

“I get hives when I come on here”: Persisting Through Platform-Delivered Microaggressions on LinkedIn

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LinkedIn is central to salaried job search and professional networking. In a career development program for adults seeking upward socioeconomic mobility through middle-wage computing work, we aimed to use LinkedIn to find and develop new social ties. However, we could not use the platform for this purpose. Through a participatory research approach, we formed a research team with diverse positionalities to understand why LinkedIn was difficult to use and how it could be better for our program. We analyzed recorded walk-throughs and confirmed our findings with two years of ethnographic field notes and written reflections. Our findings demonstrate that LinkedIn’s embedded algorithms and interface design prioritize users with large networks who can afford a LinkedIn Premium subscription. We argue that such platform-embedded power differentials lead to platform-delivered microaggressions. Non-Premium users and users with small networks must endure microaggressions to participate in the salaried labor market. We argue the politics of LinkedIn as a platform are such that its embedded power differentials are beyond our control and unlikely to change. Therefore, we recommend sociotechnical coping and mitigation strategies for career development programs in lieu of design implications for LinkedIn or similar platforms. We contribute a detailed example of how a technology reinforces pre-existing privilege without users’ knowledge.

CCS Concepts: • **Human-centered computing** → **Empirical studies in HCI**.

Additional Key Words and Phrases: employment technologies; social networking; socioeconomic class

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1 Introduction

People may pursue and achieve upward socioeconomic mobility through salaried, middle-wage jobs. In the U.S. economy today, however, these middle-wage jobs are becoming scarce; the labor market is increasingly polarized between low-wage, hourly work and high-wage, salaried work [105]. This dichotomy is particularly pronounced in computing positions, where the labor market is divided between low-wage gig work on platforms such as Amazon Mechanical Turk and high-salary software engineering positions [66, 81, 97]. In all industries and across all wages, however, digital platforms are used to advertise open positions, to collect applications, and to evaluate candidates. These technologies were expected to democratize hiring, e.g., through removing dependence on personal networks [12, 93]. Sociology of work research finds these *digital labor market intermediaries* largely benefit employers [9, 97], increasing HR's ability to filter and sort high volumes of applications in pursuit of the "perfect" candidate to fill an open position [95]. LinkedIn is a platform at the center of this technological landscape, used pervasively in hiring for jobs across sectors and wage ranges [9, 114].

We are a research team investigating LinkedIn in the context of DataWorks, a work-training program housed at Georgia Tech that aims to develop the middle-wage computing workforce through a one-year term of full-time employment in data work. Program participants are called "Data Fellows." Part of the training at DataWorks is "Career Dev," a career development program to prepare Data Fellows, who are career transitioning from hourly-wage work, to find salaried, middle-wage roles following their term at DataWorks. In Career Dev, we intended to use LinkedIn to represent the Data Fellows' new career direction and to initiate new professional connections relevant to their career interests. LinkedIn appears to afford valuable access to bridging social capital [28, 40, 51] that could open doors for the Data Fellows' new career direction. However, we found LinkedIn difficult to use for the Data Fellows, many of whom were new users with few connections. Further, the Career Dev facilitator, with 500+ connections, had never encountered certain issues in her own experience with LinkedIn, e.g., Figure 1. These issues were consequential; we could not use LinkedIn as intended in Career Dev. We asked: *How can LinkedIn be better for career changers at DataWorks?*

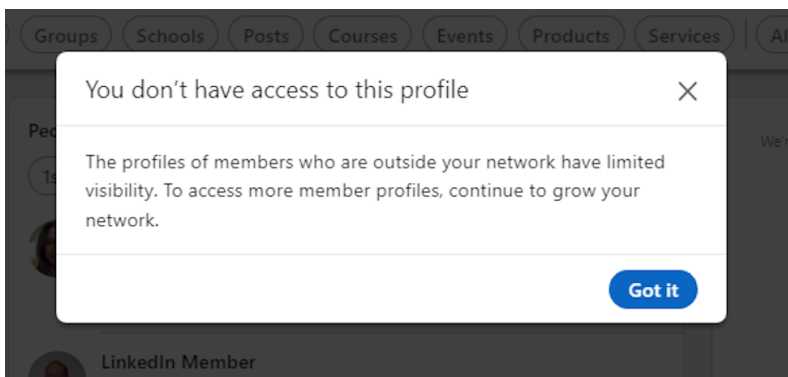


Fig. 1. When attempting to view certain profiles from search results, some DataWorks employees encountered this error blocking access to the profile. The Career Dev facilitator had never encountered this error. Such inconsistencies between user experiences were the primary motivation for this research.

We answered this question through a collective investigation into the details of *what* made LinkedIn so difficult to use and *how* to adapt our approach to make the platform more effective

for supporting career changers in our program. We used a first-person research methodology [39] to investigate the use of LinkedIn and other technology from first-hand experience while acknowledging, and building upon, the unique positionality of each researcher. These positionalities included the DataWorks employees, former technology industry workers, and researchers.

We found that LinkedIn does not support users developing social capital for upward socioeconomic mobility. Concrete aspects of the platform’s design prioritize users who can afford a LinkedIn Premium subscription and those with large pre-existing networks. LinkedIn’s educational resources may advertise, “You can connect with anyone on LinkedIn” [6], but we find this is untrue. Free users and those with small networks cannot access profiles without sharing a connection up to the 3rd degree¹. These inaccessible profiles nonetheless show up in search results (Figure 1, Figure 3). Further, users face invisible and unpredictable restrictions with regard to how they can contact another profile. Finally, users must navigate complexity as they develop a single, “findable” profile that meets platform norms.

These factors lead us to conclude that LinkedIn reinforces existing privileges through its algorithms and interface design. However, at DataWorks, we *must* use LinkedIn due to its pivotal role in the labor market. Moreover, we found DataWorks employees persisted and circumvented the platform’s features despite its shortcomings. Therefore, we conclude that LinkedIn *won’t* be better for career changers at DataWorks, but there may be ways communities and programs can help users cope with the platform to achieve their goals.

Our research extends the CSCW career development and entrepreneurship dialogue around the potential for technology to support upward socioeconomic mobility through fostering access to social capital [40, 68, 74, 75]. We contribute to this body of work an account of how the technical aspects of a platform can interfere with users’ ability to build social capital on a widely-used social networking site. Prior work identifies barriers faced by users from low-resource contexts and contributes insights into how platforms can be improved or into sociotechnical support systems [49, 49, 67, 69, 80, 85]. We contribute a critical in-depth analysis that consider platforms themselves as actors with their own interests [62, 130], with the power to *impede* users’ access to resources [73, 107]. Sociology of work scholars have called for such an investigation into the design details of digital labor market intermediaries [9, 114]. Our work provides a detailed example of how a platform’s technical features reinforce users’ existing privileges, exacerbating the current dynamics of a “winner-take-all” labor market [59].

We make several contributions to CSCW scholarship. First, we contribute a detailed account of how fundamental, technical design aspects of a workplace platform, LinkedIn, *impede* users’ ability to disclose help requests and build social capital. We introduce the conceptual framework *platform-embedded power differentials* leading to *platform-delivered microaggressions* to characterize how the platform prioritizes particular user groups [36]. Platform-embedded power-differentials [99] can exacerbate broader systemic inequities through persistent, subtle, and unintentional “slights” experienced by not-prioritized users [10, 117], or platform-delivered microaggressions. HCI researchers can use these concepts to explain the effects of embedded algorithms and interface design on the usability (or un-usability) of technologies among particular groups [44].

In our context at DataWorks, we do not have a choice whether or not to use LinkedIn, and we do not have the power to change LinkedIn. Our evidence suggests neither LinkedIn nor its role in the labor market will change in ways that benefit us. Therefore, in order to answer our question, *How can LinkedIn be better for career changers at DataWorks?* while remaining accountable to our local context, we abstract and elaborate on actions taken in our program to contribute sociotechnical

¹There are some exceptions that, while not transparent, we speculate to be Premium subscribers who choose to have their profile visible to all other users.

coping and mitigation strategies for career development programs to consider in their approach to LinkedIn. Finally, we contribute the seed for a participatory research approach that democratizes research agendas and embraces authentic insider researchers.

2 Background & Related Work

This review of background and related work highlights and complicates the potential for technology to facilitate socioeconomic mobility through career development. We build on sociology of work research to characterize LinkedIn as a *digital labor market intermediary* that actively shapes the labor market according to its interests [9, 97]. We review HCI research exploring how technologies can be improved to better support people in financially-constrained contexts, e.g. [40, 42, 68, 75], and question if technology improvements can be achieved given the power asymmetries present in employment platforms [97]. Finally, we review concerns specific to computing job search, characterizing the kinds of jobs relevant to our context at DataWorks as *middle-wage computing work* and highlighting the lack of research about such roles. This review of background and related work calls attention to the need for CSCW research that examines technology in middle-wage, salaried job search through approaches that consider the economic and political agendas of platforms [62].

2.1 LinkedIn as Digital Intermediary in a "Winner-take-all" Labor Market

Digital technology has fundamentally changed the nature of the labor market [13]. Intermediaries are the mechanisms through which employers find employees and vice versa. Historically, these intermediaries have been interpersonal contacts or newspaper advertisements [12, 65]. The new intermediaries are digital platforms, including job boards like Indeed, Monster.com, Career Builder, LinkedIn, and applicant tracking systems. These platforms allow employers to collect, filter, and sort high volumes of job applications, and they are used pervasively across all kinds of jobs [97]. With this volume of applicants, employers can be more and more specific about the candidate they aim to hire [25]. In this labor market, LinkedIn is an actor with agency, actively shaping the labor market according to its interests [9, 83, 114, 130].

Research in the sociology of work considers the effects these platforms have on the labor market, concluding the benefits are not for workers, but for employers and management [9, 97, 114]. To workers, a platform may appear to be a neutral party, but platforms “almost always have a financial relationship with the analyzing party that purchased the platform software or its analyses” [9]. This power asymmetry contributes to a “winner-take-all” labor market [59] where recruiters and hiring managers leverage platforms such as LinkedIn to focus on finding and courting currently employed, highly specialized talent that appear to be a perfect match for the requirements of an open position. McDonald et al. finds HR professionals indicate the rarity of such people with the phrase “purple squirrels”, while active or unemployed job seekers are increasingly stigmatized and “relegated to the hyper-competitive and impersonal ‘black hole’ of online job boards” [95].

Predictions about the effects of internet-based hiring on the labor market failed to foresee the side effects of technological innovations [15]. It was thought digital technologies would democratize hiring, for example, by lessening reliance on pre-existing networks and “old boys” clubs, they would make way for more skill-based evaluations and reduce the information-boundedness of previous labor markets [12, 93, 94]. Instead, employers now leverage techniques such as cybervetting to evaluate candidates based on factors such as appearance, presumed personality, and cultural fit [96, 109]. Moreover, digital platforms provide standardized data, allowing employers to screen applications using rigid criteria, raising their expectations for how precisely candidates match a role’s specification [9, 25, 97]. In turn, candidates must adhere to a rigid structure of self-presentation. Previously, resumes and cover letters could be customized per job application, allowing flexibility

in how one presents their career narrative. Now, a candidate must develop and maintain a *single* online presence that represents their qualifications to a variety of potential employers [61, 85, 114]. Ajunwa and Greene describe how such platforms "concretize social relations of coercion and consent," providing mechanisms to which workers have no choice but to comply. Such *platform authoritarianism* extends to deeper levels as algorithms shape the attitudes and behaviors of platform users without their knowledge [9, 100, 101]. Workers aim to avoid these rigid systems through personal referrals [65, 94, 95]; in the age of digital labor market intermediaries, "who you know remains as important as what you know" [61].

Digital labor market intermediaries introduce new equity concerns. Some research highlights the inability to use digital tools due to digital literacy requirements as one cause of inequity [37, 103]. Other research suggests platforms themselves introduce new mechanisms for re-producing existing discriminatory hiring practices. For example, recruiters and employers evaluate LinkedIn profiles in the initial stages of the application process [29, 61, 95, 114]. A LinkedIn profile includes applicants' photo, activity on the site, and network contacts. Research finds that the presence of profile photos can impact decision-making [57, 110], and evaluating the profile prompts recruiters to recommend job seekers based on "fit" rather than merit in the early stages of hiring [8, 29, 33, 114]. Further, LinkedIn requires workers to display their work history chronologically and on a single profile page. Any worker whose work history is not optimally displayed in these conditions is disadvantaged [114]. Such platform capabilities introduce new areas for systemic discrimination to be part of the hiring process.

Digital labor market intermediaries also contribute to a shift in how workers see themselves in relation to employers. Gershon describes how employees moved from a metaphor, "self-as-property," where resumes indicated a list of features "for rent" to a company, to "self-as-business," where workers now develop personal brands to market their skills and qualities as services [61]. Accordingly, workers embellish and curate their qualifications to advertise a compelling service that appeals to clients, i.e., potential employers [126]. Job seeking requires developing and maintaining a single, cohesive online brand that appeals to a myriad of audiences while fitting one's career narrative into the presentation standards dictated by platforms [114, 120]. In contrast to crafting a resume, cover letter, and submitting a job application for each position of interest, the goal for middle to high-wage salaried positions is to be "findable" by recruiters and potential employers, i.e., those who are hunting for "purple squirrels" using online platforms [95]. Otherwise, a job seeker's resume must stand out among the massive number of applications and make it through automated screening criteria [95, 114]. In this ecosystem, active job seekers on LinkedIn experience reduced self-efficacy [77]. Again, personal contacts remain critical for applicants who wish to stand out among many [61, 65, 94, 95].

CSCW research is well-positioned to build on and contribute to such critical perspectives on the technology-mediated labor market. Sociology of work scholars have called for research that illuminates the technical aspects of employment platforms that exacerbate power asymmetries [114] and how workers "cheat" them [9]. To our knowledge, however, little CSCW research seeks to understand how the designs of employment platforms shape the salaried labor market. Previous HCI research looks at job search and job search technologies, especially among low-wage job seekers, and identifies a myriad of ways technologies could better support job seekers [27, 41, 42, 46, 103]. This previous work engages with LinkedIn superficially and finds that, despite a cautious interest [103], low-wage job seekers do not identify with the "professional" nature of LinkedIn, that the platform assumes users have pre-existing professional networks, and that low-wage employers do not use LinkedIn for recruitment [43, 45, 85, 127]. Other HCI research considers how to interrupt the power asymmetries faced by low-wage hourly workers, gig workers, and data workers through sociotechnical configurations [48, 50, 73, 85]. While some CSCW research has considered social

class bias in job interviews [30, 32, 33], little research considers the suite of technologies involved in finding and procuring salaried employment to understand how these technologies may be designed in ways that exacerbate existing systemic discrimination. We contribute a step in this direction through a participatory research approach that provides detailed accounts of how job seekers transitioning from hourly wage employment to salaried roles experience LinkedIn. We bring together methodological approaches of CSCW with critical perspectives from sociology of work to demonstrate the potential for CSCW research to critically engage with how technology shapes workers' ability to find and procure salaried work in a "winner-take-all" labor market [59].

2.2 Social Networking Online and Upward Socioeconomic Mobility

Scholarship in the sociology of work presents a bleak outlook for workers in the age of digital labor market intermediaries [9, 61, 97, 114]. Yet, it may be unfair to dismiss LinkedIn's potential to benefit workers, including those from lower socioeconomic classes. Some studies suggest LinkedIn *can* increase workers' opportunities through informational benefits and the ability to broaden professional contacts [35, 119, 128]. Such benefits are consistent with research establishing technology's potential to support socioeconomic mobility through access to social capital [20, 40, 78]. Along with other forms of capital [21, 34, 78], social capital can bring about upward mobility when a social network contains heterogeneous ties that "bridge" social classes, providing access to new resources such as education and job opportunities [23, 28, 38, 51, 55, 64, 65, 93]. As a platform containing a massive, highly diverse, global network of employers and workers, LinkedIn envisions "creat[ing] economic opportunity for every member of the global workforce" by "connect[ing] the world's professionals to make them more productive and successful" [1]. LinkedIn could be a fruitful source of bridging social ties for those seeking upward socioeconomic mobility.

How technology can foster social capital for upward socioeconomic mobility is an active focus in CSCW research [40, 68, 75, 78]. Prior HCI research establishes that technologies designed in high-resource contexts may not be effective outside of high-resource contexts [44, 82, 111, 121]. These works contribute implications for technology design or sociotechnical support systems for technology to better serve people in low-resource contexts. In this vein, HCI scholars have explored technology use, design, and support among entrepreneurs [14, 67, 69, 71, 75, 80]. Offline and low-tech support systems are important to enabling entrepreneurs' technology use in low-resource contexts [44, 67, 71, 78]. On social media, these entrepreneurs face challenges disclosing resource needs due to a combination of privacy concerns, navigating platforms' invisible communication and cultural norms, and lack of trust [14, 68, 75]. Together, these factors amount to an experience using social media that is exhausting [14] and may be perceived psychologically unsafe [75]. Such concerns are consistent with studies that consider social media use in low-resource contexts outside of entrepreneurship [68, 74, 103, 122]. This body of work helps us understand how we could redesign, tweak, or workaround these platforms to facilitate upward socioeconomic mobility. However, if we consider the platform itself as an actor with power to control access to social capital for those seeking mobility [62], we can gain a more foundational understanding of 1) what place platform-actors have and should have, and 2) what kinds of interventions and changes can bring us closer to a different dynamic.

2.3 Computing Jobs and Upward Socioeconomic Mobility

Many people are attracted to computing careers for the economic benefits. However, prior research suggests significant barriers to entering the computing industry for people seeking upward socioeconomic mobility. Hiring practices in computing aim to weed out large quantities of candidates through esoteric technical interviews [16–18, 87], filtering resumes and displaying job openings according to obscure technical jargon [11, 131], and assessing "fit" according to upper-middle class

norms [31–33]. These barriers disproportionately affect people from minoritized groups [86], even producing new dynamics of social inequality among non-CS degree holders who enter the industry through alternative pathways [54, 132]. To “get ahead” through a computing job [38], bridging social capital spanning socioeconomic class is not sufficient. One must also find [47] and develop computing-specific bridging capital [123] in the face of exclusive stereotypes, toxic culture, and epistemic oppression that pervade computing communities [26, 90, 98, 106]. This prior work on employment in computing is focused on (CS) degree-holding workers who pursue high-wage roles in the tech sector. Middle-wage roles in computing – i.e., those that do not require university credentials but do require technical skills – are crucial stepping stones in upward socioeconomic mobility [60, 105]. However, little research in CSCW or computing education considers the wealth of middle-wage computing work occurring across sectors, e.g., administrative work, data work, graphic design, and IT support [52, 69, 79, 88, 108, 113]. While further research is needed to conceptualize middle-wage computing work, we contribute insights into how the hiring practices of high-wage tech sector employment constrain adults transitioning to salaried, middle-wage computing roles as they pursue upward socioeconomic mobility.

3 Context: Career Dev at DataWorks

The site of our investigation into LinkedIn is DataWorks. DataWorks is a data services provider housed at a university, Georgia Tech, that employs and trains adults with little technical background to do data work, including data entry, cleaning, and annotation for ML model training datasets. Georgia Tech initially funded the project, which launched at the beginning of 2020, to broaden participation in computing and as an outreach program for community organizations. Additional funding from the National Science Foundation enabled us to fund researchers embedded as trainers and resources in the program, allowing us to study all aspects of work at DataWorks.

DataWorks employees are full-time and paid approximately the median income for our city, Atlanta, Georgia, with university benefits. At any given time, the team consists of three to five people employed as Data Fellows, completing a one-year work-training program, and two managers, promoted from the Data Fellow position. Most employees do not have bachelor’s degrees and previously worked hourly wage jobs. One of DataWorks’ aims is to equip Data Fellows with one year of work experience and foundational data analysis skills, preparing them to find their next role in salaried, middle-wage computing work. DataWorks does not provide job placement for the Data Fellows; at the end of their one-year term, they are expected to find their next role on their own.

As a research platform, DataWorks provides researchers with access to everyday practices in a technology workplace and insights into workplace learning. Our access is predicated on the research team assisting with all aspects of projects, often training the Data Fellows on new tasks and developing curricula that can be used for future training. Unique to the project is the emerging role data workers have taken in the research activities; the frequent work and research collaborations have led to a blending of workers and researchers, with more senior employees moving into management and training roles and frequently assisting in developing and executing research projects. In this study, all current employees contributed to the research. DataWorks aims to promote autonomy and the voices of the DataWorks employees, which leads to employees’ position as co-researchers rather than participants [48].

The introduction of Career Dev to the DataWorks curriculum is an example of how DataWorks evolves in response to the Data Fellows. When the first cohort of Data Fellows were four months from the end of their term, they were given notice and told to start looking for jobs. They pushed back: “We don’t know how. You need to show us.” In response to this request, the program “Career Dev” and our research on career development began. At the time of this writing, Career Dev is beginning its third iteration, informed by the experiences of 15 Data Fellows across five cohorts.

The lead author founded and continues to facilitate Career Dev. As a software developer without formal CS education, her 10 years of experience with job seeking is the foundation for much of the Career Dev curriculum. Career advice from 12 guest speakers with several decades of combined industry career experience also informed the curriculum.

Career Dev consists of an ongoing, weekly 30-minute to 1-hour meeting with the facilitator and the Data Fellows. While the topics of meetings evolve according to the cohort of Data Fellows and what arises in discussion, there is a set curriculum that covers preparing job search materials, finding open positions, interviewing and interview preparation, professional networking and professional communication, and developing a career direction. In addition, Career Dev includes a series called “Career Chats,” where guest speakers with experience relevant to the Data Fellows career trajectories volunteer for a 1-hour, informal Q&A Zoom call with the Data Fellows. While informed by the lead author’s industry experience, from the onset, Career Dev is approached with a participatory design philosophy [48], encouraging the Data Fellows to react and change the curriculum. For example, the facilitator intended to stop Career Dev meetings after the Data Fellows began their job search, but the Data Fellows made it clear that the Career Dev meetings were still valuable, so we continued the meetings. Additional topics, unanticipated in the original curriculum design, continue to emerge.

Building on the facilitator’s and guest speakers’ job seeking experience, we intended to use LinkedIn as a key tool for Data Fellows to find people relevant to their career path to contact for informational interviews. We heard *only* positive anecdotal evidence about LinkedIn from Career Chat guest speakers and from the experience of the authors who previously worked in industry. However, when reflecting on themes from over two years of Career Dev and three iterations of the program with different cohorts, the facilitator recalled surprising instances where the workers could not use LinkedIn as planned, and it caused frustration. The experienced job seekers we heard from had never encountered these issues, and we sought to understand why the DataWorks employees did encounter them.

4 Methodology

All of the DataWorks employees mentioned in this text, both Data Fellows and managers, have contributed to this research and are included as co-authors on this article, excepting one Data Fellow who left DataWorks during this study. The DataWorks employees in this study are not traditional research participants, but rather participant-authors and collaborators. Graduate students and faculty co-develop several workshops and training with the workers, and Career Dev is one of these instances. Throughout this study, the workers actively volunteered their experiences and helped to investigate issues through screen-sharing and providing anecdotes outside of Career Dev meetings using Microsoft Teams and Zoom calls. Our research is approved by the Georgia Tech IRB, and DataWorks employees can decline to participate in research with no effect on their employment. All students, faculty, and DataWorks employees complete a training course in responsible research practices [4].

Inclusion of the employees as researchers is a shift in our work from participatory design practices, or second person perspectives [39, 115] that maintain a distinction between design and research practices [48, 76, 113], to a first-person research methodology. First-person research methods allowed us to investigate the use of LinkedIn and other technology from first-hand experience while acknowledging, and building upon, the unique positionality of each researcher. This approach provided authentic reflections from the team and prompted us to engage in a dialectic considering each researcher’s positionality in their experience with LinkedIn, similar to duoethnography [39, 112].

4.1 Positionality

We are a diverse research team of 11 people, 10 of whom are authors on this paper. We are from a wide range of working and middle-class backgrounds. Seven of us are full-time employees at DataWorks and four are part-time at DataWorks, holding research-specific positions at Georgia Tech. One DataWorks employee immigrated to the U.S. from Ethiopia, while all other employees were born in the U.S. Additional demographic information can be seen in Table 1.

The full-time DataWorks employees are a diverse group of adults pursuing upward socioeconomic mobility through salaried career advancement and learning computing skills. Managers at DataWorks are promoted from the Data Fellow position. Most DataWorks employees previously worked in hourly-wage roles, e.g., positions in package handling, service industry, construction, and retail. All of the DataWorks employees have completed high school, and two of them hold bachelor's degrees in a non-computing discipline. A few of the employees are also entrepreneurs, running small businesses in construction or cosmetology, for example. Several of the employees were involved in other workforce development programs, including computing-specific programs and certificate courses. Except for one employee – who started her LinkedIn account to promote her business – employees created their LinkedIn accounts through workforce development programs, including DataWorks. Only one employee is an active LinkedIn user. Some employees are skeptical of LinkedIn, believing it is "too much like social media" or that "some features seem exclusive," while others are optimistic, believing it is a vital tool for developing professional connections as they enter a new field. The full-time DataWorks employee with the most connections has 185, while the full-time employee with the least has nine connections.

Researchers in part-time DataWorks roles hold typical research positions at the Georgia Tech: two faculty and two Ph.D. students. None of the faculty or Ph.D. students hold computing-related undergraduate degrees, and all are employed in an HCI department. All worked in industry before pursuing doctoral study, and they are well-versed in the nuances of salaried job search. Both faculty members are established in engaged scholarship and community-centered approaches to HCI research. The faculty and Ph.D. students all have 500+ connections on LinkedIn and don't recall when they created their accounts. They use LinkedIn sporadically to accept new connections, occasionally publish career updates or promote their work, or initiate new connections primarily through LinkedIn's algorithmic recommendations. All of the faculty and PhD students in the research team have experienced being contacted repeatedly by recruiters on LinkedIn for roles that may have little to do with their expertise.

5 Methods

To better understand why some DataWorks employees encountered frustration and blocking issues using LinkedIn while others did not, the lead author met with the DataWorks project manager to discuss the research goals for this study. We arrived at the question: *How can LinkedIn be better for career changers at DataWorks?*

5.1 Data Collection

Our investigation is rooted in two years of ethnographic research by the lead author, who facilitates Career Dev. In addition to Career Dev meetings, the lead author attends regular DataWorks operational meetings and training sessions and holds one-off meetings with individual employees to troubleshoot and discuss Career Dev-related issues. Taken together, this amounts to over 150 hours of observation, which does not include asynchronous communication via Microsoft Teams and email.

Research Team Summary				
Name	DataWorks Role	Georgia Tech Role	Demographics	Connections
Brandon	Project Manager (FT)	Employee	M; Black; 30s-40s	35
Charlie	Training Manager (FT)	Employee	F; Black; 30s-40s	182
Jasmine	Data Fellow (FT)	Employee	F; Black; 30s-40s	185
Jake	Data Fellow (FT)	Employee	M; Black; 20s	31
Sara	Data Fellow (FT)	Employee	F; Black; 30s-40s	79
Marcus	Data Fellow (FT)	Employee	M; Black; 20s	147
Raymond	Data Fellow (FT)	Employee	M; Black; 50s	9
Rose	Career Dev Facilitator (PT)	Ph.D. Student	F; White; 30s-40s	500+
Researcher	Project Consultant (PT)	Ph.D. Student	F; Black; 20s	500+
Researcher	Co-Founder (PT)	Faculty	M; White; 50s	500+
Researcher	Co-Founder (PT)	Faculty	F; White; 50s	500+

Table 1. A summary of the research team demographics and roles at DataWorks and Georgia Tech (FT = full time; PT = part time). Names referenced throughout the paper are replaced with pseudonyms.

5.1.1 Video Walk-Throughs. The most surprising issues concerning LinkedIn happened during the section of Career Dev where the Data Fellows were guided to use LinkedIn to search for and message people of interest to their career. To gain a detailed look at the problems we encountered, we designed a walk-through that mimicked the task we aimed to complete in Career Dev but could not. The walk-through was facilitated by the lead author on a virtual call with each of the DataWorks full-time employees. Before the walk-through, employees were instructed to think about a search relevant to their career trajectory and to draft an introductory message requesting an informational interview. During the walk-throughs, the facilitator restated the task they were asked to do, and as they worked, provided guidance when they requested it or asked questions. Additionally, for employees who were stuck, e.g., “I don’t know where the connect button is,” the facilitator provided information based on her knowledge of the platform.

5.1.2 Ethnographic Field Notes. Following each weekly Career Dev session, the lead author recorded a summary of the session and any significant events or topics that arose between sessions. To gather the instances related to LinkedIn, the lead author distilled the notes to mentions of LinkedIn. She moved these excerpts from the notes to a spreadsheet for analysis, where each entry contained the excerpt related to LinkedIn and additional contextual information.

5.1.3 DataWorks Employees’ Reflections. To confirm findings from the analysis of the walk-throughs and the ethnographic notes, the employees individually reflected on their overall experience and recommendations for LinkedIn. These reflections were in response to questions such as their ideas about LinkedIn and what they think LinkedIn does successfully or not.

5.2 Data Analysis

The analysis for this paper spanned four months and consisted of three phases. Apart from the lead author, different members of the research team were involved in each phase.

5.2.1 Phase One: Establish the Need for Video Walk-Throughs. First, the lead author open-coded the LinkedIn-related ethnographic notes and discussed the themes with the last author and the DataWorks project manager in separate meetings. The lead author then worked with DataWorks employees to understand details of issues with the LinkedIn interface. The lead author collected these issues and presented them for feedback and discussion to the research team.

From these discussions, it became clear that we needed more detail on the variations in Data Fellows' experiences with LinkedIn. To document these variations, the lead author and all DataWorks employees (the five Data Fellows and two managers) conducted the walk-throughs, reproducing in detail the interactions on LinkedIn to perform a core Career Dev task: *find someone relevant to their career interests and contact them to request an informational interview*. During the walk-throughs, employees reflected on and interpreted their experience in relation to our driving goal: how to improve the LinkedIn experience.

5.2.2 Phase Two: Code Video Walk-Through Recordings. The lead and second authors analyzed the walk-through video recordings through three rounds of qualitative coding over two months. Initially, they watched the videos together, recording interaction moments and timestamps in a spreadsheet to determine the unit of analysis. The first round of coding produced a "Task" codebook that categorized video interactions into tasks and subtasks under the goal of contacting someone to request an informational interview. The second round of coding involved deductive coding, using an initial codebook adapted from Davis' Mechanisms and Conditions as an organizing framework [36] to describe the platform's response to each "Task." The third round of coding involved identifying a feature set associated with the platform's response. The authors reconciled their interpretations and came to agreement.

5.2.3 Phase Three: Triangulate Coding Results with Reflections and Field Notes. Finally, to incorporate the results of our qualitative analysis of the walk-throughs with the data from the ethnographic notes and reflections from the DataWorks employees, we completed a final phase of analysis using updated field notes, which now contained an additional three months of notes collected during the analysis period. The lead and second authors engaged in a sorting exercise, where the ethnographic note excerpts were printed on slips of paper and divided between each person. The first and second authors individually sorted the printed notes. They each presented the categories they found, and agreed on a list of themes and tensions/paradoxes that described the data. Next, the lead author created a slide presentation that reviewed the in-progress analysis, incorporating the language of tensions and "mixed signals." She presented this to the research team to solicit feedback. Finally, the Data Fellows authored written reflections and the lead author compared these with the tensions presented in the meeting. The outcome of the analysis was shaped to address themes in the reflections that were not already present in the findings. The final presentation of the findings was reviewed with the remainder of the research team.

6 Findings

To answer our guiding research question, *How can LinkedIn be better for career changers at DataWorks?*, we look holistically at themes from the video walk-throughs, bringing in context from the ethnographic field notes, the DataWorks employees' reflections, and directed interrogations of the platform mechanics. We focus our findings on the technical features of LinkedIn that made it challenging for the Data Fellows to achieve their career development goals.

6.1 Users Without Premium Face Invisible and Unpredictable Restrictions

LinkedIn Premium simultaneously enhances the platform for subscribers and impairs the platform for free (non-paying) users. While users without Premium may be familiar with paywalls and changing interfaces on other social media platforms, on LinkedIn we find that, not only are capabilities provided to Premium users, but there is an active effort to frustrate free users. These moments of frustration are used to promote the Premium services, resulting in a frustrating and unpredictable experience for free users.

LinkedIn aggressively advertises free trials of LinkedIn Premium through various avenues on the site. It does little to communicate the value, or cost², of a Premium membership beyond vague claims³. In the walk-throughs, advertisements for LinkedIn Premium were often encountered as a paywall blocking free users' ability to message other users (Figure 2). However, the appearance of the paywall was unpredictable; sometimes clicking "Message" *did* bring up the option to send a message⁴. However, all DataWorks employees experienced the paywall multiple times when they tried to contact new people by clicking "Message," the most prominent button on many profiles. The only way to privately contact to a profile without a "Message" is to "Connect" and "Add a note." We found this feature to be an insufficient alternative, rife with its own inconsistencies.

Profile settings include the ability to customize which buttons display at the top of the profile. Profiles typically display two primary buttons: a blue one and a white one. Depending on profile settings, the content of these buttons changes, and may be a combination of "Message," "Connect," or "Follow." All three features pose very different stakes to users. We found that variable locations and lack of understanding of the differences between these options resulted in a frustrating and unpredictable user experience.

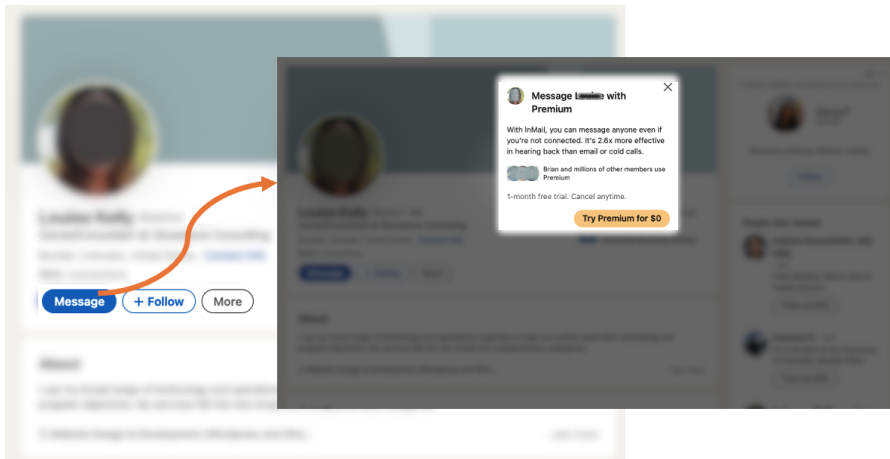


Fig. 2. Clicking the blue "Message" button brings up a paywall on many LinkedIn profiles, but a "free InMail" message on others.

²A the time of our research, the [LinkedIn Premium website](#) contained encouragements to sign up for a free trial, and did not indicate pricing. From other online resources, we found the cost ranges from \$30-100 per month.

³These include claims such as, "accelerate your job search" or "Messaging with Premium is 4.6 times more effective than email."

⁴In our investigation of LinkedIn features, we learned this might result from a LinkedIn Premium feature called "Open Profile" that, if a Premium user opts in, allows a profile to be messaged by any user.

6.1.1 Message Paywall and Button Placement. In the walk-throughs, DataWorks employees were asked to perform a high-stakes task: engage in professional networking by requesting an informational interview with someone they do not know [68]. All DataWorks employees who intended to perform the task sought to "Message" first, which would allow them to explain their request and develop trust with a new person before initiating a lasting connection. Typically, this resulted in a paywall, which suggests that LinkedIn anticipates users' desire to "Message" before connecting and leverages users' frustration to encourage signing up for a free Premium trial. The invisibility of when the paywall would or would not appear and the inconsistent button placement made an already challenging and uncomfortable task more difficult.

Brandon explains the awkwardness he felt after his only option was to "Connect" when messaging was unavailable due to the paywall:

Brandon: "I think it's kind of weird to, like, connect with someone you haven't even spoken with yet. Just like, [...] if I didn't know you, and I just follow you, and I just send you something random, you can either be like, 'Who was this person? I don't know them. I'm fittin' to block him from my network of friends.'"

Brandon was skeptical of contacting someone he did not know and grasped the stakes of sending a message that came off negatively; one wrong message could result in never making a connection.

Charlie experienced confusion as a result of a Premium users' profile settings. Some users may completely hide the "Message" or "Connect" button and instead display a "Follow" button most prominently. After mustering the courage to contact a Netflix recruiter, Charlie knew to try to use the "Connect" feature to contact this person. However, the "Connect" button was missing:

Charlie: "So you just message...[clicks "Message", paywall appears]...Oh, he's Premium so I guess the way to get around that is you can ask...[looks for "Connect"; it's not there]...you can't...there's not even a Connect option with him...is it because he's Premium?"

We found one instance where a DataWorks employee could message a profile without an "Open Profile" and with whom they were not connected. Marcus was planning to apply to a job in the Georgia Tech IT department, and he located the profile of someone employed there. When he clicked "Message" on the profile, a dialog appeared that indicated, "You both work at Georgia Tech." Marcus was able to send a message through this feature, but later, the first two authors – also employees at Georgia Tech – were unable to replicate this within-institution messaging capability. This is typical of our overall experience researching LinkedIn. The interface is constantly changing in subtle ways, perhaps through A/B testing, algorithmic decisions, or general platform updates.

While users may be familiar with changing interfaces on other social media platforms, the burden of continually re-learning or finding new ways to navigate the interface for job seekers who are *also* learning the norms and techniques of professional networking makes the task even more daunting.

6.1.2 "Connect with Note" Cannot Substitute for "Message". When "Message" is paywall-protected, the alternative is to privately contact an unconnected account through "Connect" and "Add a note." The LinkedIn Learning course about LinkedIn emphasizes the importance of including a *short* note containing details on "why you want to connect, where you know them from, or how you provide value to their network" [7]. Rose, the facilitator, was unaware the text area for adding a note enforced a character limit when she instructed the DataWorks employees to craft their introductory message ahead of the sessions. Sometimes the text area limited the messages to 200 characters, other times 300 characters. The DataWorks employees' messages, which included carefully thought-out details as suggested in the LinkedIn video, exceeded the character limit on the "Connect" with note

feature, and they were forced to undergo laborious and frustrating editing to reduce the length of their messages (Figure 4).

Both Charlie and Brandon were forced to undergo such editing, and they would likely not have persisted outside the call with Rose. Brandon expressed the frustration of condensing his pre-written message:

Brandon: “Uh... that sucked. Havin’ to go through [that] to add a note that’s less than 200 [characters], which means I would still need the Premium version to send more even if I didn’t want to connect to them.”

Again, Brandon indicates that he wants to send a message *before* committing to initiating a connection. The platform does not allow this. Brandon is forced to meet the platform demands to directly connect with someone he does not know.

Charlie prepared a carefully thought out message inquiring as to what level of programming skills are needed before applying to software developer roles. After first attempting to “Message” and hitting the paywall, Rose directed Charlie to where the “Connect” option had been hidden in a dropdown menu due to a user setting. Charlie pasted in her pre-written message, which was 542 characters, more than 300 characters over the limit. After a few minutes editing her message in the tiny message dialog, Charlie accidentally clicked out of the dialog. The message was lost. She looked for a drafts feature before continuing editing, and then abandoned the task due to the time requirement and frustration:

Charlie: “Would it be in my drafts, maybe? No? Is there a drafts option? (with sarcasm) Oh, that’s fine.”

[Charlie clicks around the profile somewhat nervously, Follows/Unfollows the profile]

Charlie: “Okay, let’s try this... Oh no, I don’t want to do that, they’re gonna be like who is this person that keeps following and unfollowing..”

[Rose describes where to find the Connect option again; Charlie resumes editing for 2 minutes]

Charlie: “‘I’m new to the tech field and have worked in the data’... let’s call it ‘sector’... take out ‘also have been learning Python and Java’ ... let’s go with ‘coffee chat’ because it’s shorter,[...] Yeah, I, this is challenging. I mean, I cut off like 150 characters but I don’t know where I’m gonna cut from here. Unless I just go straight into the ‘Hey, can I get a chat with you?’”

[Charlie edits for 1 more minute; abandons the task when she still has 73 characters to cut]

Charlie’s frustration around the task was palpable, and Rose felt uncomfortable asking her to go through such an ordeal to send a message without guaranteeing a response. It was clear Charlie would not have gone through with this outside of the walk-through call. The lack of a drafts feature further suggests the “Connect with Note” feature is not designed to support thoughtfully drafted introductions, despite encouragement in the LinkedIn course. DataWorks employees put in the work to write such a message, and the platform did not allow them to send it [36].

There were many other ways that LinkedIn’s options for leaving a note were confusing and inconsistent. This is in contrast to Rose’s experiences on LinkedIn. With a free account, but with over 500 connections, Rose was not limited in the number of people she could ask to “Connect with Note,” and her character minimum was 300, not 200. We will explore the significance of this profile variation in Section 6.2.2.

6.2 Users are Required to Already Have a Network to Grow Their Network

The DataWorks employees who completed the walk-through task with the least friction contacted people with whom they were already connected. Those who tried to find and contact *new* people had the most difficulty. LinkedIn marketing and training materials claim one can “build relationships to explore career paths,” and “connect with anyone on LinkedIn” [6]. However, we find LinkedIn actively restricts users with small networks from finding and contacting new people on the platform, requiring them to have a network to grow their network [38, 40, 51].

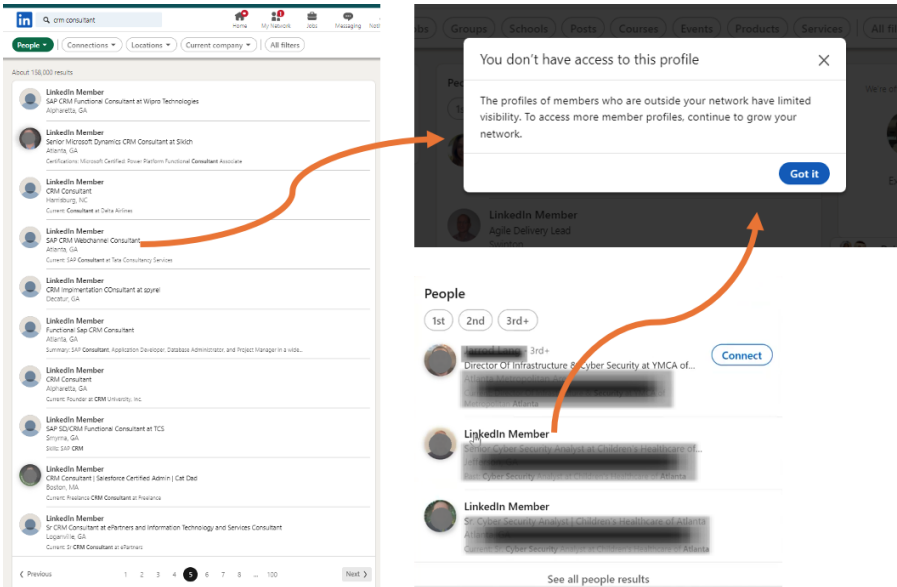


Fig. 3. Search results are obscured and profiles inaccessible depending on the size of a user’s network.

6.2.1 Inaccessible Profiles Appear in Search Results. LinkedIn blocks access to profiles that appear in search results based on a user’s connections. In one Career Dev weekly session, Jake had been searching for someone to contact about a career in eSports. When he clicked several results from the search, he received an error in a dialog blocking access to the profile (Figure 3).

Initially, we interpreted this as a minimum connections requirement, but were unable to find any indication of what the minimum might be. Jake and Rose met over Zoom to investigate the issue. They realized profiles were inaccessible when the current user’s network *does not* share up to a third-degree connection with the profile. However, this too was inconsistent: *some* profiles with no shared connection were still accessible through search⁵. Rose, with 500+ LinkedIn connections compared to Jake’s 31, could view many profiles Jake could not. Jake described the effect of this mechanic, “I guess it’s about being found by the ‘right’ people.” Jake’s comment indicated his awareness of the sociopolitical dynamics at play on LinkedIn and his position within them. This mechanic prevents users from developing social ties outside existing networks, i.e., bridging social capital [28, 40, 51]. LinkedIn requires users to already have a critical mass of *relevant* connections before they can benefit from a core feature on the site: search. Even if a user has a large network, if they are not the “right” connections, they will not be able to access new profiles through search.

⁵We believe some profiles without shared connections are visible in search due to a LinkedIn Premium membership, but we weren’t able to verify this without signing up for Premium.

6.2.2 Subtle Interface Details Preference Well-Connected Users. Through subtle interface design choices and targeted limitations, LinkedIn actively creates more difficult and frustrating experiences for those with smaller networks who aim to connect with new people. For example, in some “Connect with Note” interfaces, LinkedIn includes the help text, “Build a quality network by connecting only with people you know,” and the “Connect” button on some profiles includes a qualifier: “Connect if you know each other.” Since “Connect” might be the only available method to contact a new profile, this messaging may discourage users from utilizing the “Connect” feature to contact new people, ultimately limiting the platform’s effectiveness for developing new professional connections.

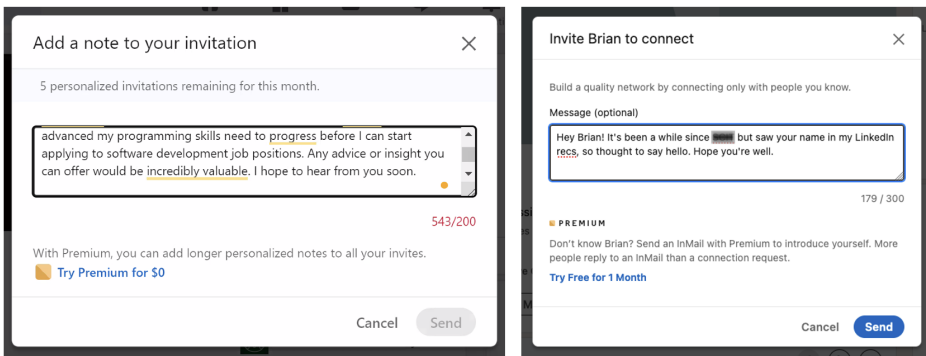


Fig. 4. The “Connect with Note” feature is an example of how LinkedIn’s features can preference users with existing social capital. The left is Charlie’s pre-written introductory message exceeding the character limit with an additional limit on “personalized invitations.” The right is the facilitator’s brief message requesting a connection to someone she already knows, which easily fit within the character limit.

To capitalize on moments of frustration, LinkedIn algorithmically targets Premium advertisements and limitations through the “Connect with Note” feature. For example, from some parts of the interface, the “Connect” button does not bring up the option to “Add a note,” and users cannot add “Add a note” retroactively; they must wait three weeks to withdraw and re-send the connection request (Figure 5). Recall from Section 6.1.2, “Connect with Note” is the only option for sending a private message when “Message” is paywall protected (which is typical for free users). The “Add a Note” dialog on multiple DataWorks employees’ accounts limited the number of “personalized invitations” per month (Figure 4) which restricts the number of notes a user can send per month. However, for users with larger networks, such as Rose’s, the limitation was not present⁶. Without transparency around LinkedIn’s algorithmic decision-making [101, 104], we do not know what logic is built into the platform.

6.3 Making a Profile “Findable” is Complex and Culturally-Subjective

A “findable” LinkedIn profile is one way job seekers can make themselves known to recruiters [61, 95]. A “findable” profile is complete, up-to-date, keyword-optimized, and aligns with cultural norms on the platform [114]. Guest speakers in DataWorks’ “Career Chats” cited personal experiences of being discovered by current or previous employers through LinkedIn. One speaker stressed the need for visibility: “Update your LinkedIn account – make it easy for someone to find you.” McDonald et al. find that the *act* of updating a profile makes it findable. LinkedIn Premium subscribers

⁶This was our experience at the time of the research. Months later, Rose also started to see a limit on “personalized invitations.”

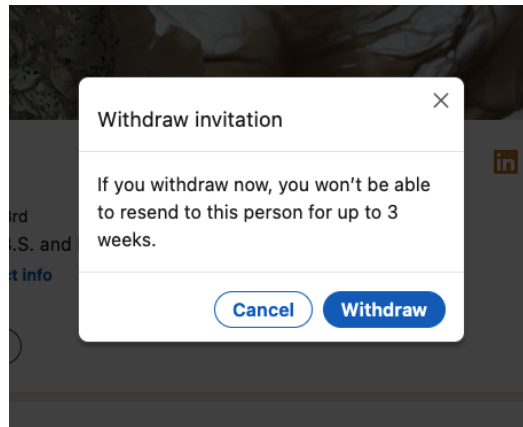


Fig. 5. Connection requests sent from the mobile interface do not give an option to add a note. If a connection request is sent without a note, users must wait three weeks to re-send the request with a note.

(who are often recruiters), can search for recently updated profiles [95]. We found, however, that profile content may prompt unintended consequences, and keeping a profile up to date involves sophisticated strategy and knowledge of unspoken norms, technical jargon, and industry trends [11, 31, 123].

6.3.1 Irrelevant Job Recommendations. A LinkedIn profile’s content can impact the job search experience through algorithmic recommendations [61]. Multiple DataWorks employees complained about the irrelevance of LinkedIn’s job recommendations. For career changers, current job titles and past job searches may be unrelated to future aspirations, but this content affected algorithmic recommendations. Moreover, a keyword-optimized profile related to their aspirations did not reliably lead to better job recommendations. The technical jargon for middle-wage computing jobs may not be distinguishable from technical jargon in high-wage jobs. For example, Marcus was recommended a Data Scientist role at Uber. DataWorks does not prepare Data Fellows for this sort of role, but some keywords overlap with how Marcus described and embellished his experience at DataWorks in alignment with platform norms [61]. The culture of profile embellishment and keyword optimization affect the recommendations users receive. Even if the recommendations contain the same terminology, they may be otherwise unsuitable for the users’ qualifications or needs [77, 126].

6.3.2 One Embellished Profile for Many Audiences. Challenges with self-presentation echo the challenge of designing a single profile to appeal to multiple audiences. The challenges inherent in designing a single profile to appeal to multiple audiences are well established in research about LinkedIn and social media [85, 92, 114]. At DataWorks, Data Fellows develop a foundational data skillset that can serve them in many career directions. While they may be able to customize their resume and cover letter according to a particular direction, e.g., highlighting budgeting experience vs. programming experience for a financial analyst role, there is only *one* version of their LinkedIn profile [114].

In one Career Dev session, Sara asked, “What should the version of our resume be on LinkedIn?” Sara had been presenting – or performing – different selves through different versions of her resume, but on LinkedIn, she could present only one self. One cannot appeal to multiple audiences simultaneously without undergoing significant labor and stress [63]. We are not aware of any

LinkedIn features to refine self-presentations for different audiences. In her walk-through, Sara expressed fear about contacting a recruiter she met in-person before she could perfect her profile:

Sara: “Should I be waiting a little bit [to send a first message]? [...] Because if they asked me a question where “Okay, what do you know about this? What do you know about that?” [...] I can’t even tell them [about my] full job description at this point. I’m learning.”

This singular presentation favors those with established careers who have a narrow career focus. For someone pursuing a new career direction, like Sara, profile embellishment is difficult and the stakes are high. Sara fears that if her profile indicates she knows a topic and she does not to the degree expected, she could be called out and shamed. The platform only supports representing her embellished self, not her other self: a learner.

We heard anecdotes from guest speakers that a LinkedIn profile should reflect *who you want to be*, not *who you are*. This may require shedding one’s prior identities. One guest speaker shared the reality of updating his LinkedIn profile during a coding boot camp [118]. He was instructed by the boot camp career coach to remove a decade of prior work experience, and he shared this was extremely uncomfortable and felt like misrepresentation. However, after some time, he saw the embellishments as evidence to himself of who he was trying to become.

6.4 Persisting Despite Platform Limitations

It was clear most – if not all – the DataWorks employees would *not* have completed the walk-through task outside of the call with Rose. At the beginning of her walk-through, Charlie commented:

Charlie: “I’m not well versed in LinkedIn because I actually get hives any time I come on here...”

Charlie’s comment summarized most DataWorks employees’ feelings about using LinkedIn, yet, employees spent over 20 minutes completing the walk-through task. In this section, we describe evidence of what led – and could lead – the DataWorks employees to persist in using LinkedIn, despite its frustrating experience.

6.4.1 Strategic Workarounds. We have identified ways LinkedIn activity prevents users from developing new relationships using the platform. Despite these issues, we saw DataWorks employees innovating approaches to work around limitations. For example, Jake referenced profiles’ “Contact Info” area to find alternative platforms to contact someone. Sara worked around profile visibility and recognition issues by initiating connection requests in-person, at the time of meeting at an event. Finally, in keeping with past work on introductory help requests [72], Marcus leveraged ChatGPT to assist in writing his message in the appropriate tone for LinkedIn.

Jasmine, the most active LinkedIn user prior to starting at DataWorks, grew her network on LinkedIn without relying on shared connections or “Connect with Note.” She did not consider “Connect with Note” an appropriate first contact, and she did not follow Rose’s leading prompt to use it after she hit the “Message” paywall. Jasmine uses a different approach:

Jasmine: “I feel like people will remember you more from, like, interacting on posts, rather than just sending a note. Or it adds more value if you’re [...] interacting with their posts and engaging with them, like, right, it’s not so weird, just sending a note. [...] If you can interact and have a back and forth, in the comment section with a person, like, I feel like more comfortable with that, versus just sending a note.”

Through post interactions and comments, Jasmine establishes her profile as a familiar face to the person with whom she seeks to develop a relationship. Jasmine’s techniques align with research describing post interactions as small talk in online social networking and an indication of trust

[22, 89]. Small interactions allow her to develop trust with others on LinkedIn *and* circumvent its restrictions.

6.4.2 Cautious Optimism. Hui et al. find people from low-income communities convey both skepticism and cautious optimism around online social networking [68]. We found evidence of both among DataWorks employees. While they had reviewed how to do the task in prior Career Dev sessions, for many of the DataWorks employees, the walk-through was the first time they acted on it. In Marcus' words, it "got the rust off." Raymond, the newest to LinkedIn among the DataWorks employees, was the most skeptical about reaching out to a new person:

Raymond: "I'm skeptical about everything. So if somebody was to [...] come at me like that, I'd be like 'you crazy?!' [chuckles] [...] Are people [...] willing to share information without [...], like, without being a friend of a friend?"

After Rose explained the culture of informational interviews, Raymond decided to proceed. He understood the risk and the potential reward, and he was open to trying it. However, he was not logged in to his account and had to troubleshoot login issues for almost 30 minutes. Finally, he typed "cybersecurity" in the search bar, scrolled through the results – most of which were posts in a feed – and decided to look at one post author's profile:

Raymond: "So basically what I would do is just look at – So the author, maybe? He looks like he gets paid to talk! [...] Oh, 'free career advice'. How about that?"

Rose: "Yeah, sounds like what we're talking about." [chuckles]

Raymond: "What are the chances of that?! Okay. He's got a lot of followers...uh. He's a book writer. And he's an author. He does a lot. [...] He's very busy. He doesn't really have a whole lot of education. I don't know... throw me in, Rose? What do you think? What, what's going on here?"

In the end, Raymond did not contact anyone due to the time it took to navigate the login issues. However, his openness to logging into LinkedIn and proceeding with the walk-through suggests he would have sent a message to someone if he'd had more time on the call with Rose. Raymond's walk-through is an example of how navigating LinkedIn for a new user involves not only functional use of the platform, but also digesting previously unheard of professional personas. Cautious optimism, and a guide, can motivate users to sift through new information and technical issues to complete tasks related to their career goals.

6.4.3 Sociopolitical Awareness. DataWorks employees identified the sociopolitical dynamics of LinkedIn, e.g., its economic interests and the perceived status of people who use LinkedIn. Charlie, for example, described LinkedIn's interests concerning job seekers:

Charlie: "They really just want you to buy Premium. [Which] to me, takes away from, like, a good honest job search, that you're trying to capitalize off my job search."

Several DataWorks employees made similar remarks, e.g., indicating awareness of the cultural specificity around "professional" or that people on LinkedIn are of a different "nature" than other people in their lives. Although Rose may have had more experience using LinkedIn, the DataWorks employees demonstrated a greater awareness of sociopolitical themes that LinkedIn as a platform enacted.

6.4.4 Persisting Only for Research. The DataWorks employees participated in the walk-throughs as part of the Career Dev sessions *and* as a collaborative investigation of LinkedIn for research. The research goals, along with Rose's presence, contributed to DataWorks employees' willingness to persist through difficulties using the platform. A research perspective transformed difficulties into productive data collection; hitting a paywall was producing data for the research. Brandon,

for example, in talking through his efforts, thought aloud, “If I message...do I get” and “let’s try another...” These comments indicated his perspective was one of curiosity and interest, looking for patterns in the platform experience rather than interpreting the paywall with frustration or as dismissal. We also found instances where Rose offered to be done with the walk-throughs, but DataWorks employees opted to continue to produce more data for the research.

Being a co-researcher motivated the DataWorks employees to use the platform despite its technical limitations and frustrating user experience. During the walk-throughs, the DataWorks employees aimed to accomplish a task for their career development *and* they interrogated the platform to produce data for the research. This allowed us to understand the platform nuances and develop workarounds, but it also suggested that our experience may not represent that of other users of LinkedIn. While most of the DataWorks employees completed the task, the frustration caused by the platform likely would have caused more to quit sooner.

7 Discussion

Our findings reveal how features of the LinkedIn design overtly limit platform functionality for users who lack the financial capital to purchase a Premium subscription and the social capital to access certain profiles, i.e., a pre-existing professional network on LinkedIn. These features may be invisible or appear innocuous to users with large LinkedIn networks, such as the facilitator. For the DataWorks employees, however, they caused confusion, second-guessing, or the need to contemplate and implement workarounds. These difficulties reflect how broader societal tensions surrounding job search are embedded within LinkedIn as a technical artifact. In our discussion, we bring our findings into conversation with related work, using a power-aware lens [99] to interpret our experience with LinkedIn.

7.1 Platform-Embedded Power Differentials Lead to Platform-Delivered Microaggressions

Platforms have the power to prioritize some user groups and requirements over others [36, 62]. Like Amazon Mechanical Turk does not prioritize the needs of workers [73], we find that LinkedIn does not prioritize the needs of people seeking to develop heterogeneous social networks as they as they pursue upward socioeconomic mobility through career change. The platform dynamics are such that LinkedIn actively *impedes* some users’ ability to accomplish their goals. [Ajunwa and Greene](#) describe LinkedIn’s focus on its own goal:

“LinkedIn does not just design a box for data freely submitted to them, they actively court the participation of large hirers and headhunters in service of their mission to create an ‘economic graph’ of the global labor market.”

LinkedIn prioritizes the needs of users who pay to access this “economic graph,” e.g., hiring personnel aiming to find and woo the elusive, currently employed, highly-sought-after “purple squirrels” [95]. Our findings demonstrate this comes at a cost to “trustworthy operation” for other user groups [19]. When users are treated differently or have trust-breaching experiences on LinkedIn, this creates and exacerbates *power differentials* between users [99].

7.1.1 Platform-Embedded Power Differentials. Power differentials are manifestations of broader systemic inequities that privilege people with more power [99]. The term platform-embedded power differentials describes how a platform’s technical design empowers some user groups and disadvantages others. For example, previous research [78, 89] suggests people, especially those from historically minoritized communities, seek to establish trust [40] before “becoming a friend.” In our study, participants sought to establish trust through a message before committing to a relationship, i.e., a LinkedIn connection. However, LinkedIn restricts the messaging feature to Premium members

and to those with pre-established networks. When a user without these privileges is frustrated by LinkedIn’s embedded power differential, e.g., the need for a Premium subscription to “Message,” they are asked to pay (Figure 2). Since they had not invested in Premium membership, DataWorks employees were hindered from using LinkedIn to comfortably broker [24] the various forms of capital essential to socioeconomic mobility [21, 34, 40, 123]. In another example, LinkedIn provides pre-made DEI-related cover photos. This feature does not make the platform itself inclusive (Figure 6), but it is a means for users to signal their alignment with DEI objectives [124]. Others have raised the issue of LinkedIn treating some users differently than others [43, 56, 91], however, our work identifies how the creation and exacerbation of power differentials are forms of technological discrimination.

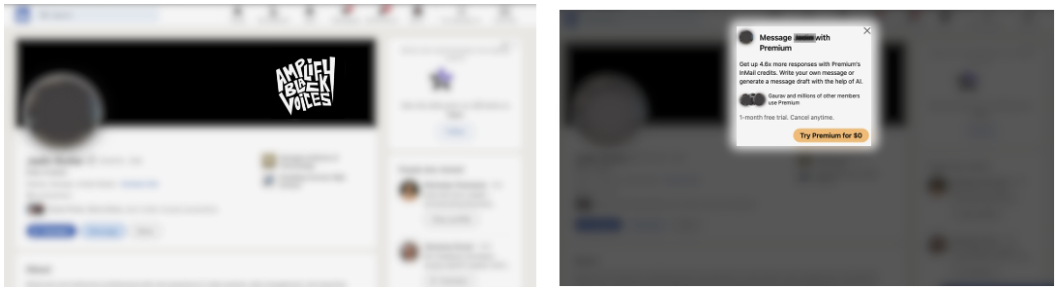


Fig. 6. An example of a *platform-embedded power differential* leading to a *platform-delivered microaggression*: A profile displays one of LinkedIn’s provided DEI-signaling cover photos to “Amplify Black Voices.” When a user without a connection to the profile clicks “Message,” they will be blocked by the paywall *unless* the profile is both a Premium subscriber and has enabled “Open Profile,” allowing any user the ability to message.

We are not naive; LinkedIn is a for-profit company. Small design decisions optimize for the experience of paying users and increasing investor returns. However, the resulting technology creates a silently expanding chasm(s) between user group experiences [36, 44]. This is not unlike the nature of filter bubbles, which create drastically different user experiences based on accumulated data from each user [102]. Much like “death by a thousand paper cuts,” these moments of frustration with a platform add up, not only limiting the value for not-prioritized users, but delivering persistent, “subtle slights” that cumulatively hinder well-being and self-efficacy for users based on their existing privileges [117]. When the platform in question is a key intermediary between job seekers and jobs [114], every poor experience on the platform has direct implications for job seekers’ ability to pursue upward socioeconomic mobility.

7.1.2 Platform-Delivered Microaggressions. We use the term *microaggression* to describe how platform-embedded power differentials interfere with users’ goals on the platform. Microaggressions are subtle, frequent, intentional or unintentional slights experienced by people with non-dominant identities in society [116, 117, 129]. While most literature considers the occurrences of microaggressions as the act of individuals, microaggressions can also be seen as structural, where there are underlying mechanisms that cause them [10].

The term microaggression aptly describes the slights against DataWorks employees delivered by LinkedIn. These slights are subtle, active choices embedded into the platform that target not-prioritized users. As our findings and review of related work suggest, these slights cumulatively reduce users’ ability or willingness to use the platform, which research suggests will reduce their ability to secure employment [61, 114]. Consider the following examples:

- Charlie’s comment upon logging in, “I get hives when I come on here”: she used *hives* to describe the persistent discomfort she experiences on the platform.
- Jake’s comment, “I guess it’s about being found by the ‘right’ people,” as he is denied access to viewing a profile that appeared in search results (Figure 3).
- Carefully locating a profile of interest, mustering up the courage to click “Message” (the most prominently displayed button), and receiving a paywall blocking access (Figure 2).
- Intending to follow the LinkedIn Learning course’s recommendation to “Add a Note” when requesting to connect with a new person, but after clicking “Connect” from a mobile phone, the request is sent, and there was no option to add a note. When attempting to add a note retroactively, the user is informed they must withdraw the request and wait three weeks to re-send it with a note (Figure 5).

In each example, the DataWorks employee or LinkedIn user may experience a pang of frustration or embarrassment, chipping away at their sense of belonging on both LinkedIn and in the career field they aim to join. To make matters more urgent, someone cannot simply choose *not* to use LinkedIn. Using the lens of platform authoritarianism [9], we can say that these users *do not have a choice* but to continue using the platform in the way it demands because “if you are not on LinkedIn you are invisible” [114].

This means not-prioritized users – i.e., those who cannot afford LinkedIn Premium and those with small pre-existing networks – *must* endure such microaggressions to participate in the labor market. These not-prioritized users may include unemployed people, active job seekers, new LinkedIn users, or any person who wants to be “findable” online but lacks the culture- and industry-specific knowledge needed to effectively do so [61, 95, 114]. Given that people with few connections on LinkedIn are less likely to come from a family or academic background privileging them with existing, relevant social capital, we argue platform-delivered slights are microaggressions because they disproportionately effect people with less generational privilege, making it more difficult for them to participate in the labor market.

Future work could consider the extent to which platform-delivered microaggressions affect people from differing identities and if they constitute forms of silencing or epistemic violence against people from minoritized groups [53, 56, 58]. We acknowledge it is unlikely that LinkedIn product managers, designers, and developers intentionally design features to exacerbate power differentials; we emphasize that microaggressions are characterized as unintentional and symptomatic of broader systems of inequity [10].

7.2 Sociotechnical Coping and Mitigation Strategies for Career Development Programs

Instead of contributing recommendations for improvements to LinkedIn’s design, we look towards coping and mitigation strategies to make LinkedIn better for career changers at DataWorks. LinkedIn remains a critical tool in Career Dev. At the time of this writing, we are beginning our third iteration of Career Dev for a new cohort of Data Fellows. We have no choice but to use LinkedIn; there are no alternative technologies, and the power asymmetries in digital labor market intermediaries are such that job seeker-focused recommendations for improving the design of LinkedIn are unlikely to be realized [9, 97, 114]. We take inspiration from sociology of work scholars’ call to explore how LinkedIn users “cheat” the platform to nonetheless benefit from it [9] and join other HCI scholars who have incorporated social and low-tech solutions in their responses to technical problems [49, 67, 69, 80].

7.2.1 Education for Sociopolitical Awareness of Platform Interests. Our findings and related literature suggest such sociopolitical awareness education should build on participants’ existing sociopolitical awareness (e.g., Section 6.4.3) to explain platform-embedded power differentials and identify

platform-delivered microaggressions as they occur, making explicit the need to conform to – or intentionally reject [91] – white-American professional norms on the platform [14, 61]. Education should focus on awareness of LinkedIn’s agenda [9], who LinkedIn Premium is designed for [95], and who it is not designed for [114]. We further encourage programs to use the language we use in this paper, including terms such as “platform authoritarianism,” “black holes,” “purple squirrels” [95], and terms we introduce including “platform-embedded power differential” and “platform-embedded microaggression” to describe the expected experience using LinkedIn. Education should explain the conundrums one will face on LinkedIn, namely the consequences of profile pictures in hiring evaluations, the challenge of conforming to a single-page profile [85, 114], and the notion of “self-as-business” in today’s job market [61]. Job seekers should be able to scrutinize others’ profiles to reverse engineer how they may have been embellished, especially for computing-related positions. Within computing, and especially in a program such as DataWorks, an unusual kind of computing position, special attention should be paid to learning technical jargon, when and when not to use it to describe one’s work, and to critically look at LinkedIn’s algorithmic recommendations.

7.2.2 Offline and Low-Tech Support and Resource Exchange. Prior scholarship establishes that offline interactions are important for building trust, disclosing resource requests, and facilitating technology and social media use among low-resource entrepreneurs and communities [44, 67, 68, 74, 103]. In the “self-as-business” metaphor to describe job seekers in today’s labor market [61], the technology use expected of a job seeker is not unlike the expectations of an entrepreneur. Especially for computing positions, job seekers are expected to display their projects on a website, post content related to their work and learning, and frame their qualifications as services with revenue impact on their LinkedIn profile [61, 114].

Tech support is one strategy for coping with platform-embedded power differentials. Rose, the facilitator, provided encouragement and could step in when the DataWorks employees encountered issues. Recent HCI work has contributed models for such tech support among entrepreneurs including a help desk model [80] and a community tech workers model [69, 70]. Such models could be implemented in career development programs, for example, where high school students are employed to provide tech support and, in exchange, are exposed to tactics for navigating the labor market and to different career pathways [70]. Alternatively, a help desk or support line for computing challenges in job search and personal branding could be similarly useful, and echoes work identifying the relational role of workforce development professionals and employment centers [27, 42]. In Career Dev, we have found success leveraging a “communal perspective on resource exchange” [68] that also involves peer support. Examples from our approach related to LinkedIn include:

- Group chat and shared folder where program members post links and collect past members’ LinkedIn profile content and resumes for reference.
- LinkedIn working sessions wherein members share challenges and successes with the platform, enabling them to collectively address platform-delivered microaggressions as they arise.
- Attend meetups and conferences as a group, initiating new LinkedIn connections in-person at the events and sharing these connections with others in the program.

Although in-person events may have their own limitations, meeting someone in-person can both establish trust and bypass LinkedIn’s profile visibility restrictions. Further, research finds hosting and attending educational events is a “middle-ground” recruiting practice [95]. Career fairs are popular on college campuses, but inaccessible to workers who navigate the salaried job market outside of a university context. Professional events could do more to support job seekers through

career fairs to counteract the “black hole” nature of job applications and to increase visibility of job seekers new to the salaried labor market [95].

7.2.3 Scaffolding Profile Building and Platform Use. Hui et al. recommend approaching social networking online slowly in order to build trust with the platform [68]. In hindsight, our initial approach to LinkedIn in Career Dev was flawed. DataWorks employees were rushed into using LinkedIn to perform a high-risk task: disclosing help requests to complete strangers. In the learning sciences, scaffolding refers to providing support to learners so they can accomplish a task they may not be able to do independently [125]. Scaffolding is one way to more slowly introduce using LinkedIn with lower stakes.

Based on improvements to our approach in Career Dev, we recommend career development programs mitigate the platform-embedded power differentials on LinkedIn by scaffolding platform use and profile creation. For example:

- Provide boilerplate profile content that can be customized and improved upon over time, including an opportunity to take LinkedIn profile photos [114].
- Provide a list of pre-vetted, well-connected profiles who know about the program and will accept connection requests from people in the program. This will expand access to other profiles in search.
- Create and share content on an organization page, which can be a lower-risk way to practice publishing content before publishing to one’s own profile.

7.2.4 Dominant Users’ Behavior Change. Choices made by Premium subscribers and well-connected users on LinkedIn can shape the experience of users who are not prioritized by the platform. The following are examples of choices LinkedIn users can make that have direct impacts on the experience of not-prioritized users:

- Consider the cost of ignoring/declining connection requests from unknown people; on LinkedIn, users must already have a network to grow a network (Section 6.2).
- Consider including an email address or other online profiles in “Contact Info” for people who are seeking career direction but unable to message due to the paywall (Section 6.1).
- Actively posting content or inviting people to interact with content can create opportunities for new users to gain visibility and familiarity with the platform (Section 6.4.1).

These suggestions may require trade-offs. For example, adding an email to the “Contact Info” section could signal “neediness” to recruiters [61], and published content is subject to surveillance by employers on LinkedIn [114].

7.3 Reciprocal Capacity Building through a Participatory Research Approach

Our perception of LinkedIn in Career Dev evolved from blind confidence in the platform to a lens of sensitivity to its underlying power dynamics. Rose, the Career Dev facilitator, and other members of the research team with large LinkedIn networks would not have been able to understand the platform in this level of detail without a participatory research approach that brought in the DataWorks employees as co-researchers. We see this as an example of *reciprocal capacity building* at DataWorks between the team members employed in research-specific positions, e.g., faculty and Ph.D. students, and the full-time DataWorks employees. Hui et al. describe reciprocal capacity building: “when two or more stakeholders leverage care and empathy to support the mutual building of skills and strengths together” [70]. In the case of Career Dev, Rose leveraged care and empathy to look closely at the issues DataWorks employees faced when they did not reflect her own experience. She provided technical support, encouragement, and shared in the frustration. The DataWorks employees leveraged care and empathy to support research, devoting their time, attention, and

energy to participate in fact-finding, issue reporting, and persisting through LinkedIn-delivered microaggressions as they contributed to the research.

These exchanges built the capacity of DataWorks overall in several ways. First, Career Dev now takes a much more robust and reliable approach to introducing and using LinkedIn. Next, the research team members with large pre-existing networks can see issues on the platform they would never have encountered. Finally, this project built DataWorks’ capacity to integrate research activities further into the DataWorks employee experience. As HCI scholars move towards more community-engaged approaches to research and design, we share Israni et al.’s suspicion around the limits of information reported in interviews due to class-based stigma [75]. Our work suggests that bringing community members into research as collaborators in contexts rooted in care, empathy, and material benefits, e.g., co-authorship, job recommendations or resume items, or payment [84], is one way to approach this limitation.

7.4 Implications for CSCW Research

We contribute a detailed example of how existing class-based privileges and disadvantages are reinforced through technical infrastructure (Figure 7). LinkedIn controls access to important resources for upward socioeconomic mobility, such as new professional connections and information needed to enter and navigate a new career field. Career changers seeking upward socioeconomic mobility through career transition *must* use LinkedIn to access resources and meet employer expectations [114], and there are no alternative platforms [9, 97]. This dynamic limits career changers’ ability to accumulate bridging social capital that is vital to upward socioeconomic mobility [28, 40, 51]. Career changers without pre-existing relevant social capital are further limited by LinkedIn’s technical features, while career changers who already have access to relevant social capital experience increased access. Coping with the LinkedIn user experience and mitigating its negative effects are additional labors required of career changers seeking upward socioeconomic mobility [14, 61].

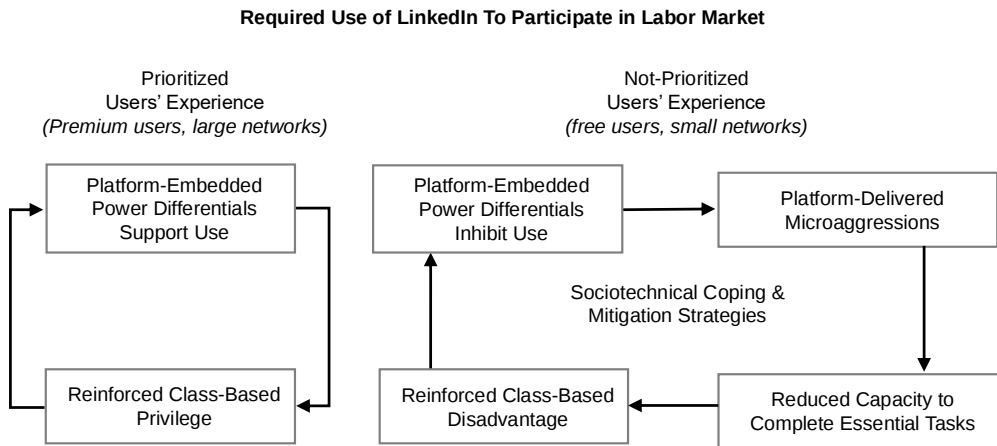


Fig. 7. On LinkedIn, a platform required to participate in the labor market, platform-embedded power differentials leading to platform-delivered microaggressions reinforce class-based privileges and disadvantages. Programs can manage the effects of this cycle for not-prioritized users through sociotechnical coping and mitigation strategies.

LinkedIn is an example of how technology can reinforce privileges. It was not one or two isolated interactions on LinkedIn, but multiple interactions that created repeated, frustrating experiences for

disadvantaged (not-prioritized) users while leaving privileged (prioritized) users unaware of their privilege. While it is understood that companies are profit-driven, it is still the case that people often do not have a choice about whether or not to use their products [9]. Many users rely on platforms that, without their knowledge, discriminate against some users while amplifying the privilege of others [131]. We suspect if researchers scrutinize other technologies in the way we have done with LinkedIn, more instances of technologies quietly, systematically reinforcing privilege will emerge. CSCW researchers are positioned to identify how current technologies perpetuate systemic privilege and discrimination, and to assist with optimizing the design of future technologies with issues of equity in mind.

8 Limitations

We did not subscribe to and test LinkedIn Premium. We did not speak with any representatives of LinkedIn as part of this research, excepting one LinkedIn Coach [5] meeting which provided insight into how to better use LinkedIn in the Career Dev meetings. This conversation was not part of the data considered in this paper. Further, there was some evidence of informational benefits to using LinkedIn that we did not review as they were out of the scope of exploring the embedded power differentials in the user interaction.

We are viewing LinkedIn in a culturally-situated American context, specific to the goals of DataWorks, in the context of the kinds of jobs and networking we discuss in Career Dev. While we expect that researchers will find these themes apply to other contexts, we do not claim our experiences with LinkedIn are universal. The CSCW community's understanding of this space would benefit from iterating on our study with different groups of people and contexts to see the extent to which our findings manifest in other settings.

We characterize our participatory research approach with reciprocal capacity building. However, a limitation in this claim is the power dynamics between Rose (who is white and in a Ph.D. program) and the full-time DataWorks employees (all of whom are Black Americans and/or people of color, most of whom do not hold a bachelor's degree). Instances that appeared to be willingness to contribute to the research based on empathy could also be explained by consciously or unconsciously perceived power asymmetry between Rose and the DataWorks employees. We did not see evidence of such asymmetry in our data. Further, the DataWorks program has a history of employees demonstrating refusal to participate in data projects they felt were unethical [48], and all DataWorks employees are trained in ethical research practices. However, the systemic and invisible nature of class-based and race-based oppression means the influence of our identities on our research claims is an inherent limitation of our work.

9 Conclusion

LinkedIn is a platform central to participation in the salaried labor market. In a workplace career development program for adults transitioning to middle-wage, salaried computing careers, we found LinkedIn difficult to use in ways that surprised the program facilitator. Using a participatory research approach, we formed a research team consisting of the workers, the program facilitator, and other researchers to investigate *why* LinkedIn was difficult to use for some members of the research team, but not for others. In our analysis of recorded video walk-throughs, two years of ethnographic notes, and written reflections from the workers, we found technical features in LinkedIn that privilege already privileged users and limit platform functionality for less privileged users. LinkedIn's technical infrastructure reinforces class-based privileges by requiring non-Premium users and users with small networks to endure LinkedIn-delivered microaggressions. We contribute the conceptual framework *platform-embedded power differentials* leading to *platform-delivered microaggressions* to describe how platforms reinforce systemic privileges. In lieu of design implications for LinkedIn,

we contribute practical sociotechnical coping and mitigation strategies for career development programs to better support people with small networks and free LinkedIn accounts during their career transition.

We are aware for-profit platforms will prioritize users who can pay, but de-prioritized users often do not have a choice about which platforms they use. This work contributes a detailed example of how platforms embed existing systems of privilege and discrimination, the conceptual tools to articulate these dynamics, and practical recommendations to address them in a career development context.

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A LinkedIn Feature Descriptions

This appendix contains general descriptions of LinkedIn's primary features and functionality at the time of writing.

A.1 User Profile

On a LinkedIn profile, users are encouraged to add an 'About' blurb, upload a headshot, and detail their current and past work experiences. Profiles can also include recommendations and endorsements for skills linked to past roles, functioning as a resume with additional details. Users can also add a cover photo, and institutional affiliations are displayed at the top right of the profile.

On a LinkedIn profile, users are prompted to add an "About" blurb, a headshot, and information related to current and past work experience. Profiles can also include recommendations and endorsements for skills or performance in past roles. The user profile functions like a resume with more comprehensive information. Users can also add a cover photo and institutional affiliations feature prominently on the top right of the profile.

A.2 Connect

LinkedIn users build their "professional network" by accumulating connections. Like a Facebook friend, a connection's posted content and profile updates will be shown in the LinkedIn news feed. Connections can be removed, but this is a hidden feature in the interface. Additionally, a user can view and search a list of their connections. Users connect with the "Connect" button which typically displays below the profile picture, but the location can be customized according to user preferences.

The "Connect" button, when clicked from a user's profile, gives the user an option to "Add a note" or "Send without note". Once "Add a note" is selected, the user can add a note within a character

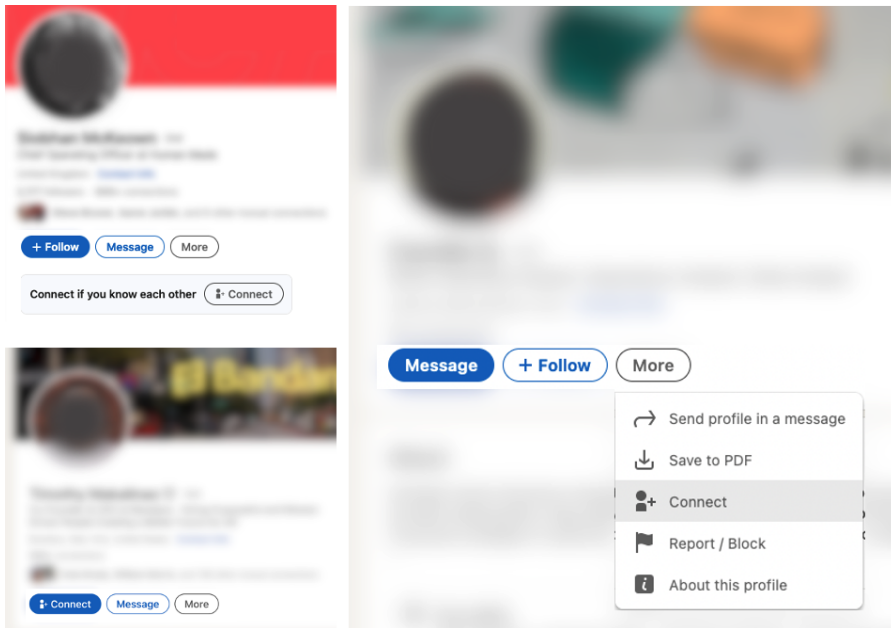


Fig. 8. The various locations of the Connect button on a user profile.

limit, and may be notified of restrictions on the number of “personalized invitations” they can add [8]. Once the user chooses an option, the connection request is sent. The option to “Add a note” appears only when clicking “Connect” from the locations on a user profile. The Connect button appears in other locations on the site according to a mixture of algorithmic parameters and profile preferences, e.g., Premium subscribers can move or hide the “Connect” button, and in Search results listing profiles, some results show “Connect,” while others show “Follow” or “Message”. Non-Premium users can use a Setting to “Make Follow primary”, where the default location of the “Connect” button is replaced by a “Follow” button, and “Connect” is moved to the “More” menu (Figure 8).

A.3 Message (Native, InMail, or Paywall)

Connected LinkedIn members can message one another without restrictions using the native message dialog, like direct messaging on other social media platforms. For users who have not “Connected” with each other, clicking the message button results in a paywall with one exception. When a Premium subscriber has enabled “Open Profile”, any user, including free users, can send a message using “free InMail”. “InMail” is a LinkedIn Premium feature that is more like email than the native messaging, containing space for a subject line and a larger dialog for text. The native messaging uses a smaller dialog, appearing to support briefer correspondence.

Like the “Connect” button, the “Message” button is displayed in a variety of contexts within the LinkedIn interface. Unlike “Connect,” however, the message button never appears inside the “More” menu, to our knowledge. It is also on the Search Results page within some profile listings. Sometimes the message button is the first one listed on a profile and it is blue. Sometimes it is second to a Follow indication and it is an outline. It appears the location of the message button can also be customized for LinkedIn Premium members. If it is available, clicking the message button from a profile can result in InMail Message or can result in Paywall. As far as we are able to tell, it is not possible to determine which one will show up.

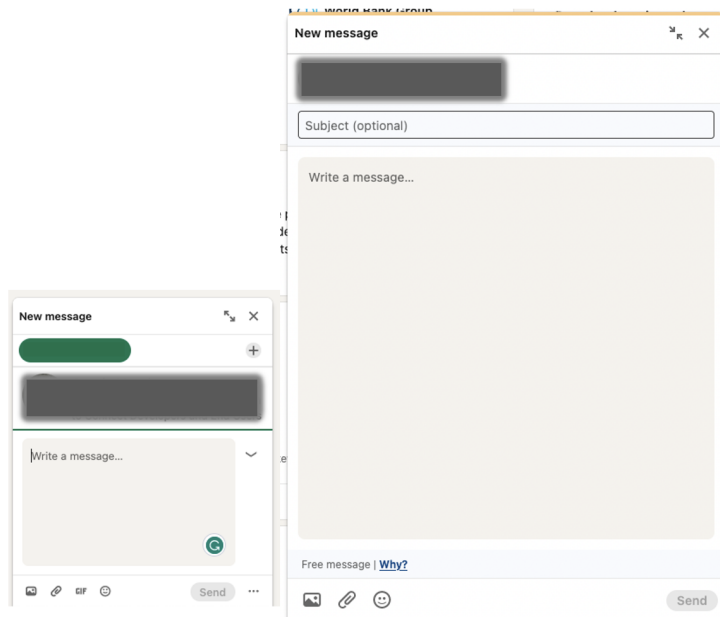


Fig. 9. Both message dialogs appear from the bottom of the screen. The native message (left) is smaller and multiple recipients can be added, while the InMail is more like email to a specific person, with more space encouraging longer text (right).

A.4 Search, Search Filters, and Autocomplete

At the top left of the LinkedIn screen in the browser version of the interface is a text search. When users enter text query, autocomplete offers possible search queries from a wide range of LinkedIn content. After entering a query, users can refine their search using filters. A text search initially shows results from different areas of content, and users can refine their search by filtering for a specific kind of content, e.g., jobs, posts, or people. Additional filter options exist for each kind of content. For example, when doing a text search for “Jobs,” a user can filter by remote, hybrid, or onsite. When filtering for people, users can filter by their degrees of connection, e.g., 1st, 2nd, 3rd+.

A.5 Recommended Connections

The LinkedIn interface algorithmically recommends connection in multiple parts of the interface. Primarily, these are on another person’s profile in the “People You May Know” and “People also viewed” sections, appearing on the side of and beneath profile content.

A.6 Company Page

Many organizations have their own page on LinkedIn. On the company page, LinkedIn prominently displays statistics about the people associated with the organization, e.g., alumni for a university’s page. While the exact content sections in a company page are determined either by user preferences or algorithms, it also may display selected people affiliated with the organization or content published.

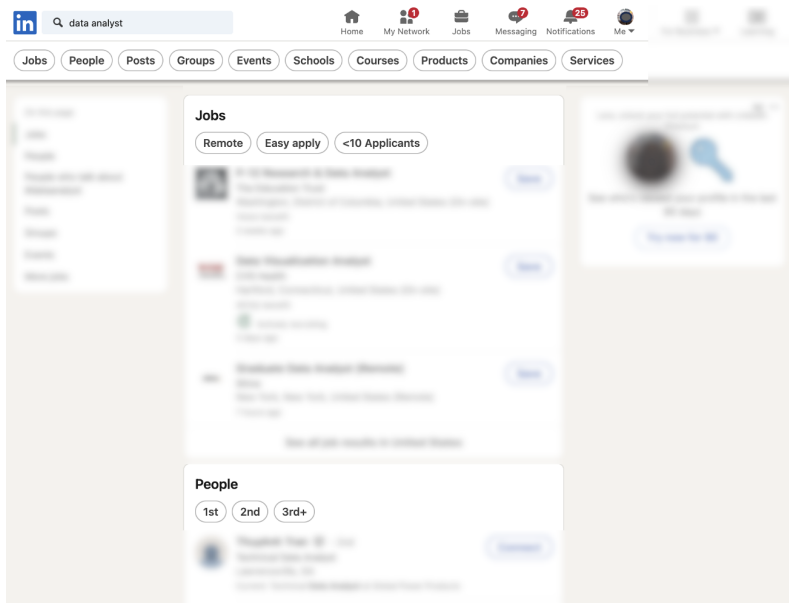


Fig. 10. The search interface provides filter options and displays different categories of content according to the search.

A.7 Jobs

LinkedIn contains job listings. These can be searched using the text search and refined using the filters. Job postings are affiliated with a company page and, when viewing a single job post, they may also include reference to a user profile who is affiliated with hiring. This profile often contains a “Message” button, but like other areas on the site, this is also likely to result in a paywall for free users.

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