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# DreamGigs: A “Stepping Stone” for Low-resource Job Seekers to Reach Their Ideal Job

**Alex Lu**

University of Michigan  
School of Information and  
School of Social Work  
Ann Arbor, MI 48109, USA  
alexjlu@umich.edu

**Tawanna R. Dillahunt**

University of Michigan  
School of Information  
Ann Arbor, MI 48109, USA  
tdillahu@umich.edu

**Jason Brill**

University of Michigan  
College of Literature, Sciences,  
and the Arts  
Ann Arbor, MI 48109, USA  
jbrill@umich.edu

**Abstract**

Digital employment tools ought to support job seekers in developing viable career paths while preparing them with necessary skills for employment. This is particularly important for job seekers who are not highly educated and lack access to resources such as career counseling. We designed, implemented, and conducted a preliminary evaluation of a prototype—DreamGigs, a tool to help job seekers understand the career-related skills they would need to obtain to reach their “dream” job or gig. Our preliminary results suggest that DreamGigs helps job seekers understand what skills employers need, identify potential pathways towards their career goals, and access opportunities to gain the skills needed to achieve their goals. We contribute the design of this tool, our implementation, and the results of our initial evaluation with low-resource job seekers.

**Author Keywords**

Digital employment tools; unemployment; underserved job seekers; career pathways

**Introduction**

As of May 2018, approximately 1.2 million of unemployed individuals in the U.S. had been unemployed for more than 27 weeks [1]. Those who face unemployment tend to be less well-educated and more likely to fall into the “skills gap” resulting from the disparity between the skills that

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**Scenario and User Flow:**

Andy is a job seeker who began working as a construction worker for five years after high school. Andy hurt his back while on the job and desires a safer work environment. His friends suggest that he would do well in an accountant position but he is unsure how to build his experience to transition to this area. Andy hears about and visits DreamGigs.

**Site Interaction:**

Andy selects *Construction Laborers* as his past job (Figure 1). He selects *Accountants* as his dream job and then selects his current city. Andy sees a set of suggested skills that he needs to develop and selects two top skills: (1) Economics and Accounting and (2) Mathematical Reasoning. Andy sees a list of recommended intermediate occupations related to the two chosen skills, and he selected the top one, Correspondence Clerks. He finds a set of available gigs related to Correspondence Clerks.

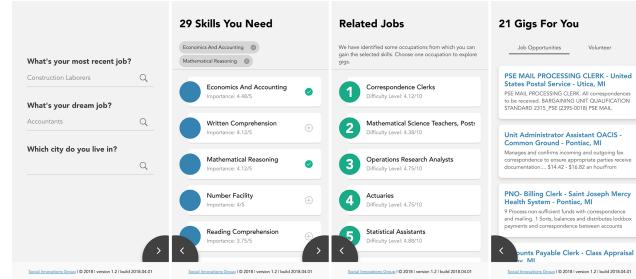
employers are looking for and those job seekers own [2]. Finding training to build the skills employers require is key—especially given the high costs of education. Past research among low-resource job seekers suggests that understanding which paths to take to reach career goals is needed [11] and could help individuals improve their employability [6].

To provide support for job seekers, especially those with limited resources, we designed, implemented, and evaluated a prototype—DreamGigs—to help job seekers understand the career-related skills they would need to obtain in order to reach their “dream” job or gig. This work extends past CSCW and HCI-related research that has investigated: existing employment interventions and interventions for providing education and training to job seekers [6, 7, 8, 10], and interventions to support job seekers’ most practical and immediate needs during the job search process [4, 5]. Specifically, this work aims to address past work that suggests that job seekers desire concrete paths to achieve their career aspirations [6, 11]. This work contributes our initial design, which was inspired by these past literatures and our earlier design work, the details of our implementation, and the results of a preliminary evaluation.

**DreamGigs Design and Implementation**

*Front-end:* We emphasized the importance of developing DreamGigs to be usable from a mobile phone, which past research has identified as important for underserved and low-resource populations [9, 4] (See Figure 1). Hence, we adopted Ionic 3 framework for the front-end implementation, which ensures that users can access the tool from different browsers on both mobile phones and desk or laptops (See Side Bar text for a scenario and the user flow description).

*Back-end:* We used the Python Flask framework to build the back-end web server. The back-end’s three key respon-



**Figure 1:** Main Screens: a. Job seekers enter past and desired jobs; b. Job seekers select desired skills to gain; c. Job seekers select preferred intermediate occupation; d. Gigs and volunteer opportunities related to the chosen intermediate occupation, that job seekers to build on selected skills and reach their dream job

sibilities include: (1) analyzing job seekers’ possessed skills and identifying the skills they need to reach their dream job, (2) identifying intermediate occupations available based on the skills selected by job seekers, and (3) parsing available jobs from Indeed.com and volunteer opportunities from VolunteerMatch.org that related to the selected intermediate occupation to prepare job seekers with the skills needed for their dream job.

**Preliminary Evaluation Method***Participants*

For our preliminary tool evaluation, we recruited eight participants (N = 5 females) from southeastern Michigan who (1) have less than a four-year college degree, and (2) have been searching for jobs in the past six months. We asked participants to complete a demographic survey about their employment status (See Side Bar for descriptive statistics).

*Method*

Our preliminary evaluation began with interviewing participants about their experiences, frustrations, and concerns relating to the online job search and career transition. Next,

### Descriptive Statistics

The majority low-resource job seekers identified themselves as African Americans (7/8), while the rest identified as Native American (1/8). Two participants were over the age of 50, five participants were between the ages of 40 and 49, one participant was under the age of 30. The majority of our participants (N = 7) were looking for a full-time position, and five (N = 5) reported an annual income of less than \$15,000.

### Sample Questions Asked

- Describe the overall experience while you were navigating the tool.
- What are your thoughts regarding the identified skills, intermediate occupations, and gigs?
- How do these opportunities impact your job search? Do you believe they are beneficial or not?
- What additional information and opportunities would be beneficial?

we conducted usability tests to evaluate the efficiency and effectiveness of the current prototype, with minimal instructions provided. We asked each participant to use the tool based on their real life experiences. We also asked participants to think aloud [3] about their experience using the tool and encouraged them to ask questions. After participants completed the usability portion of the evaluation, we held a debriefing session to probe detailed feedback about the usability of the tool and the effectiveness of the information presented (See Side Bar for sample questions).

### Data Collection and Analysis

Each one-on-one evaluation session lasted between 40 to 80 minutes. The conversations were audio-recorded and transcribed, and written notes were made during the interview. Data from the interview were then coded to establish categories recurring in the evaluation session.

### Preliminary Findings

Overall, all participants found the tool to be easy and straightforward to use. Most participants we interviewed described DreamGigs as the stepping stone to reach their dream jobs. For example, one participant told us that “[DreamGigs] lets you know exactly what you need to do to become a fish and game warden. It lets you know the step by step that you must take to become this”.

### Identified skills help bridging the “skills gap”

All participants felt that that DreamGigs was accurate in identifying skills that they as job seekers need to gain in order to reach their career goals. Participants believed that the skills identified by the tool could “give you the knowledge that you need for the career that you’re choosing, [as well as] more insights on what the employer’s looking for and the skills for you to have.” Furthermore, while two participants thought that the identified skills validated their

current skills and career development, some participants (N = 3) pointed out that DreamGigs should also take users’ varying education and experience levels into account. They suggested categorizing skills based on difficulty and including instructions on how to use the tool.

### Intermediate occupations open the career options

Participants opined that most of the presented intermediate occupations could help them specify the direction and paths to obtain the skills they hoped to develop. Half of our participants (N = 4) felt the intermediate occupations gave them a range of possible options of what they could do, which encouraged them to explore more career opportunities. For example, one participant said “if [job seekers] get a chance to go through all of [the intermediate occupations], it can kinda broaden their mind like ‘Wow, there’s a lot of different jobs out here.’” However, some identified occupations were found to be in discord with their career goals. For example, a participant selected Janitors and Cleaners as the past job and Nurse Midwives as the dream job, yet Psychiatrist was presented as one of the intermediate occupations when the participant selected Medicine and Dentistry, Deductive Reasoning, and Active Listening as skills to develop.

### Job seekers like various opportunities to obtain skills

In addition, all of our participants expressed their high interests in volunteer opportunities. All participants considered volunteering helpful for obtaining the skills they need even if it is unpaid. Moreover, half of our participants (N = 4) suggested that DreamGigs should also incorporate education and training opportunities for job seekers to obtain skills.

### Conclusion and Next Steps

Our preliminary results suggest that DreamGigs helps job seekers: (1) identify potential pathways towards their career goals; (2) see available job opportunities and how to

reach these opportunities. Overall, DreamGigs is helpful for low-resource job seekers to understand employers' requirements and thus help to fill in the "skills gap", as well as to bridge the information gap about available opportunities. For future work, we plan to further improve the tool through: (1) refinement of the identified intermediate jobs that are more relevant to users' career goals, (2) incorporation of tutorials to support usability, (3) a new system of categorization of skill difficulty, (4) inclusion of local training opportunities and education programs. Furthermore, our findings reveal a desire for volunteerism as a method to acquire skills and build community, which we hope to investigate further going forward.

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