Social Matching Systems for Research Collaboration: A Profile Page Design for University Faculty

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ABSTRACT

Social matching systems, while popular for dating and platonic connections, can also play a role in the workplace, particularly for initiating collaborations between professionals from traditionally disparate fields of practice. In this paper we present a profile page design to support university faculty in self-presenting to nonacademic partners in their local community for collaborative research opportunities, as informed by a focus group study. We then discuss preliminary insight from a survey to faculty prompting them to create their profile page and provide feedback on its design. The created profiles indicate that faculty embrace profile pictures as tools for conveying their expertise and resources rather than their physical appearance. Furthermore, functionality to link the profiles of users who are currently working together should be considered as a way to convey combined collaboration potential.

KEYWORDS

Social matching; collaboration; profile page; impression management; academia; research

Self-Presentation Needs and Concerns of Faculty for a Social Matching System for Collaboration

- **Faculty want to convey a willingness to accommodate** communication barriers and constraints of non-academic partners.
- **Faculty anticipate viewers of their profile having a predetermined research need**, and they consider the profile a tool for viewers to identify faculty for further discussion about collaboration; it's not a final decision point.
- **Some faculty are concerned about bias** regarding traits unrelated to expertise (e.g., ethnicity), but also preconceived notions about which fields are appropriate for particular research methods or topics.
- **Faculty want to avoid being contacted about inapplicable collaborations.** They want to emphasize two types of information to non-academic partners to help them assess fit:

1. **Research expertise that is understandable to non-academics**. Some faculty wanted to omit standard signals of their expertise like publications because esoteric terminology may alienate non-academic partners.
2. **Resources available for collaboration**, such as lab equipment and student researchers. This information can increase their appeal, while implying which opportunities they do not qualify for due to resource demands.

INTRODUCTION

Technologies that support collaborators in doing groupwork (e.g., video conferencing, cloud storage, real-time word processing) have had an undeniable impact on professional life. Yet technologies intended to initiate new collaborations—or *opportunities* for groupwork—are still relatively sparse. Such technologies have the potential to connect traditionally disparate or siloed communities of practice [8] and facilitate interdisciplinary contributions. Researchers in academia are one professional demographic especially poised to benefit from such technology. Professional self-presentation of academic researchers—often through scholarly writing [2]—is steeped in the norms of research communities [3,4,6], such as niche terminology, pedagogy, and writing styles reinforced by publication venues. While these norms enable rich dialogue within in a given field [1], they may alienate professionals from other communities who otherwise have common interests, visions, and goals—as well as shareable resources such as funding, data, labor, and unique skillsets.

When considering technologies that can initiate "cross-community" professional collaborations, social matching systems are an ideal candidate given their purpose of connecting people to people [5,7]. Yet this context of social matching poses unique challenges for system design in regard to the aforementioned communication silos and professional self-presentation norms, which can limit interpretability across traditionally disparate fields. This paper explores how social matching systems can be designed for collaboration by presenting a prototypical profile page for academic researchers to self-present to non-academic potential collaborators, along with design principles underlying the profile page, as informed by a focus group study. Preliminary insights from a survey prompting academic researchers to create their profile page are also discussed.

CREATING A SOCIAL MATCHING SYSTEM FOR COLLABORATION

The work presented in this paper reflects a university-wide initiative to connect our institution with the local geographic community (e.g., local companies, non-profit organizations, government entities) to foster a climate where data is rich and collaboratively generated, and research projects are germane to community interests and issues, therefore making collaboration mutually beneficial. A cornerstone of this initiative is a social matching system called *Oakland Counts*, which intends to connect university faculty with entities in the community for immediate research collaborations and ultimately, long-term working relationships. Components of the system include profile pages for university faculty, profile pages for partners outside of the university, and a "needs-based" method of user discovery/matching (displaying relevant profiles in response to a particular research need or initiative). We are focused on populating the system with faculty profiles first, due to positive reception to the system's concept during departmental meetings and ease of access to faculty to inform system design. Once the system is populated with "early adopting" faculty, local community partners will be recruited based on their apparent relevance to existing faculty profiles for a beta test and to inform the profile page design for non-academic entities.
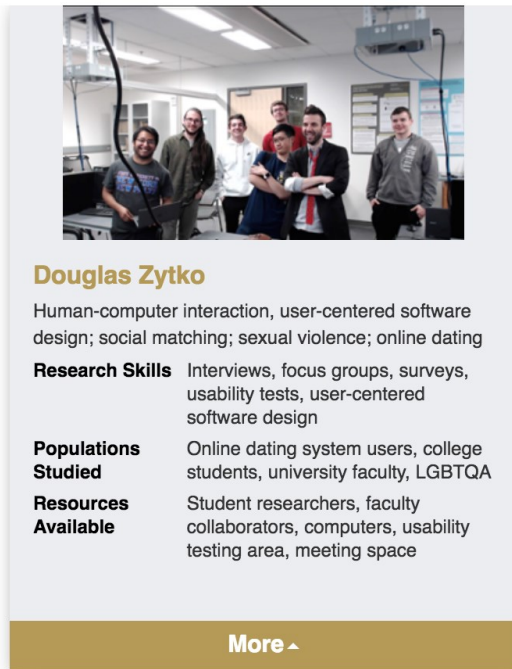
Figure 1: An example profile page for university faculty

Profile picture: The user uploaded a picture that conveys lab space and student researchers as resources they can offer to a collaboration.

Headline: The user employed this field to emphasize key research topics that do not neatly fall into the subsequent fields.

Research Skills: The user listed methods they are skilled in, avoiding esoteric terms that professionals from other fields might misunderstand.

UNDERSTANDING SELF-PRESENTATION NEEDS OF FACULTY

To inform a profile page design for university faculty, we conducted a focus group with 10 faculty (5 female) who had recently participated in research development seminars. The faculty represented a variety of departments such as Computer Science, Physics, Biological Sciences, and Nursing. During the focus group, faculty discussed their self-presentation needs and concerns for their profile page in *Oakland Counts*. The focus group was audio-recorded, transcribed, and open-coded. A summary of findings is in the previous page's sidebar.

A PROFILE PAGE DESIGN FOR UNIVERSITY FACULTY

From the focus group insight we generated design principles to serve as the basis for a prototypical profile page: **(1) Balance uniqueness with uniformity**. How can we have a consistent profile design that supports rapid comparison of collaboration potential, while also accommodating variability in users' backgrounds and expertise? **(2) Reduce opportunities for bias.** We considered how to limit prompts for information unrelated to collaboration, and how to enable users to omit information susceptible to bias without making the profile look empty. **(3) The profile is the first of many decision points.** We conceptualized the profile as a way to help community partners identify faculty for one-to-one interaction to further assess collaboration fit; it is not a final decision point.

The design principles led to our initial profile page design, which is exemplified in the side bar on this and the next page. Components of the profile page are as follows:

Profile picture: Users are prompted to include a picture that showcases collaboration potential rather than just physical appearance. This enables users to avoid potential bias related to their appearance if they have that concern, and gives users the freedom to express their expertise and resources in visually appealing ways.

Name: We include a user's full name, but exclude identifiers related to department/school. This choice intends to focus assessment of collaboration potential on faculty's individual research skills and resources, and not broad preconceived notions around the department in which they work. We include dedicated sections for **Research Skills**, **Populations Studied**, and **Resources Available** to structure presentation of collaboration potential in a way that is independent of department, and consistently conveyed across profiles to enable rapid comparison of possible collaborators.

Headline: This section is an opportunity for faculty to uniquely express their collaboration potential with descriptors considered to fall outside the other, narrowly defined fields in the profile.

More: this button brings up methods of contact (e.g., e-mail addresses, phone numbers, personal websites). We incorporate this information behind a button to encourage evaluators to fully assess collaboration potential conveyed in the profile and avoid hastily contacting users about incompatible opportunities, which was a concern of our focus group faculty.

Figure 2: An example profile page with the "More" button clicked

More button: Upon clicking "More," the button expands to reveal options for contacting or learning more about the user. This user included their e-mail address and a link to their personal website.

FEEDBACK ON THE PROFILE PAGE DESIGN

We distributed a survey to a pilot group of faculty representing all schools of the university who had attended research development seminars in the past two years. The survey prompted faculty to 1) create their profile page, and 2) provide feedback on the profile page design. Seventeen of 56 faculty responded to our first emailed survey invitation, and they each populated all sections of their profile. While user onboarding is ongoing, we have gleaned the following early insight from the completed profiles:

Faculty embrace profile pictures as a way to showcase collaboration potential. While some included headshots, a majority of respondents uploaded pictures more germane to collaboration potential such as their student research team, research "in action" (e.g., two researchers taking a woman's blood pressure), and lab space/equipment.

Inclusive section headings are a challenge. We learned that the "Populations Studied" heading is not inclusive of research beyond human subjects, with some faculty including examples like "*malware samples*" and "*cardiac stem cells.*" Several faculty also included minimal content in this section, which could be due to confusion over the section heading.

Profile linking should be considered as a feature. The most common items under "Resources" were terms involving faculty collaborators. This suggests that faculty should be enabled to link their profiles as a way to demonstrate working relationships and combined collaboration potential.

The survey also inquired about sections of the profile page that faculty would want to remove, change, or add. No respondent indicated an issue with the existing profile content or sections, however two faculty suggested adding a section that they both called "interests." This refers to anticipated future projects or topics that could spark interest in likeminded collaborators. Examples of "interests" provided by these faculty were "*the challenges and barriers facing men who have been subjected to long-term incarceration*" and "*sense of presence in augmented reality.*"

FUTURE WORK

Regarding our immediate initiative, our future work involves 1) continually iterating the faculty profile page design based on further survey feedback, and 2) gaining insight from partners in the local community about how they assess faculty profiles and how profiles for non-academic entities should be designed (through focus groups and think aloud sessions). More broadly, our future work aims to explore generalizable designs for social matching systems for collaboration that can accommodate various unique user types (beyond university faculty and indiscriminate community entities) and contexts for professional collaboration.

ACKNOWLEDGEMENTS

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