

Wikipedia Knowledge Graphs as Job Interview Kits

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Abstract—Wikipedia graphs have been used for various innovative use-cases. In this extended abstract we view that this untapped resource can be used as a viable job interview kit and we would like to bring the idea to discussion among the community.

Index Terms—soft mobility, optimization, sustainability policy, fairness, open data

I. INTRODUCTION

Job interviews, though being one of the crucial steps in HR recruiting process, are one of the least standardized steps in the pipeline. This results in inefficiency and unpleasant experience such as different forms of anxiety to the interviewee [1]. Various research outcomes have shown that job interviews are generally prone to implicit discrimination caused by absence of systematized questions and differing cultural and experience backgrounds. Note that this problem is exacerbated when we consider interviews targeting job categories in non technical positions. As a result interviewers often resort to questions like "what are your biggest weaknesses", "what are your biggest strengths" [2].

In professions such as software development we often find procedures such as whiteboard interviews where technical recruiters assess technical knowledge and reasoning ability of an applicant as the interviewee walks the recruiter through the solution they develop.

In this article we argue that the Wikipedia knowledge graph can serve as a useful tool to develop an interactive interviewing methodology that enables the interviewer to assess high level knowledge of the interviewee about a certain topic related to the job profile and their reasoning process while the interviewee navigates the articles in the knowledge graph connecting the required knowledge entities.

We hold that the rich linked knowledge openly available in Wikipedia coupled with its global popularity makes it a good candidate to overcome the problems in traditional interviews. First, since it is a widely used multi domain resource, it serves as a good conversation opener that can put the interviewee at ease and making the interviewer avoid asking personal question such as their age that could lead to discrimination. Even though the interviewer and candidate may come from different backgrounds Wikipedia can be a common ground. Second Wikipedia content is dynamic and frequently updated with recent developments, hence this puts it in a unique position that can be leveraged to discuss latest developments in a topic of interest.

II. PROPOSED APPROACH

A. Gamification of job interview process

Given the comprehensive nature of Wikipedia, theoretically, information on any topic of a given domain will be available there. With this premise we can assume that useful knowledge from domain topics in the job category that needs to be filled will be spread over different Wikipedia pages. We can further argue that a candidate with more knowledge and experience about a desired topic knows the relation between these pages more than a candidate with no knowledge about the contents of the topic. To explain the proposed approach lets consider an Alice and Bob example. Lets assume that Alice wants to hire a candidate for position available in her company. After filtering down candidates from different backgrounds (e.g. different country, different school and grading system etc.) she wants to interview Bob. Alice wants Bob to know about topics X, Y, and Z. Alice brings Wikipedia tool, opens a page about topic X and asks Bob to take her to page Y by choosing one of the links from page X that he thinks is closest to page Y. Meanwhile Bob explains why he didn't choose other links on the page. Bob, based on his accumulated knowledge about the topics, explains Alice that his chosen link i is closest to page Y because of his knowledge of the relations (relations could be historical events that happened, components of a system, or theoretical derivations etc). Bob continues this process until he reaches the desired page Y, or until some condition is met. Observing the reasoning and itinerary, Alice gets high level grasp of Bob on the topic, and gets information that measures Bob's suitability and how Bob compares with other candidates.

B. Example

As a practical example lets assume that Alice wants to hire for a tourism department who knows about the history and overall knowledge about Lausanne (a city in Switzerland). Alice asks Bob to take her from a page about Chess game to the page describing Lausanne. The graph connecting the two pages generated with six degrees of wikipedia is shown in Figure 1. Among hundreds of links on Wikipedia page about Chess, only 12 of the links lead to the shortest path to page Lausanne. As an example, Bob with thorough knowledge about the city could explain that Lausanne is the seat of FIDE (International Chess Federation) an international governing body of Chess, so choosing that will be most feasible path as it will directly lead to the destination node.

Note that creating a guideline and framework including time estimates, identifying Wikipedia source and target pages



Fig. 1. graph showing 12 possible paths between chess and Lausanne. The source node (chess) is colored blue while the intermediary nodes and destination (Lausanne) are colored orange and green respectively.

semantically relevant to a target job description, and general feasibility is yet to be researched. In particular, experimental evaluation based on intensive user study involving users from diverse backgrounds will be required to create empirical candidate evaluation metrics such as edge selectivity score (i.e. number of picked job relevant edges to a target), path completeness (number of relevant nodes covered under time constraint), and the more important subjective evaluation guidelines (e.g. how much a candidate is expected to say about a node in the path) derived from interaction with candidate.

III. RELATED WORK

Gamification of Wikipedia has been an interesting topic both within academia and in general. Some of the interesting tools of interest to the topic of this article include tools collectively known as Wikiracing particularly: thewikigame [3], sixdegreeofwikipedia [4], and Wikispeedia [5]. Creating a framework for the proposed approach could benefit from these tools and a wide body of research about Wikipedia, graph theory, and NLP garnered over the years.

IV. CONCLUSION

In this paper we highlight that Wikipedia can be innovatively used as a useful job interview kit. With a simple example we show how the approach could be materialized opening discussion for a line of work in this direction. Analyzing the efficacy of the proposed approach and creating standardized framework to make this resource a useful interview tool remains open for discussion.

V. ACKNOWLEDGEMENT

We especially thank the anonymous reviewers for their thoughtful comments, ideas, and suggestions for the improvement of the manuscript.

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