CS122 Group Project Proposal
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Goal

Ever feel uncertain about what should be your next step in your career? Or if it is a right time to ask for a promotion or even quit the hopeless job and look for opportunities in another industry? For this project, we intend to build a job recommendation search engine for professionals at different stages based on analysis of the career trajectory of experienced professionals in the field that will answer these questions. Our model will take in the information on the user's Linkedin profile, and suggest where our user could move on to based on our analysis of the career pattern using profiles of people with similar credentials when they were at the user's career stage. This model will be able to analyze the user's profile, identify similar professionals, and provide general recommendations to the user so he or she can answer questions related to his or her career such as: should you ask for a promotion, should you switch to a different company in the same industry and where, and should you switch to a different industry and the outlook.

Data Sources

We will obtain information using API from Linkedin.
Data on employees: panel data (i: individual; j: years of work)
employer, position, industry, length of the job, full-time/ part-time / internship
Data on employers:
industry, location, sector (public, private), size (# of employees), revenue

Work Breakdown

1) Selection: obtain information from Linkedin and select relevant information based on the search inputs (T & C)
2) Pattern discovery and Analysis: quantifying attributes, use an algorithm to discover a pattern, and generate recommendations (T & C)
3) Output: visualize the recommended career paths (T)
4) User interface: design and implement a user-friendly interface (C)

Timeline

Optimize the project design by week 4
Obtain data by week 5
Selection by week 6
Pattern discovery by week 8
Output and User interface by week 10

New Algorithm/Technology:

1) Probabilistic classification: Find the senior professionals with similar experience with the user at the early stage of their career by repeatedly using classification.

2) Pattern discovery: Identify if there is any pattern in the career trajectory of the qualified professionals. Ideally, we would like to output the result using:
3) Data visualization: We will present the layout of the search output flexibly. The user will be able to interact with the graph by changing search terms, and the graph will present multiple dimensions.