'),
(1, 'Professional Master of Software Engineering and Quality'),
(1, 'Aggregate'),
(1, 'Master of COMPUTER SCIENCE AND TECHNOLOGY'),
(1, 'Masters in computer science in Computer science'),
(1, 'Diploma in Computer engineer'),
(1, 'Certificate in Japanese Language'),
(1, 'M ca'),
(1, 'DIPLOMA in Education'),
(1, 'Education Board'),

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(1, 'Functional English'),
(1, 'Master of Master in computer application'),
(1, 'Diploma In Advanced Computing in Advanced Computing'),
(1, 'Diploma in COMPUTER ENGINEERRING'),
(1, 'Certificate in Java and Advanced Java'),
(1, 'Personnel Details'),
(1, 'Master of Artificial Intelligence in Machine Learning'),
(1, 'Certificate in Computers'),
(1, 'Masters in Business Administration in Business Administration'),
(1, 'CIC in Computing'),
(1, 'Advanced Diploma in Industrial Safety'),
(1, 'Diploma in Data Science'),
(1, 'Industrial Training'),
(1, 'Senior Secondary Certificate in Industrial Training'),
(1, 'Programming Certification'),
(1, 'MASTER S'),
(1, 'Design'),
(1, 'English Hindi and Marathi'),
(1, 'Certificate in Year of passing'),
(1, 'Doctorate in Machine learning'),
(1, 'Masters in Engineering'),
(1, 'BD'),
(1, 'DIPLOMA in ELECTRICAL'),
(1, 'Master of MASTER IN COMPUTER APPLICATIONS'),
(1, 'Diploma in I T in Positive Thinking'),
(1, 'webdesinging I can handle both frontend'),
(1, 'MPC with 91'),
(1, 'Education with 89'),
(1, 'Diploma in E T C E'),
(1, 'Diploma in Electronic engineering'),
(1, 'Master of Computer in Computer science'),
(1, 'Diploma in E C E'),
(1, 'Electronic and Communication'),
(1, 'Secondary in PCM'),
(1, 'DIPLOMA in Computer science'),
(1, 'School in Science'),
(1, 'Diploma in Web Designing'),
(1, 'technology and Sql'),
(1, 'Master Degree in Computer science and engineering'),
(1, 'Secondary School in Biology'),
(1, 'Secondary School'),
(1, 'Diploma in library'),
(1, 'Diploma in electronic and telecommunication engineering'),
(1, 'DIPLOMA IN COMPUTER ENGINEERING in COMPUTER ENGINEERING'),
(1, 'DAC in Advance Computing'),
(1, 'HSS in Science'),
(1, 'Hindi English Sanskrit'),
(1, 'Software Engineering NIIT'),
(1, 'GNIIT in Software Engineering'),
(1, 'Computer Programming'),
(1, 'undergraduate'),
(1, 'Computer Science and EngineeringJune'),
(1, 'PUC'),
(1, '10 2'),
(1, 'Undergraduate in Computer Science and Engineering'),
(1, 'P G D C A in Education'),
(1, 'Earned the Certificate of Building'),

```
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(1, 'GENERAL'),
(1, 'DIPLOMA in Technical Education'),
(1, 'MASTER in COMPUTER APPLICATION'),
(1, 'DIPLOMA IN COMPUTER SCIENCE in COMPUTER SCIENCE'),
(1, 'P G D I T Diploma in IT'),
(1, 'Master of Machine design'),
(1, 'Computer Engg in Engineering'),
(1, 'Python Course in Computer Science'),
(1, 'Education A'),
(1, 'Master of computer in engineering'),
(1, 'BFA in XII'),
(1, 'paper presentation'),
(1, 'DIPLOMA in COMPUTER ENGG'),
(1, 'masters of computer applications'),
(1, 'SCIENCE TECHNOLOGY'),
(1, 'Diploma in engineering in engineering'),
(1, 'Diploma in Information Science and Technology'),
(1, 'bcca in Business'),
(1, 'certificate in Final Year Project'),
(1, 'Diploma in Final Year'),
(1, 'Diploma in Network Security'),
(1, 'Post graduate'),
(1, 'DIPLOMA in COMPUTER APPLICATIONS'),
(1, 'Computing'),
(1, 'core java'),
(1, 'Masters in Computer Application in Expertise'),
(1, 'computer Science'),
(1, 'None in Python language'),
(1, 'ACADEMIC PROJECT'),
(1, 'Diploma of Computer Science Engg in Computer Science Engg'),
(1, 'Nityo'),
(1, 'INTERMIDATE EDUCATION'),
(1, 'Diploma in ITES M'),
(1, 'Diploma in Guru Gobind Singh'),
(1, 'Diploma in Engineering in Technical Education Panchkula'),
(1, 'research'),
(1, 'Machine Learning'),
(1, 'diploma in Software Engineering'),
(1, 'BPED in Physical Education Teacher'),
(1, 'Master of Philosophy in Philosophy'),
(1, 'EDUCATION A P'),
(1, 'Diploma in Computer Hardware Maintenance in Govt'),
(1, 'Certificate Of Secondary Education in Indian'),
(1, 'Diploma in EEE'),
(1, 'Masters in Soft Computing'),
(1, 'Computer Science Of Engineering Branch'),
(1, 'Vikas Jr'),
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(1, 'HSE'),
(1, 'Diploma in packaging technology'),
(1, 'Master of NOU'),
(1, 'Diploma of Engineering in I T'),
```

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(1, 'Diploma in Computer Science Engg'),
(1, 'group of M'),
(1, 'A levels in General'),
(1, 'mining'),
(1, 'ML in Research Engineer'),
(1, 'ML in ENGINEERING'),
(1, 'English Typewriting'),
(1, 'Certificate in International Initiative for Impact Evaluation'),
(1, 'regression and evaluation'),
(1, 'Ph D in Computer Science'),
(1, 'Master degree in Data Science in Data Science'),
(1, 'annual Tech Fest INNOTECH'),
(1, 'Master of Computer Science Pattern recognition Neural network'),
(1, 'Post Graduation Diploma in Advance Computing in Advance Computing'),
(1, 'Diploma Computer Engineering'),
(1, 'Master of Computer in Application'),
(1, 'Degree And Diploma in Education'),
(1, 'A B'),
(1, 'JEE Main'),
(1, 'Diploma in Computer in Computer Technology'),
(1, 'Vocational in Technical Stream'),
(1, 'computer engineering in Computer Eng'),
(1, 'Certificate in engineering'),
(1, 'Architecture'),
(1, 'MITCON Entrepreneurship Awareness Camp'),
(1, 'Diploma in COMPUTER'),
(1, 'Diploma in UI UX designer and Developer'),
(1, 'Diploma In Info Tech in Information Technology'),
(1, 'Diploma in Software Engineering in GNIIT'),
(1, 'Secondary School Certificate in Percentage'),
(1, 'Masters Of Science'),
(1, 'Master of computer'),
(1, 'SCAD'),
(1, 'Computer engineer in Percentage'),
(1, 'diploma in Education on Programming'),
(1, 'Certificate in General'),
(1, 'Senior Secondary Certificate in Computer Programming'),
(1, 'Certification in C'),
(1, 'Master of Computers Applications in Computers'),
(1, 'Degree'),
(1, 'Eighth International Conference on Advanced Computing'),
(1, 'Master of computerapplications'),
(1, 'Boar of Education'),
(1, 'Education Examination'),
(1, 'Master of Computer Computer Science in Business'),
(1, 'Diploma in Core in Core'),
(1, 'DIPLOMA in Jully'),
(1, 'Master of MIS in MIS'),
(1, 'XII Std'),
(1, 'certificate in engineering'),
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(1, 'Master degree'),

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(1, 'Diploma in computer Application'),
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(1, 'BGS'),
(1, 'Communication Navigation Surveillance'),
(1, 'Masters in Electrical Engineering in Electrical Engineering'),
(1, 'Certificate in Education'),
(1, 'Vocational in core java programming using MySQL'),
(1, 'Engineering in Computer Science and Engineering'),
(1, 'Online Certification in Wireless communication'),
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(1, 'Associates'),
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(1, 'Certificate in DGPA'),
(1,
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iences'),
(1, 'Music'),
(1, 'PU Board Education'),
(1, 'Master of Administration'),
(1, 'Computer Science Group'),
(1, 'Master of Computer Sciences in Computer Sciences'),
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(1, 'German Language'),
(1, 'HINDI ENGLISH'),
(1, 'Certification in Sales'),
(1, 'Diploma in Information Technology in Gov'),
(1, 'library for REST API'),
(1, 'diploma in E tc'),
(1, 'Certification in Blockchain Essentials by IBM'),
(1, 'A S in design'),
(1, 'Certification in Core Java Technology'),
(1, 'MA in Visual Communication in Visual Communication'),
(1, 'TEACHING FACULTY'),
(1, 'Diploma in Computer Engineering in Engineering'),
(1, 'Diploma in computer application'),
(1, 'Master of Journalism in Journalism'),
(1, 'Master of Communication and Journalism in Mass Communication'),
(1, 'Schooling'),
(1, 'Accounting and Taxation'),
(1, 'Computer Applications'),
(1, 'Pharmacy Technology'),
(1, 'CIC in Information Technology'),
(1, 'HNC in Information Technology'),
(1, 'CA Inter in Accountancy'),
(1, 'Master of I T'),
(1, 'ICWA in Final Stage III cleared'),
(1, 'Diploma in Tool and Die Making'),
(1, 'Diploma in Advance'),
(1, 'Diploma in Finance and Accounts in Finance and Accounts'),
(1, 'Finance'),
(1, 'M COM in Business Studies'),
(1, 'CA Final Appeared in ICAI'),
(1, 'D C E in Govt'),

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```
(1, 'Masters in Finance in Finance'),
(1, 'Trainer ISO 50002 2014 Energy Audit in Energy Audit'),
(1, 'NEBOSH IGC in Occupational Safety Health'),
(1, 'LEED AP in Green Building Certification'),
(1, 'Certified Energy Auditor in Energy Audit'),
(1, 'Diploma in Computing in Computing'),
(1, 'C A Inter in Accounts Audit and Taxation'),
...]
```

```
In [111]: # Capturing the skillsets
all_skillsets = []
map_skillset_experiences = {}
# Mapping Order = ['Less than 1 years', '1 year', '2 years', '3 ']
for skills in resumeDf['Skills']:
    if str(type(skills)) == "<class 'float'>":
        continue
    try:
        for skill in eval(skills):
            skillset = ''
            if skill.find('(') != -1:
                skillset = skill[:skill.find('(')].strip().upper()
                start_idx, end_idx = skill.find('('), skill.find(')')
                exp = skill[start_idx+1:end_idx].replace("\n", "")
                if 'year' in exp.lower():
                    s_idx = exp.find('year')
                    numeric_year = exp[s_idx:].strip()
                    if map_skillset_experiences.get(skillset) is None:
                        map_skillset_experiences[skillset] = {numeric_year: 1}
                        #map_skillset_experiences[skillset][numeric_year] = 1
                    elif map_skillset_experiences.get(skillset).get(numeric_year) is None:
                        map_skillset_experiences[skillset].update({numeric_year: 1})
                    #map_skillset_experiences[skillset][numeric_year] = 1
                else:
                    #print ("I came tp 3")
                    map_skillset_experiences[skillset][numeric_year] = map_skillset_experiences.get(skillset).get(numeric_year) + 1
            else:
                skillset = skill.strip().upper()
                all_skillsets.append(skillset)
    except:
        #print (ex)
        continue

fav_skillsets = dict(Counter(all_skillsets))
fav_skillsets_tup = [(fav_skillsets.get(key), key) for key in fav_skillsets.keys()]
fav_skillsets_tup.sort(key=lambda item: item[0], reverse=True)
```

```
In [112]: # Printing the most observed skillsets  
fav_skillsets_tup
```



```
Out[112]: [(4195, 'HTML'),
(4127, 'JAVASCRIPT'),
(3386, 'CSS'),
(3063, 'PYTHON'),
(2717, 'JAVA'),
(2647, 'PHP'),
(2092, 'C++'),
(2021, 'BOOTSTRAP'),
(2014, 'MYSQL'),
(1873, 'NONE'),
(1700, 'JQUERY'),
(1604, 'SQL'),
(1186, 'HTML5'),
(1064, 'DJANGO'),
(1062, 'C'),
(985, 'MACHINE LEARNING'),
(978, 'GIT'),
(924, 'DATABASE'),
(802, 'AJAX'),
(704, 'LINUX'),
(674, 'MONGODB'),
(600, 'CODEIGNITER'),
(600, 'ANDROID'),
(576, 'NODEJS'),
(570, 'C#'),
(552, 'WORDPRESS'),
(529, 'CORE JAVA'),
(512, 'DEEP LEARNING'),
(500, 'SPRING'),
(485, 'HIBERNATE'),
(481, 'ECLIPSE'),
(468, 'ORACLE'),
(453, 'ANGULARJS'),
(452, 'LARAVEL'),
(427, 'JSON'),
(393, 'JSP'),
(381, 'XML'),
(379, 'KERAS'),
(372, 'VISUAL STUDIO'),
(365, ''),
(354, 'SQL SERVER'),
(352, 'TENSORFLOW'),
(349, 'CSS3'),
(335, 'ANGULAR'),
(328, 'J2EE'),
(324, 'DATA SCIENCE'),
(309, 'REACTJS'),
(299, '.NET'),
(298, 'EXCEL'),
(298, 'API'),
(297, 'ASP.NET'),
(296, 'NUMPY'),
(288, 'AWS'),
(286, 'PANDAS'),
(266, 'FLASK'),
(264, 'ARTIFICIAL INTELLIGENCE'),
(250, 'DOCKER'),
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(244, 'MATPLOTLIB'),
(235, 'SERVLET'),
(220, 'UNIX'),
(218, 'MS OFFICE'),
(200, 'NLP'),
(198, 'MICROSOFT OFFICE'),
(196, 'ANDROID STUDIO'),
(193, 'PHOTOSHOP'),
(191, 'DATA ANALYSIS'),
(185, 'TYPESCRIPT'),
(185, 'POSTGRESQL'),
(184, 'HADOOP'),
(182, 'FIREBASE'),
(180, 'HTML 5'),
(177, 'MVC'),
(162, 'SPRING BOOT'),
(161, 'NATURAL LANGUAGE PROCESSING'),
(160, 'NODE.JS'),
(159, 'WEB DEVELOPMENT'),
(159, 'DATABASES'),
(158, 'COMPUTER VISION'),
(155, 'OPENCV'),
(154, 'DATA STRUCTURE'),
(154, 'JDBC'),
(153, 'PL/SQL'),
(139, 'SQLITE'),
(138, 'TABLEAU'),
(136, 'JIRA'),
(132, 'JENKINS'),
(130, 'HDFS'),
(125, 'WINDOWS'),
(122, 'ASP'),
(119, 'SQOOP'),
(118, 'CLUSTERING'),
(117, 'R'),
(115, 'NODE JS'),
(114, 'SOFTWARE DEVELOPMENT'),
(113, 'HIVE'),
(113, 'REST API'),
(113, 'DATA MINING'),
(112, 'REACT'),
(111, 'SCRIPTING'),
(110, 'CORE PHP'),
(108, 'TALLY'),
(108, 'DATA VISUALIZATION'),
(105, 'DBMS'),
(103, 'CODING'),
(102, 'ALGORITHM'),
(100, 'SWIFT'),
(96, 'SVN'),
(95, 'JAVA SCRIPT'),
(92, 'WORD'),
(91, 'APPLICATION DEVELOPMENT'),
(91, 'REACT JS'),
(90, 'MATLAB'),
(89, 'GITHUB'),
(88, 'WEB SERVICES'),
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(88, 'EXPRESSJS'),
(84, 'SHELL SCRIPTING'),
(84, 'EMBEDDED C'),
(82, 'REDUX'),
(81, 'PROJECT MANAGEMENT'),
(81, 'SCIKIT-LEARN'),
(79, 'ETL'),
(78, 'INFORMATICA'),
(77, 'REACT NATIVE'),
(76, 'APACHE'),
(76, 'IONIC'),
(73, 'ADOBE PHOTOSHOP'),
(73, 'FRONT END'),
(73, 'CMS'),
(72, 'ALGORITHMS'),
(71, 'MS SQL SERVER'),
(71, 'SERVLETS'),
(70, 'DB2'),
(69, 'SELENIUM'),
(67, 'C/C++'),
(67, 'SASS'),
(66, 'BACK END'),
(66, 'UI'),
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(8, 'SELF-CONFIDENCE'),
(8, 'PLATFORMS'),
(8, 'QUALITY MANAGEMENT'),
(8, 'SCHEDULING'),
(8, 'DIALOGFLOW'),
(8, 'RECONCILIATION'),
(8, 'SYSTEM PROGRAMMING'),
(8, 'ANACONDA NAVIGATOR'),
(8, 'LISTENING TO MUSIC'),
(8, 'BUSINESS ANALYTICS'),
(8, 'PYTHON 3'),

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(8, 'STATISTICAL MODELLING'),
(8, '2012'),
(8, 'ARIBA'),
(8, 'XAMARIN'),
(8, 'CI/CD'),
(8, 'ZOOKEEPER'),
(8, 'APACHE AIRFLOW'),
(8, 'IOS DEVELOPMENT'),
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(8, 'THEANO'),
(8, 'CICD'),
(8, 'ENGINEER'),
(8, 'BOOSTRAP'),
(8, 'CENTOS'),
(8, 'DATABASE: MONGO DB'),
(8, 'MS-EXCEL'),
(8, 'IDE: ECLIPSE'),
(8, 'WEB SCRIPTING: HTML'),
(8, "IDE'S: PYCHARM"),
(8, 'PGADMIN'),
(8, 'ORGANIZED'),
(8, 'GOOGLE ADWORDS'),
(8, 'SOCIAL MEDIA MARKETING'),
(8, 'JCL'),
(8, 'FOUNDATION'),
(8, 'HTLM'),
(8, 'SQL SERVER MANAGEMENT STUDIO'),
(8, 'WEB TECHNOLOGY: HTML'),
(8, 'CAKE PHP'),
(8, 'WIRESHARK'),
(8, 'AWS RDS'),
(8, 'SCIKITLEARN'),
(8, 'GIS'),
(8, 'BAGGING AND BOOSTING'),
(8,
  'CREATED TEXT CLASSIFICATION MODELS USING TF-IDF AND ENSEMBLE ALGORITHMS'),
(8, 'SPRING REST'),
(8, 'PLUS'),
(8, 'IDMS'),
(8, 'SALESFORCE.COM'),
(8, 'PYTHON3'),
(8, 'WATERFALL'),
(8, 'UNIX SHELL'),
(8, 'IDLE'),
(8, 'SFTP'),
(8, 'OBIEE'),
(8, 'L'),
(8, 'FINANCIAL ACCOUNTING'),
(8, 'ACCOUNTS'),
(7, 'LEADERSHIP QUALITY'),
(7, 'JSP'),
(7, 'CREO'),
(7, 'BUILD TOOLS: MAVEN'),
(7, 'RESTFUL API'),
(7, 'ROLE: DEVELOPER.'),
(7, 'FIGMA'),
(7, 'ADAPTABILITY'),
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(7, 'SERVERS'),
(7, 'STRUTS2'),
(7, 'SCRIPTING LANGUAGES'),
(7, 'UNIX SHELL SCRIPT'),
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(7, 'CLOUD FRONT'),
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(7, 'VISTA'),
(7, 'PINTEREST'),
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(7, 'CODIGNITER'),
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(7, 'CHATBOT DEVELOPER'),
(7, 'GROUPS'),
(7, 'OCTAVE'),
(7, 'TWILIO'),
(7, 'VISUAL C++'),
(7, 'EBS'),
(7, 'NODE-RED'),
(7, 'ARDUINO IDE'),
(7, 'TEACHING'),
(7, 'NEXT.JS'),
(7, 'RELATIONSHIP MANAGEMENT'),
(7, 'MACHINE LEARNING LIBRARIES'),
(7, 'MAP REDUCE'),
(7, 'CLASSIFICATION AND REGRESSION'),
(7, 'DATA INTEGRATION'),
(7, 'PROGRAMMING: PYTHON'),
(7, 'DATA PROCESSING'),
(7, 'ENTERPRISE ARCHITECTURE'),
(7, 'FULL STACK'),
(7, 'UI PATH'),
(7, 'EDI'),
(7, 'SCIKIT'),
(7, 'DATA SOURCES'),
(7, 'RATIONAL ROSE'),
(7, 'FEATURE ENGINEERING'),
(7, 'ADVANCED EXCEL'),
(7, 'SQLITE.'),
(7, 'OPENCV.'),
(7, 'FORTRAN'),
(7, 'REST APIS'),
(7, 'CRYSTAL REPORTS'),
(7, 'NO-SQL'),
(7, 'SOA'),
(7, 'SAX'),

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(7, 'PUPPET'),  
(7, 'CUSTOMER RELATIONSHIP MANAGEMENT'),  
(7, 'UI DEVELOPER'),  
(7, 'SUPPORT VECTOR MACHINE'),  
(7, 'SOFTWARE ENGINEER'),  
(7, 'PIC'),  
(7, 'DOT'),  
(7, 'SERVERS: DJANGO'),  
(7, 'OPERATING SYSTEMS: WINDOWS & LINUX'),  
(7, 'RETAIL'),  
(7, 'PYTEST'),  
(7, 'WINDOWS SERVER 2012'),  
(7, 'AWS S3'),  
(7, 'OS: WINDOWS'),  
(7, 'FULL STACK DEVELOPMENT'),  
(7, 'OPTIMISTIC'),  
(7, 'TECHNICAL PROFILE:'),  
(7, 'KALDI'),  
(7, 'PREDICTIVE MODELLING'),  
(7, 'NMAP'),  
(7, 'METASPLOIT'),  
(7, 'WEB SCRAPPING'),  
(7, 'BERT'),  
(7, '2008'),  
(7, 'HYDERABAD'),  
(7, 'TENSORFLOW.'),  
(7, 'GCM'),  
(7, 'INFORMATICA POWER CENTER'),  
(7, 'OPERATIONS MANAGEMENT'),  
(7, 'PANDAS.'),  
(7, 'FRONT-END DEVELOPMENT'),  
(7, 'MATERIALIZE CSS'),  
...]
```

```
In [119]: # Printing the experience level across top-200 most observed skillsets  
print ("Skillset", "\t", "Experiences")  
for _, skill in fav_skillsets_tup[:200]:  
    print (skill, '\t', map_skillset_experiences.get(skill))
```

Skillset	Experiences
HTML	{'Less than 1': 555, '1': 127, '3': 38, '4': 34, '2': 117, '7': 7, '10+': 6, '9': 4, '5': 10, '6': 5, '8': 3, '8+': 1}
JAVASCRIPT	{'Less than 1': 262, '2': 188, '3': 82, '1': 210, '4': 28, '5': 15, '9': 3, '10+': 11, '6': 7, '8': 14, '7': 4, '8+': 1}
CSS	{'Less than 1': 623, '2': 160, '1': 154, '3': 57, '4': 33, '7': 6, '5': 15, '9': 1, '10+': 3, '8': 6, '6': 3, '8+': 1}
PYTHON	{'Less than 1': 241, '1': 194, '3': 85, '4': 23, '2': 198, '10+': 13, '9': 6, '7': 3, '5': 12, '6': 7, '8': 1}
JAVA	{'Less than 1': 427, '1': 127, '3': 47, '2': 96, '4': 14, '9': 4, '5': 12, '10+': 15, '7': 4, '6': 9, '8': 5}
PHP	{'2': 101, '1': 149, 'Less than 1': 193, '4': 34, '3': 89, '5': 10, '10+': 5, '9': 5, '7': 7, '8': 6, '6': 2, '8+': 1}
C++	{'Less than 1': 446, '2': 30, '1': 48, '4': 17, '10+': 7, '5': 5, '3': 16, '8': 3}
BOOTSTRAP	{'Less than 1': 291, '2': 92, '1': 110, '4': 20, '3': 18, '5': 3, '6': 2, '7': 3, '8': 1}
MYSQL	{'2': 115, 'Less than 1': 147, '3': 56, '1': 140, '4': 24, '6': 4, '8': 4, '7': 5, '5': 4, '10+': 5, '6+': 1}
NONE	None
JQUERY	{'2': 119, 'Less than 1': 117, '1': 83, '3': 36, '4': 20, '9': 4, '5': 12, '7': 1, '6': 5, '8': 2}
SQL	{'1': 107, 'Less than 1': 111, '6': 5, '2': 59, '3': 39, '4': 15, '10+': 2, '5': 13, '7': 11, '8': 8, '4+': 2, '9': 1}
HTML5	{'2': 79, 'Less than 1': 118, '1': 79, '3': 36, '5': 7, '4': 18, '10+': 1, '6': 5, '7': 3, '8': 5}
DJANGO	{'Less than 1': 130, '1': 60, '3': 16, '5': 3, '2': 42, '7': 1, '4': 2, '10+': 4, '6': 1}
C	{'Less than 1': 105, '2': 24, '4': 13, '1': 28, '5': 1, '3': 11, '10+': 1, '7': 1}
MACHINE LEARNING	{'2': 67, '3': 23, 'Less than 1': 73, '1': 77, '4': 11, '7': 2, '5': 4, '8': 2}
GIT	{'2': 20, '1': 35, 'Less than 1': 40, '6': 5, '4': 5, '3': 14, '5': 7, '8': 4}
DATABASE	{'Less than 1': 297, '2': 24, '4': 8, '1': 40, '3': 17, '6': 8, '5': 2, '9': 1, '10+': 1}
AJAX	{'2': 42, 'Less than 1': 134, '1': 38, '3': 20, '4': 11, '5': 6, '10+': 1, '6': 2, '9': 2, '7': 1}
LINUX	{'2': 30, 'Less than 1': 121, '4': 6, '3': 17, '10+': 4, '1': 23, '9': 3, '7': 4, '5': 2, '6': 1}
MONGODB	{'1': 76, 'Less than 1': 84, '4': 6, '2': 27, '3': 12, '5': 3}
CODEIGNITER	{'2': 36, 'Less than 1': 46, '1': 45, '3': 7, '4': 3, '5': 3, '6': 1, '8': 3}
ANDROID	{'Less than 1': 134, '1': 44, '3': 19, '6': 4, '2': 33, '4': 6, '5': 2, '9': 1}
NODEJS	{'Less than 1': 55, '4': 5, '1': 73, '6': 2, '3': 17, '2': 37, '5': 4, '4+': 1}
C#	{'Less than 1': 69, '2': 28, '3': 8, '4': 8, '1': 27, '10+': 11, '7': 1, '5': 4, '9': 2, '6': 2}
WORDPRESS	{'Less than 1': 45, '1': 25, '2': 30, '4': 10, '3': 16, '6': 5, '4+ Year': 1, '8': 1}
CORE JAVA	{'2': 29, 'Less than 1': 36, '3': 3, '1': 18, '4': 3, '10+': 1, '8': 2}
DEEP LEARNING	{'Less than 1': 52, '2': 31, '3': 6, '7': 2, '1': 42, '4': 9, '5': 2}
SPRING	{'Less than 1': 16, '2': 23, '3': 12, '1': 27, '5': 5, '10+': 2,

```

'4': 1}
HIBERNATE      {'Less than 1': 15, '2': 21, '1': 25, '3': 4, '4': 1, '5':
2}
ECLIPSE        {'1': 7, 'Less than 1': 55, '6': 3, '2': 5, '3': 3, '4': 3,
'9': 1, '8': 1, '10+': 2, '5': 1}
ORACLE         {'2': 11, 'Less than 1': 30, '3': 8, '1': 11, '10+': 11, '6': 11,
'5': 4, '4': 3, '8': 2, '7': 2, '9': 2}
ANGULARJS      {'Less than 1': 84, '2': 29, '1': 59, '3': 11, '4': 1, '6':
1}
LARAVEL        {'1': 43, 'Less than 1': 54, '2': 26, '3': 14, '4': 5, '8':
2, '1.5': 1, '5': 1}
JSON           {'Less than 1': 14, '2': 30, '3': 9, '8': 3, '1': 14, '5': 4, '4':
1, '6': 1}
JSP            {'Less than 1': 34, '1': 17, '2': 6, '4': 2, '6': 4, '9': 1, '10+':
1}
XML            {'Less than 1': 15, '5': 1, '6': 3, '4': 3, '2': 4, '1': 8, '9': 1,
'8': 1, '3': 4, '10+': 1}
KERAS          {'1': 18, '2': 8, '3': 2, 'Less than 1': 13}
VISUAL STUDIO  {'Less than 1': 5, '1': 3}
               {'Less than 1': 15, '3': 3, '2': 5, '4': 9, '10+': 7, '7': 1, '1':
4, '8': 1, '5': 5}
SQL SERVER     {'2': 9, 'Less than 1': 18, '3': 6, '7': 1, '4': 6, '1': 3,
'5': 1}
TENSORFLOW     {'4': 6, '1': 35, '10+': 4, 'Less than 1': 19, '2': 7, '3':
1}
CSS3           {'Less than 1': 14, '1': 4, '3': 8, '2': 7, '7': 1, '5': 1}
ANGULAR        {'Less than 1': 15, '2': 17, '3': 3, '4': 2, '1': 29, '3+ Ye
ar': 1}
J2EE           {'4': 4, '1': 7, 'Less than 1': 9, '2': 3, '5': 1, '7': 1, '3': 1}
DATA SCIENCE   {'Less than 1': 24, '3': 4, '1': 14, '2': 13, '4': 1, '5':
3, '6': 1}
REACTJS        {'Less than 1': 45, '2': 16, '1': 21, '4': 2, '3': 1}
.NET           {'Less than 1': 78, '2': 13, '3': 2, '10+': 3, '4': 1, '1': 11, '9':
3, '5': 1, '6': 1}
EXCEL          {'Less than 1': 112, '6': 6, '2': 1, '3': 6, '5': 3, '1': 3, '4': 3,
'10+': 1, '7': 1}
API            {'Less than 1': 41, '1': 9, '2': 15, '3': 5, '6': 2}
ASP.NET        {'Less than 1': 60, '2': 4, '10+': 2, '3': 3, '1': 13, '6':
3, '9': 1, '4': 3, '5': 1, '8': 2}
NUMPY          {'1': 12, '2': 8, 'Less than 1': 12, '4': 1}
AWS            {'1': 15, '2': 25, 'Less than 1': 55, '3': 8, '4': 3, '5+ Year': 1,
'3+ Year': 1}
PANDAS         {'1': 7, 'Less than 1': 12, '2': 8, '4': 1}
FLASK          {'1': 16, '4': 1, '2': 12, '3': 5, 'Less than 1': 9}
ARTIFICIAL INTELLIGENCE {'Less than 1': 61, '1': 8, '3': 4, '2': 7,
'7': 2, '5': 2}
DOCKER         {'1': 10, '10+': 4, '2': 5, 'Less than 1': 15, '3': 4, '4': 3, '5':
1}
MATPLOTLIB     {'Less than 1': 6, '2': 3, '1': 2}
SERVLET        {'1': 8, '2': 7, 'Less than 1': 16, '4': 1, '3': 1}
UNIX           {'1': 7, '10+': 4, '3': 11, '6': 1, 'Less than 1': 11, '2': 11, '4':
2, '5': 1, '8': 2, '7': 1}
MS OFFICE      {'Less than 1': 34, '3': 7, '10+': 7, '1': 2, '2': 4, '4':
2, '5': 2, '9': 2, '6': 1}
NLP            {'2': 12, '6': 2, 'Less than 1': 7, '1': 14, '3': 3}
MICROSOFT OFFICE {'Less than 1': 19, '1': 8, '7': 7, '5': 4, '10+':
2, '2': 8, '6': 1, '3': 5, '8': 5, '4': 4, '9': 2}

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ANDROID STUDIO      {'Less than 1': 1, '2': 6, '1': 3, '3': 4}
PHOTOSHOP           {'2': 9, 'Less than 1': 26, '5': 4, '3': 14, '1': 7, '7': 1,
'10+': 2, '4': 5, '8': 1}
DATA ANALYSIS       {'Less than 1': 45, '2': 9, '3': 4, '1': 7, '5': 1, '10+':
2}
TYPESCRIPT          {'4': 5, '2': 9, '1': 10, '3': 3, 'Less than 1': 2, '2+ Yea
r': 1}
POSTGRESQL          {'1': 8, 'Less than 1': 7, '2': 8, '3': 3, '6': 1}
HADOOP              {'1': 13, '3': 5, '2': 8, 'Less than 1': 11, '5': 1}
FIREBASE            {'Less than 1': 18, '1': 9, '3': 6, '2': 4}
HTML 5              {'1': 7, '3': 1, 'Less than 1': 1}
MVC                  {'1': 18, '3': 7, '2': 5, 'Less than 1': 8, '5': 2, '7': 1}
SPRING BOOT         {'1': 18, '2': 9, 'Less than 1': 11, '6': 1, '3': 5, '5': 2,
'4': 1}
NATURAL LANGUAGE PROCESSING {'1': 12, '6': 2, 'Less than 1': 14, '3': 5,
'2': 12, '4': 1}
NODE.JS              {'Less than 1': 15, '1': 6, '2': 8, '3': 4, '7': 1, '5': 1,
'4': 3}
WEB DEVELOPMENT      {'1': 14, '3': 9, '5': 2, '2': 6, 'Less than 1': 7,
'4': 4, '9': 2}
DATABASES            {'Less than 1': 82, '1': 5, '2': 2}
COMPUTER VISION      {'2': 16, 'Less than 1': 23, '1': 32, '3': 2}
OPENCV              {'3': 1, '1': 14, 'Less than 1': 20, '2': 10}
DATA STRUCTURE       {'2': 18, 'Less than 1': 19, '1': 6, '5': 1, '3': 7, '4': 4}
JDBC                 {'Less than 1': 22, '2': 3, '1': 2}
PL/SQL               {'Less than 1': 7, '3': 4, '1': 1, '2': 8, '6': 2, '5': 3, '7': 2,
'9': 1, '4': 1}
SQLITE               {'3': 2, 'Less than 1': 1, '2': 1}
TABLEAU              {'2': 9, '3': 4, '1': 3, 'Less than 1': 10, '8': 3}
JIRA                 {'1': 4, '5': 2, '3': 2, '4': 1, '10+': 1, '6': 1, '2': 3, 'Less tha
n 1': 2}
JENKINS              {'4': 1, '2': 8, '3': 1, 'Less than 1': 2, '1': 1}
HDFS                  {'Less than 1': 2, '1': 1}
WINDOWS              {'Less than 1': 3, '10+': 1}
ASP                  {'Less than 1': 49, '1': 5, '6': 1, '3': 1, '2': 1}
SQOOP                {'2': 3, '3': 3, '1': 1}
CLUSTERING           {'Less than 1': 3}
R                     {'7': 2, 'Less than 1': 17, '8': 3, '6': 1, '1': 1}
NODE JS              {'1': 16, 'Less than 1': 12, '2': 9, '4': 2, '3': 1}
SOFTWARE DEVELOPMENT {'1': 2, 'Less than 1': 5, '2': 3, '10+': 8, '4': 1,
'3': 2, '7': 1, '6': 2, '8': 1}
HIVE                  {'1': 9, '3': 4, '4': 2, 'Less than 1': 5, '2': 4}
REST API              {'3': 9, '1': 7, '2': 10, '6': 1, 'Less than 1': 1, '7': 1}
DATA MINING           {'Less than 1': 11, '10+': 2}
REACT                {'Less than 1': 11, '2': 10, '1': 4, '3': 2, '4': 1}
SCRIPTING             {'Less than 1': 4, '1': 5, '2': 2, '3': 3}
CORE PHP              {'3': 2, '1': 9, '2': 5, 'Less than 1': 2, '6': 2}
TALLY                 {'Less than 1': 13, '5': 8, '7': 1, '10+': 5, '6': 1, '9': 1, '1':
1, '3': 1, '8': 2, '2': 2}
DATA VISUALIZATION   {'1': 11, '3': 3, '5': 5, 'Less than 1': 10}
DBMS                  {'Less than 1': 19, '1': 1, '2': 2}
CODING                {'Less than 1': 22, '1': 7, '2': 2, '3': 1}
ALGORITHM             {'Less than 1': 31, '3': 3}
SWIFT                 {'2': 10, '1': 5, '4': 1}
SVN                   {'1': 2, '3': 5, '2': 1}
JAVA SCRIPT           {'1': 4, 'Less than 1': 1, '3': 1, '9': 1}
WORD                  {'Less than 1': 25, '2': 1, '1': 3, '4': 1, '5': 1, '3': 1}

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APPLICATION DEVELOPMENT      {'Less than 1': 8, '3': 3, '2': 1}
REACT JS                     {'1': 10, 'Less than 1': 19, '3': 5, '2': 7}
MATLAB      {'Less than 1': 18, '4': 4, '3': 1, '1': 3, '2': 1, '5': 2}
GITHUB      {'2': 4, '1': 8}
WEB SERVICES      {'1': 5, '2': 6, 'Less than 1': 7, '3': 4, '6': 1}
EXPRESSJS         {'1': 10, '3': 4, 'Less than 1': 4, '2': 2}
SHELL SCRIPTING    {'Less than 1': 2, '1': 5, '6': 2, '2': 3, '9': 1,
'3': 2, '4': 1}
EMBEDDED C         {'1': 4, '5': 1, 'Less than 1': 15, '2': 4}
REDUX              {'1': 9, '3': 2, 'Less than 1': 4, '2': 5, '4': 2}
PROJECT MANAGEMENT {'1': 3, '9': 1, 'Less than 1': 2, '5': 2, '2': 4,
'10+': 3, '8': 2, '7': 1, '4': 1, '3': 1}
SCIKIT-LEARN       {'2': 3, '1': 7}
ETL                {'5': 3, '6': 3, '2': 4, '1': 4, 'Less than 1': 3, '4': 1, '3': 3,
'9': 1}
INFORMATICA        {'3': 3, '6': 2, 'Less than 1': 3, '4': 1, '2': 2, '1': 2,
'5': 3, '9': 1, '7': 1, '8': 1}
REACT NATIVE       {'Less than 1': 14, '3': 3, '1': 7, '2': 3}
APACHE             {'Less than 1': 40, '2': 2, '1': 2, '6': 1}
IONIC              {'Less than 1': 4, '1': 4, '3': 2, '2': 3}
ADOBE PHOTOSHOP    {'Less than 1': 28, '10+': 1, '2': 1, '1': 3, '9':
1}
FRONT END          {'Less than 1': 16, '1': 7, '4': 2, '5': 1, '2': 2}
CMS                {'Less than 1': 39, '4': 1, '1': 2, '2': 1}
ALGORITHMS         {'Less than 1': 29, '5': 1, '1': 5, '4': 2, '2': 2, '3': 3}
MS SQL SERVER      {'Less than 1': 8, '10+': 1, '2': 3, '3': 3, '1': 5, '2+ Yea
r': 1, '4': 2}
SERVLETS           {'2': 1}
DB2                {'3': 3, '8': 1, '7': 1, '1': 1, '2': 3, '4': 1, 'Less than 1': 1}
SELENIUM           {'2': 2, '3': 2, '1': 1}
C/C++              {'1': 1}
SASS               {'1': 4, '5': 1, '3': 1, '4': 2, 'Less than 1': 5, '6': 1, '2': 4}
BACK END           {'2': 3, 'Less than 1': 14, '3': 2, '1': 5}
UI                 {'1': 1, '2': 6, '3': 1}
ANDROID SDK        {'2': 2, 'Less than 1': 7, '3': 2, '4': 1}
FRAMEWORKS         {'Less than 1': 30, '3': 5, '1': 1}
NETWORKING         {'Less than 1': 14, '1': 4, '3': 1, '2': 1}
IOS                {'3': 1, '4': 1, '1': 2, 'Less than 1': 5, '2': 2}
TESTING            {'Less than 1': 10, '9': 3, '10+': 2, '3': 2, '2': 2, '4':
2, '1': 1}
KOTLIN             {'1': 9, 'Less than 1': 13, '2': 3}
EXPRESS            {'2': 3, '1': 5, 'Less than 1': 2, '4': 2}
ERP                {'Less than 1': 5, '5': 3, '1': 2, '3': 1, '7': 1, '2': 4, '9': 1,
'4': 1}
DATA ANALYTICS     {'3': 1, 'Less than 1': 5, '5': 2, '1': 1, '2': 1}
IMAGE PROCESSING   {'3': 2, 'Less than 1': 22, '1': 4, '2': 2}
SPARK              {'2': 2, '3': 4, 'Less than 1': 2, '4': 3}
REST               {'Less than 1': 2, '1': 4, '4': 2, '5': 1, '8': 1, '6': 1}
PYTORCH            {'1': 4, 'Less than 1': 1}
NOSQL              {'7': 2, 'Less than 1': 3, '6': 1, '1': 3}
DATABASE MANAGEMENT {'Less than 1': 12, '10+': 2, '2': 4, '1': 11, '4':
2, '8': 1}
JS                 None
XCODE              {'9': 1, 'Less than 1': 7, '2': 3, '1': 1}
SPRING MVC         {'2': 5, 'Less than 1': 1, '1': 1}
WINDOWS 7          {'Less than 1': 17, '1': 1, '7': 1, '3': 1}
REDIS              {'Less than 1': 4, '2': 11, '5': 1, '3': 1, '1': 2}

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```

DREAMWEAVER      {'Less than 1': 22, '4': 1, '5': 2}
SAP               {'9': 1, '1': 4, '2': 2, '3': 1, 'Less than 1': 1, '10+': 1, '4': 1}
VB.NET           {'1': 3, '5': 3, 'Less than 1': 3, '2+ Year': 1, '4': 1, '2': 1}
POWER BI         {'3': 1, '1': 6, '2': 3}
MAVEN            {'2': 1, 'Less than 1': 1, '3': 2, '1': 1}
MS EXCEL         {'Less than 1': 12, '5': 2, '2': 3, '1': 1, '10+': 1}
ACCOUNTING       {'Less than 1': 6, '1': 1, '3': 2, '2': 3, '9': 1, '10+': 2, '5': 1}
ANGULAR JS       {'Less than 1': 5, '1': 3, '4': 1}
AMAZON WEB SERVICES {'1': 5, '4': 1}
SVM              {'1': 1}
OBJECTIVE C      {'4': 1, '1': 1, 'Less than 1': 4, '2': 2, '5': 1}
KAFKA            {'Less than 1': 4, '3': 2, '1': 1}
ARDUINO          {'3': 1, 'Less than 1': 3, '2': 3, '4': 2, '1': 1}
NODE             {'1': 2, '5': 1, '2': 1, 'Less than 1': 1}
FLUTTER          {'1': 9, 'Less than 1': 17}
NLTK             {'Less than 1': 2, '5': 1}
PYCHARM         {'Less than 1': 2, '2': 2, '1': 1}
WEB TECHNOLOGIES: HTML None
ACCESS          {'Less than 1': 44, '1': 1, '10+': 1}
SCIPLY           {'Less than 1': 7, '2': 3, '1': 1}
NEURAL NETWORKS {'1': 5, '3': 2, '4': 1, 'Less than 1': 2}
OPERATING SYSTEMS None
VISUAL STUDIO CODE {'Less than 1': 2, '3': 1, '2': 1}
MS ACCESS        {'Less than 1': 4}
ADO.NET          {'Less than 1': 13, '2': 1, '1': 4}
FRONT-END        {'Less than 1': 4, '1': 1, '2': 1}
HBASE           None
SOAP            {'8': 1}
DATA STRUCTURES {'Less than 1': 21, '2': 1}
OOPS            {'3': 3, '2': 2}
PHP DEVELOPER    {'1': 4, '2': 4}
RANDOM FOREST     {'1': 1}
ADVANCE JAVA     {'2': 6, 'Less than 1': 3, '1': 1}
ORACLE PL/SQL    {'2': 2, '5': 1, '10+': 6, 'Less than 1': 9, '1': 1, '6': 1, '3': 4, '4': 1}
MANUAL TESTING   {'3': 1, '5': 1, '4': 1, '6': 1, 'Less than 1': 1}
MICROSERVICES    {'2': 5, 'Less than 1': 5, '4': 5, '5': 1, '7': 1, '1': 1}
AGILE            {'2': 4, '5': 3}
NATURAL          None
CNN             {'Less than 1': 6}
POSTMAN          {'Less than 1': 2, '1': 4}
PROBLEM SOLVING {'Less than 1': 12, '10+': 1, '3': 1}
SQL DBA          {'3': 1, '2': 5, 'Less than 1': 2, '1': 2}
RNN             {'Less than 1': 6}

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