Resume Based Job Recommendation System\* (use style: *paper title*)

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*Abstract*—This paper mainly focuses on job prediction system from resume, by selecting keywords from resume, and making use of KNN algorithm

Keywords—K Nearest Neighbors, Resume, skills

# Introduction

In the modern era, finding a relevant job is a tedious process.

Appliers often see rejection from many companies, and the job market is highly competitive, so people are still in a dilemma about whether to apply for their more suitable jobs. This application mainly focuses on skill identification from words and recommends the kind of job to the user based on skills derived from the resume.

# Earlier approach And problems related to data collection

## Linkedin’s Approach

LinkedIn is one of the most popular websites. Here,  it recommends jobs to users, and users keep applying for the jobs they see on the website, but if users fail to provide suitable information and apply, then it provides irrelevant recommendations.

## Job Portals

Identify applicable funding agency here. If none, delete this text box.

Most of the time, job portals like Handshake provide recommendations based on the domain on which we are applying; they fail to identify the skills that applicants have, so the first thing they need to do is identify the skill.

## Impure Data and False recommendations

Many job portals fail to create a proper UI, so as a result, incorrect information gets collected, and many times incorrect recommendations are provided. So, in order to prevent this, a proper UI must be provided.

Sometimes the correct context of the words is not identified; for example, proverbs like “Do not cry over the spilled milk," “It is raining cats and dogs," etc. are interpreted incorrectly, which leads to misunderstandings and incorrect recommendations being provided.

## Sometimes similar words are ignored:

Synonyms are ignored by most of the applications that do not make use of NLTK. As a result, the probability of correct recommendations is reduced, so in order to prevent this, we make use of NLTK (Natural Language Tool Kit).

# Proposed methodology

We identified the above problems and came up with a solution that almost resolved the issue.

## A.    Data Gathering

* We downloaded the dataset from Kaggle, and we found out that it had lots of HTML tags, punctuation, similar words, and many stop words.
* The data was unorganized, and it had many blank spaces.

## B. Processing the Data

We removed HTML tags, emojis, smart quotes, and stop words, went through lemmatizing, tagging, removing, punctuation, and spelling correction, and saved the data in a text file.

## Data Visualization

We plotted a bar chart, a violin plot, a word cloud, a line graph, and a histogram.

After this, we found out the most common occurrences of words.

It was found that words like SQL, Data, Months, C, Project, Testing, and Test occurred more frequently.

We identified similar words and did TFIDF vectorization.

We performed slot filling and visualization, and it was found that Python’s count was higher.

## Algorithm Applied

For recommending the jobs or whichever job was relevant we made use of KNN(K Nearest Neighbors Algoirthm) this algorithm makes use of Euclidean distance by default to find the nearest neighbor, by default this algorithm assumes nearest neighbors as 5.

*a**b* 

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* The word “data” is plural, not singular.
* The subscript for the permeability of vacuum **0, and other common scientific constants, is zero with subscript formatting, not a lowercase letter “o”.
* In American English, commas, semicolons, periods, question and exclamation marks are located within quotation marks only when a complete thought or name is cited, such as a title or full quotation. When quotation marks are used, instead of a bold or italic typeface, to highlight a word or phrase, punctuation should appear outside of the quotation marks. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)
* A graph within a graph is an “inset”, not an “insert”. The word alternatively is preferred to the word “alternately” (unless you really mean something that alternates).
* Do not use the word “essentially” to mean “approximately” or “effectively”.
* In your paper title, if the words “that uses” can accurately replace the word “using”, capitalize the “u”; if not, keep using lower-cased.
* Be aware of the different meanings of the homophones “affect” and “effect”, “complement” and “compliment”, “discreet” and “discrete”, “principal” and “principle”.
* Do not confuse “imply” and “infer”.
* The prefix “non” is not a word; it should be joined to the word it modifies, usually without a hyphen.
* There is no period after the “et” in the Latin abbreviation “et al.”.
* The abbreviation “i.e.” means “that is”, and the abbreviation “e.g.” means “for example”.

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1. G. Eason, B. Noble, and I. N. Sneddon, “On certain integrals of Lipschitz-Hankel type involving products of Bessel functions,” Phil. Trans. Roy. Soc. London, vol. A247, pp. 529–551, April 1955. *(references)*
2. J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68–73.
3. I. S. Jacobs and C. P. Bean, “Fine particles, thin films and exchange anisotropy,” in Magnetism, vol. III, G. T. Rado and H. Suhl, Eds. New York: Academic, 1963, pp. 271–350.
4. K. Elissa, “Title of paper if known,” unpublished.
5. R. Nicole, “Title of paper with only first word capitalized,” J. Name Stand. Abbrev., in press.
6. Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, “Electron spectroscopy studies on magneto-optical media and plastic substrate interface,” IEEE Transl. J. Magn. Japan, vol. 2, pp. 740–741, August 1987 [Digests 9th Annual Conf. Magnetics Japan, p. 301, 1982].
7. M. Young, The Technical Writer’s Handbook. Mill Valley, CA: University Science, 1989.

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