AI-Powered LinkedIn Profile Analyzer – Project Proposal

Tal Pe’er, Yoav Sgan Cohen, Itay Bachar

March 2024

Introduction

LinkedIn plays a crucial role in professionals' lives, allowing them to showcase their expertise, network with peers, and discover career prospects. However, in today's rapidly evolving job market, navigating career progression and skill development can present significant challenges.
In this project, we aim to develop an AI-powered Profile Analyzer tool that empowers LinkedIn members to make informed decisions about their career paths and skill development strategies.

Our chosen path is to create an end-user feature, focusing on enhancing the user experience for everyday LinkedIn members. By providing personalized recommendations and actionable insights, we aim to help users bridge the gap between their current profiles and their desired career goals.

Research Question:

How can AI be leveraged to provide personalized recommendations for skill development and career advancement on LinkedIn?

Key Objectives:

- Understand the career aspirations and skill development needs of LinkedIn members across various industries and job roles.
- Develop AI algorithms capable of analyzing users' profiles and identifying relevant skills, courses, and certifications based on their desired career paths.
- Design an intuitive user interface that presents personalized recommendations in a clear and actionable format, empowering users to take control of their professional

Benefits of the New Solution

The AI-powered Profile Analyzer will offer several benefits to LinkedIn members:

- Personalized Career Guidance: Users will receive tailored recommendations on skills to develop, courses to take, and certifications to pursue based on their desired career goals and current profile.
- Targeted Skill Enhancement: By providing specific suggestions for skill development, users can efficiently acquire the knowledge and expertise needed to transition into new roles or advance in their current positions.
- Strategic Career Planning: The tool will help users make informed decisions about their career paths by identifying the most relevant skills and qualifications required for their desired roles and industries.

Relevant Data from General Databases

Leveraging the Companies and Profiles data sources, we'll build a comprehensive model for the LinkedIn Profile Analyzer tool, offering personalized recommendations to help users advance their careers and achieve their professional goals. We are planning to use the

“Companies” dataset for extracting employees and use the company industry as their tags. Then, the Profiles dataset will be used for gathering mainly the next attributes:

- Profile Information: Utilizing fields such as ‘country_code’ and ‘languages’, we gain insights into users' backgrounds, locations, and language proficiency. This data, compliant with LinkedIn rules, enables personalized recommendations based on users' cultural background and location-specific job markets.
- Education and Certifications: The ‘education’ and ‘certifications’ arrays in the Profiles dataset, furnish details about users' educational background and professional certifications. Analyzing degrees, fields of study, and institutions attended allows us to identify educational gaps and suggest relevant courses for qualification enhancement.
- Work Experience: The ‘experience’ array provides details on users' career progression and specific job roles held. Analyzing this data helps identify transferable skills and recommend career paths aligned with users' professional backgrounds.
- Courses: The ‘courses’ array contains information about users' completed courses and volunteer work. Analyzing this data allows us to recommend additional learning opportunities that support users' career goals and aspirations.

Additional Data Collection

In one of the available datasets, specifically the "profiles" dataset, we aim to utilize columns that provide insights into the current state of a user's skills, including certifications, education, positions, and courses. Our project focuses on enhancing this information by adding skills to individuals from the profile dataset. In this context, we define our item as "jobs," with columns containing relevant information such as required skills, necessary education, required courses, expected years of experience, and job salary ranges. Our estimate for enrichment size is at least 10000. To adhere to ethical and legal standards, we plan to utilize official APIs that allow authorized access to the data from platforms like LinkedIn, Glassdoor, and the Bureau of Labor Statistics (BLS).

Project End Goals

The goal of the project is to deliver an AI-powered Profile Analyzer tool that:

- Analyzes users' LinkedIn profiles and identifies areas for skill development and career advancement based on their desired roles and industries.
- Provides personalized recommendations on courses to take, certifications to pursue, and skills to acquire to achieve users' career goals.
- Empowers users to make informed decisions about their career paths by offering targeted guidance and actionable steps for skill enhancement and professional growth.

We plan to implement the solution by utilizing different ML approaches such as clustering, dimensional reduction (PCA for understanding the most valuable indicators for roles/ domains), natural language processing (NLP) techniques for data preprocessing, and more relevant machine learning algorithms which will be find appropriate for our goal.

Moreover, we will create a Django app which will be connected to the AI model and dataset, using JavaScript, HTML and CSS for enhancing user experience.