BIA 660
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Research Proposal
What is expected from an accountant nowadays? A Change in Skillset

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1. **Introduction**

   The past decade has seen remarkable growth in the adoption, use, and popularity of emerging technologies within the vast majority of industries, including, but not limited to, the financial, public, educational, health, and research sectors (Ajana, 2015). The accounting field is not an exception (Fedyk et al., 2022; Cooper et al., 2019; Sun, 2019). In order to solve this problem, we are interested in examining the rising trends of change in the skillset needs of this specific role (i.e., accounting), which is more prone to utilizing different emerging technologies over time. With the help of web mining techniques, we will be able to examine and assess the current job descriptions to pinpoint the skills needed for job seekers in highly regulated accounting jobs.

2. **Preliminary Literature Review**

   Many studies have examined the antecedents of applying these technologies in a well-regulated profession (i.e., accounting). With the rise of artificial intelligence and robotic process automation adoption in accounting and auditing, accountants and auditors are expected to possess willingness and openness to emerging technologies (Eulerich et al., 2021). This is important as they take the initiative to identify processes that might be automated (Kokina and Blanchette, 2019). This sheds more light on the fact that minimum awareness of these technologies is a prerequisite for accountants and auditors to identify the use case of automation (Cooper et al., 2019).

   Manita et al., 2020 also suggests that business schools and universities should adjust their training programs to reflect the audit firm's expectations, as students should acquire the skill sets to process and analyze big data. This way, students will not only get to explore the technologies utilized but to enhance the student's technology perception to ultimately adopt and rely on these technologies by illustrating perceived ease of use and perceived usefulness (Damerji and Salimi, 2021). In parallel, accounting department heads have demonstrated a significant commitment to investing in training programs to enhance the skill sets required to cope with the evolving demands and needs of the industry and practice. (Kend and Nguyen., 2020). These facts, where aggressive training programs are put to place, probably serves as an indicator that skills needed from an accountant today are different from what was needed perhaps a decade ago.

3. **Objectives and expected contributions**

   We try to solve issues faced by job seekers(here accountants) to be more adaptive and job ready with the changing needs to keep up with constantly changing technology along with their field of expertise. We will be also taking the help of old job descriptions and requirements from OnetOnLine a government affiliated website to understand the job requirements and formulate a model that will solve or show the changing needs of on the job skills.

Research Question 1 - What is the skill set needed as an Accountant these days ?
It has been observed, changing trends and fast paced developments in technology has tend to penetrate in all the sectors or field of work Accounting is not spared either, hence there are emerging developments to build automation models using artificial intelligence and machine learning that demand the need to develop skills in areas like data analytics and coding. Apart from this Accountants also need to be upfront with their strategic abilities and knowledge to be upfront in the job.

Research Question 2 - How are they different from the skill set needed a couple of years ago?
When we look at the past decade there has been a huge change in the skill requirements for a job of accountant. Even today due to emerging technologies the skills required on the job are constantly developing and moving towards new trends and technologies followed. This signifies the old school paper work or excel reports are considered to be moving towards a more automated way of working.

To meet these demands and changing skill requirements we came up with this idea to formulate a way to understand the current trends and we expect our findings in this area and the model will contribute to solve following issues-

- This application can be used as a helping guide to know what are the emerging trends and technologies that an accountant needs to learn
- It will give a brief overview of changing needs of their skill sets for the prospective job applications to Guide and follow the trend
- The students, prospective accountants will be readily knowing the market demands and adapt and follow to improve their knowledge of various emerging technical aspects like automation. This will contribute to preparing them before time and be job ready once they are educated from institutions supporting certain required skill sets.

4. Methodology

1. Information Extraction
    a. Past Datasets for Job Description and skill requirements
    Job description and skill set requirements from previous records will be captured from onetOnLine a government controlled website to gather information of the skill needs of past years.
    b. Web Scraping
    With the help of Web scraping technique we will be scraping through the job portal website like - indeed.com where we will be capturing job descriptions for an accountant. We will be gathering their all descriptions and make it as current required skill needs.
    c. Exploratory Data Analysis
    We will do Exploratory Data Analysis on the dataset captured from the web scraping in python and analyze the dataset to generate or know keywords that are more prominent wrt the problem statement defined.
2. Parsing / Annotation
    Further we will find the most frequently occurring words in the job description which are aligned with the skill requirements and extract words to lemmatize and perform Named Entity Recognition
3. Feature Extraction - Vector spaced models/Word vectors

Then, we form the word vectors out of the dataset to perform a full understanding of the most important words or job skill requirements in current days. This will help us to compare the previous dataset with skill requirements with the current trends.

4. Text Mining - Supervised Learning Classification
   Once done with the data analysis we will be using this to extract the skills and classify them according to the technological and accountant related job requirements.

5. Brief Project Schedule

Our project can be divided into the following tasks and shared among our team members:

Task	**Assignee**
(1) Data collection	Avyaya Chenna
(2) Data preprocessing	Avyaya Chenna
(3) Account classification Method 1	Kanika Yadav
(4) Account classification Method 2	Kanika Yadav
(5) Topic Analysis	Maher Kassar
(6) Hypothesis testing and interpretation	Maher Kassar
(7) Poster creation	All
(8) Research report writing	All

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