NICHOLAS GOULD

Teammates: Blake Rice, Eira Topé, Joe Rapier

CGT 256: PRINCIPLES OF UX DESIGN

SPRING 2016

DR. MIHAELA VORVOREANU

INTRODUCTION

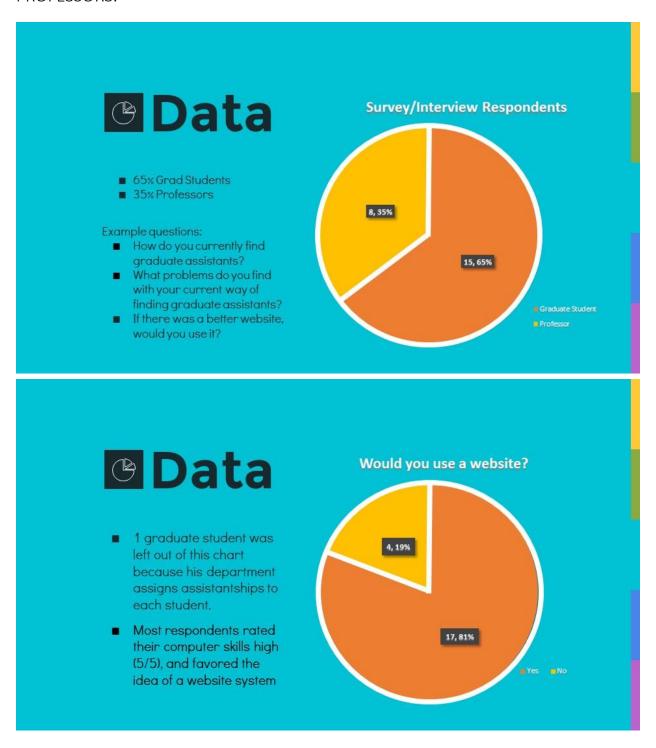
As part of our coursework, we worked in groups on a UX design project that had us try to solve an existing problem at Purdue, and also give us experience with the UX design process. Our group worked to develop an online website that could be used as a resource for professors to post graduate assistantship openings for their classes or research, and also be accessible by graduate students so they can see these postings and apply for them. Currently, Purdue has no such system for professors and graduate students to communicate. Through the project we gained experience with the UX design process; we conducted user research, made personas and scenarios, brainstormed ideas, generated sketches, made wireframes, made an interactive prototype, conducted informal usability testing, and conducted formal usability testing with the prototype and our target user audience. These tasks gave use valuable experience with UX principles such as Nielson's 10 heuristics, affordances, constraints, visual hierarchy, and typography. After developing our project over the entire semester, we were able to not only learn many valuable elements of UX design, but also have a physical product to show our work.

USER RESEARCH

Team role: Interviewed target users, surveyed target users, and analyzed the data

We set out to learn more about our users. We knew what the problem was, however, that was not enough to come up with a solution. We wanted to learn more about what our users needed and wanted to ensure that they would not only be able to use our product, but also enjoy using it.

WE INTERVIEWED GRADUATE STUDENTS AND PROFESSORS, AS WELL AS COLLECTED DATA VIA AN ONLINE SURVEY FROM TEN STUDENTS AND EIGHT PROFESSORS.



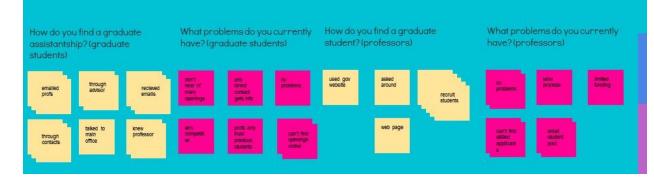
IN ADDITION TO THE INTERVIEWS AND SURVEY, CONTEXTUAL INQUIRIES WERE PERFORMED WITH THREE STUDENTS, AND WE FOUND THAT FINDING ANY INFORMATION ON GRADUATE ASSISTANTSHIPS WAS A TEDIOUS, AND SOMETIMES IMPOSSIBLE, TASK.



- Contextual inquiries results were as follows:
 - 2 people could not find any relevant assistantships
 - 1 person found a pdf form he could print and submit personally
 - All agreed it was easier to talk to professors and others in the department to find an assistantship than going online

Data Analysis

We used affinity diagrams to analyze our data and divided it into separate categories; how professors find GTAs, problems professors and students currently have, and how students find GTA positions.



WE DETERMINED THAT THE PROBLEM COULD BE SUMMARIZED IN FOUR MAJOR POINTS:

Results

While most students would like a better website to find assistantships, some still want to use personal contact with professors.

Most professors and students in the CGT Department use direct contact to find an assistantship.

Results

Both professors and students who do not know people have a much more difficult time

Finding an assistantship is a slow process

PERSONAS



"I wish there was an easy and straightforward process to find an assistantship."

Personas

NAME

Ananya

MAJOR

CGT

COLLEGE

College of Technology

Ananya is a graduate student in CGT concentrating in animation at Purdue University that is currently looking for an assistantship. As a CGT student she knows having an assistantship would be very valuable to her as a learning experience, and save her some money. Although she is an extremely talented student that receives excellent grades, she is somewhat quiet and soft-spoken in class and as a result her professors don't know enough about her and have not asked her for an assistantships. She isn't sure how to reach out to her professors to ask for assistantships, but she really wants one.



"I need a graduate assistant, but it is so tedious to find one and there is such a small pool of students."

Personas

NAME

Adam Phillips

DEPARTMENT

CGT

COLLEGE

College of Technology

Professor Adam Phillips is an animation professor in the CGT department and has quite a bit of work that he needs help with. He is in need of a graduate assistant. Although he has many candidates who are talented and in some of his CGT classes, he is not sure which students might actually be interested. He feels like his only option is asking students personally, but he might miss students who actually want or need assistantships if he does this.

Scenario

As a graduate student, Ananya constantly spends her time searching for new assistantship opportunities. She isn't sure what the best way to find an assistantship is. Dr. Phillips spends time every semester looking for a new grad student to fill an assistantship position, but he doesn't always know someone who's qualified. While looking on the internet, they find a new job board which allows professors to upload their requirements for a graduate assistant and for students to upload their resumes. Ananya uploads her resume and fills out her profile, and then searches for opportunities at Purdue. Dr. Phillips saw Ananya's profile and remembered how well she did in his class, so he emailed her for an interview. She turned out to be the perfect candidate, and it took much less time to find her using the job board.

TECHNICAL REQUIREMENTS

Requirements

Information/Content Requirements

- list all available GTA positions
- list professors, research, emails

Functional Requirements

- -upload resume
- open positions are sortable and searchable

Technical Requirements

- show relevant results

Information/Content Requirements

- list of qualified students
- can see GTA applicants' past experience and qualifications

Functional Requirements

- download resume
- can search students to directly recruit for GTA positions

Technical Requirements

- simple, easy to use, interface

ANANYA

ADAM PHILLIPS

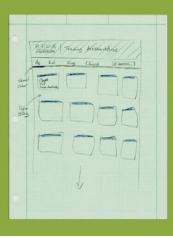
WIREFRAMES

Team role: Made sketches, made wireframes of profile screens, got feedback from a target user on our wireframes

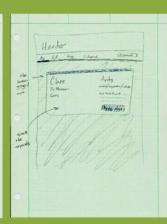
After our user research, we came to the conclusion that there would be two users for our product (graduate students and professors), however, our target users are professors. We started to develop concepts for a website that could be used by professors to post available assistantships, and could be used by graduate students to view the posted assistantships.

SKETCHES



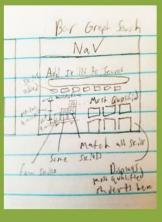


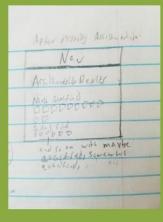




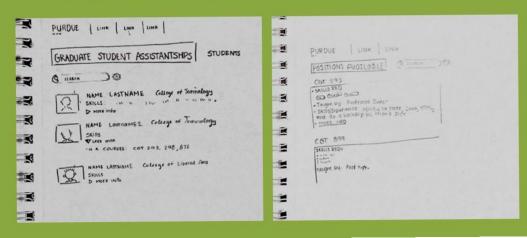
Sketches







Sketches



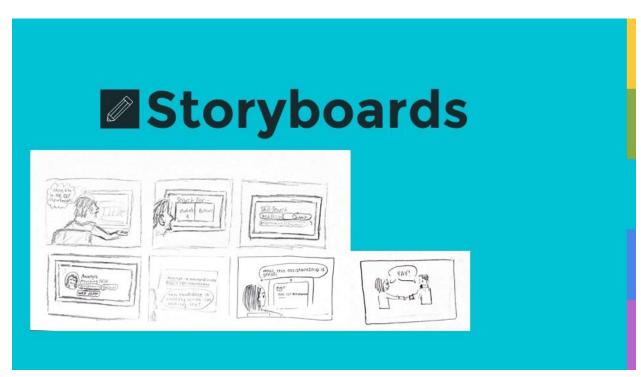
Sketches



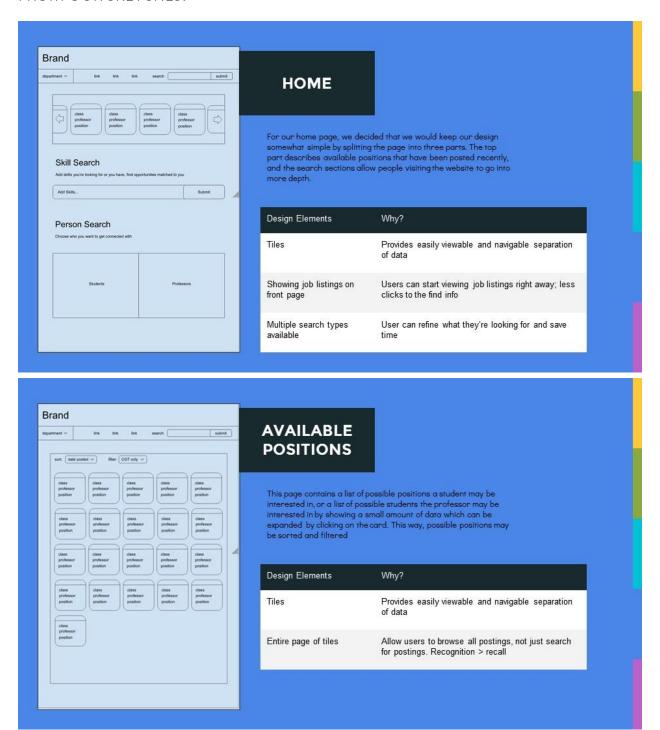
Sketches

Likes	Why?
Tiles	Provides easily viewable and navigable separation of data
Showing job listings on front page	Users can start viewing job listings right away; less clicks to the find info
Filters to sort data	User can refine what they're looking for and save time

WE THEN STORYBOARDED A SCENARIO OF HOW OUR PRODUCT WOULD BE USED. A PROFESSOR WOULD POST AN OPENING, WHICH WOULD THEN BE SEEN BY AN GRADUATE STUDENT APPLICANT (POSSIBLY A STUDENT THAT THE PROFESSOR MIGHT NEVER HAVE EVEN THOUGHT OF FOR THE POSITION). THE STUDENT IS ABLE TO LEARN ABOUT THE POSITION AND FIND OUT HOW TO APPLY FROM OUR WEBSITE. IN THE END THE PROFESSOR HAPPILY HAS A GRADUATE STUDENT ASSISTANT THAT HE'S EXCEPTIONALLY HAPPY WITH.



KNOWING THE PROCESS WE WANTED OUR SITE TO LEAD OUR USERS THROUGH, WE BEGAN TO DEVELOP WIREFRAMES BASED ON THE ELEMENTS WE LIKED BEST FROM OUR SKETCHES.





SKILL SEARCH PAGE

This page is for targeting specific skills students want to use, or that professors want in their TAs, providing a filter to narrow down possible candidates and opportunities

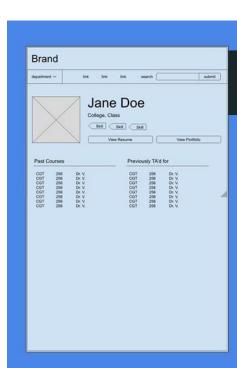
Design Elements	Why?
Skill search	Easily find possible applicants with specific skills, users want relevant results
Showing additional, non- searched-for skills	Searcher can see useful skills they may not have thought of searching for
Resume download button	Less clicks to view more details about a possible applicant



PROFESSOR PROFILE

Professor profiles were focused on showing positions they manage and contact information. This data is what applicants find most important.

Design Elements	Why?
Skill tags	Searchable traits of a person
Resume download and portfolio view	Profile doesn't attack user with too much data, but provides them with the option to view more
Contact preferences section	Previous user research shows Profs. Prefer to be contacted in different ways, and it's the data applicant have the hardest time finding out.



STUDENT PROFILE

Student profiles were designed around highlighting the skills and experience of applicants. This was the data that professors search for most.

Design Elements	Why?
Skill tags	Searchable traits of a person
Resume download and portfolio view	Profile doesn't attack user with too much data, but provides them with the option to view more
Past courses section	Shows potential employers previous class experience that could be applicable up-front



DEPARTMENT SEARCH PAGE

The student search was designed for browsing students (by college, major, etc.)

Design Elements	Why?
Search by major	A broader way of searching than skill searches

WE THEN GOT FEEDBACK FROM TWO STUDENTS ON OUR WIREFRAMES BASED UPON CONTENT, DESIGN, AND AESTHETICS.

W User Feedback

Subjects

- Male, Caucasian,
 Purdue Math
 Graduate Student
- Female,
 Caucasian, Purdue
 Physics
 Undergrad

Feedback

- Instead of just listing courses in profiles, provide short descriptions of them as well
- Be more descriptive in what the website actually does on the home page
- List pay of assistantships (if applicable)
- Show research interests on profiles

PROTOTYPE

Team role: Made profile pages, helped unify theme design of all pages, conducted informal user testing

Using the feedback we received on our wireframes, we developed an interactive prototype by using a combination of <u>Adobe Illustrator</u> and <u>InVision</u>.

Our prototype can be downloaded here.

BEFORE WE GENERATED OUR PROTOTYPE, WE ALSO PERFORMED A COGNITIVE WALKTHROUGH TO DETERMINE WHAT WE CRITICISMS WE, AS DESIGNERS, HAD FOR OUR WIREFRAME.



In lab, before we designed the prototypes, we used a cognitive walkthrough to determine exactly what we needed to design and how. We determined a series of tasks -- creating a posting, editing a new profile, & responding to a posting, and then figured out what screens we were missing in order to complete these tasks.



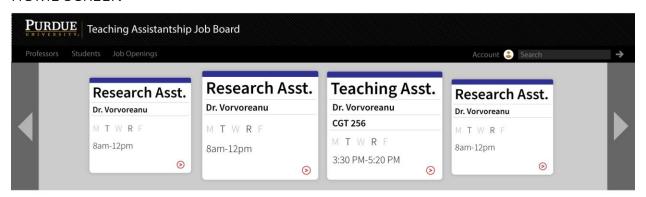
Our wireframes consisted of: home, available positions, skill search page, a professor & student profile, and a department search page.

We decided to add: a "create new account" page, profile edit screens, and a "create new posting" screen.

WHY

We didn't have enough transitional pages during our wireframe, and creating new accounts and creating new postings in particular was extremely important to our website. We also wanted our prototype to feel more realistic and edit screens definitely helped with this.

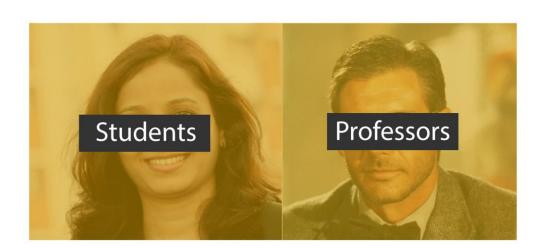
HOME SCREEN



Skill Search

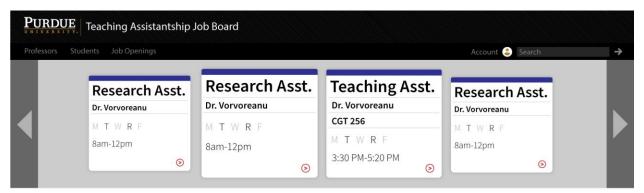
add skills you're looking for or have





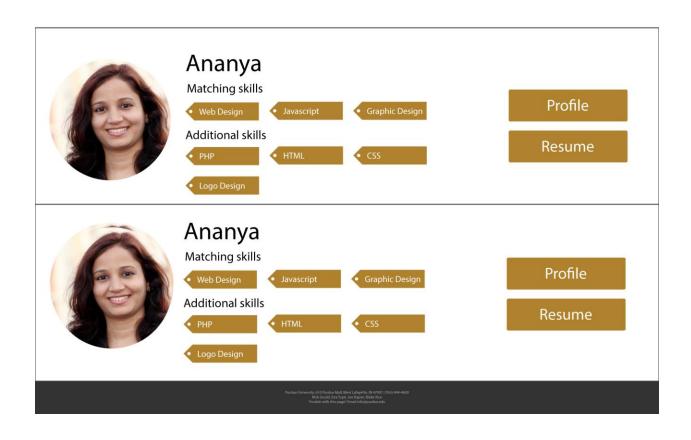
Nick Gould, Eira Tops, Joe Rapier, Blake Rice Trouble with this page? Email info@purdue.edu

SKILL SEARCH FUNCTIONALITY ON THE FRONT PAGE

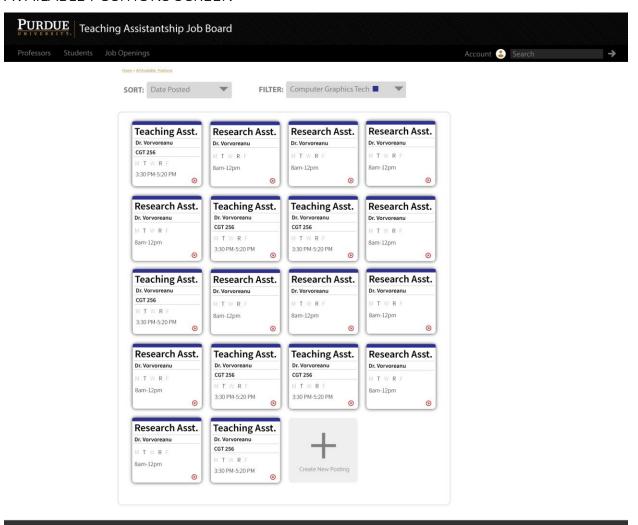


Skill Search add skills you're looking for or have

add skills... Submit



AVAILABLE POSITIONS SCREEN



ue University, 610 Purdue Mall, West Lafayette, IN 47907, (765) 494-460 Nick Gould, Eira Topé, Joe Rapier, Blake Rice

PROFESSOR AND STUDENT DIRECTORY SCREENS



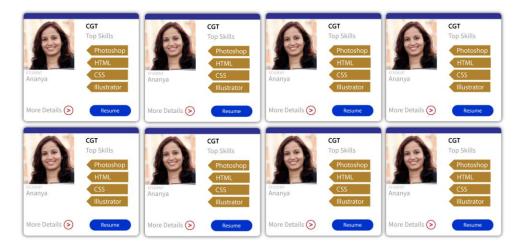
Professors



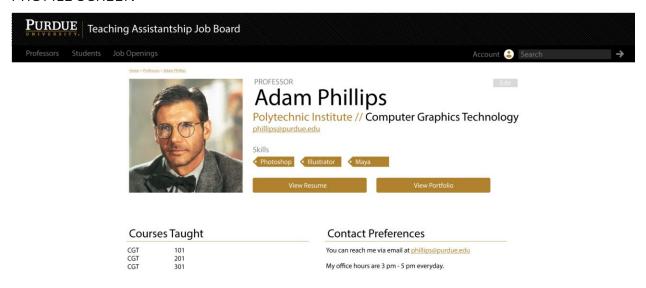
Purdue University, 610 Pordue Mall, West Lafayette, IN 47907, (765) 494-4600 Nick Gould, Eira Topé, Joe Rapier, Blake Rice Trouble with this page? Email infloctours in edu



Students

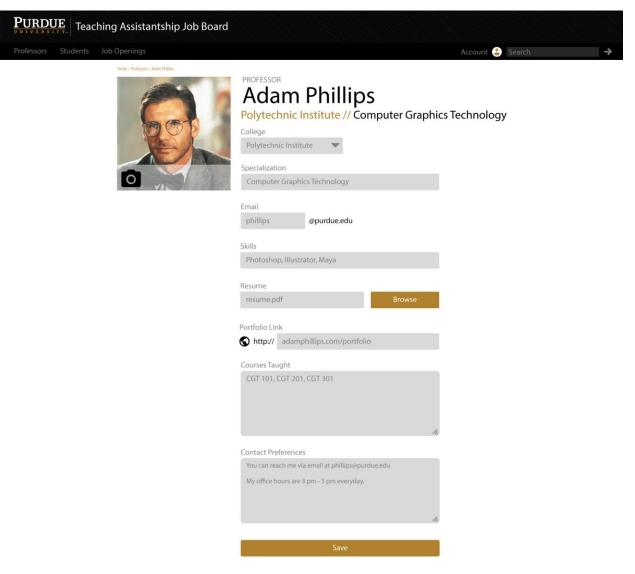


PROFILE SCREEN



urdue University, 610 Purdue Mall, West Lafayette, IN 47907, (765) 494-460 Nick Gould, Eira Topé, Joe Rapier, Blake Rice

EDIT PROFILE SCREEN



due University, 610 Purdue Mall, West Lafayette, IN 47907, (765) 494-4600 Nick Gould, Eira Topé, Joe Rapier, Blake Rice

Usability Testing

After this, we individually conducted usability testing in an informal process in order to revise our prototypes, and make sure we had user feedback that didn't involve ourselves. We had a series of tasks for our users, and had them "think aloud" as they used attempted each task.



We wanted several different points of view of users to our website, so getting feedback individually was our best option because it allowed us to get a lot more feedback from different users in the same amount of time. If many users had the same issue, we needed to fix that to revise our prototype.

Demographics

User 1	O+	Indian	College of Health & Human Sciences	Sophomore	
User 2	Q	Caucasian	College of Liberal Arts	Freshman	
User 3	δ	Caucasian	College of Engineering	Sophomore	
User 4	Q	Caucasian	College of Pharmacy	Junior	

Summary of Feedback

User 1	Very frustrated with lack of visibility of "create new posting" button, did not have too much difficulty with finding "edit profile" options on both professor and student from their profile. Wanted profile icon to be more visible.					
User 2	Had trouble figuring out where the "edit profile" link and "create new posting" option was. Didn't notice account dropdown until mouse randomly rolled over it. Thought it should have a label & be more prominent.					
User 3	Had issues with trying to answer a job posting.					
User 4	Was unclear if job postings were jobs. Didn't know how to apply to job without being sure where the jobs were. Couldn't create a new account, but found a student's account. Was unable to create a job posting. Successfully found a student for the assistantship.					

Summary

After our usability testing, we determined that our most significant issues in our previous prototype were the lack of visibility of our profile button, and the fact that it was difficult to find the option to create a new posting.

We revised our prototype to improve this.

USABILITY TESTING

Team role: Conducted formal usability testing with the rest of the team, analyzed the data from the testing

We conducted formal usability testing for our refined prototype. We had a total of six users; three graduate students and three professors. We asked the users first sign a waiver permitting us to record their interactions with our site via the laptop's webcam as well as screen capture. After this, the users filled out a quick demographics survey, and then we began testing.

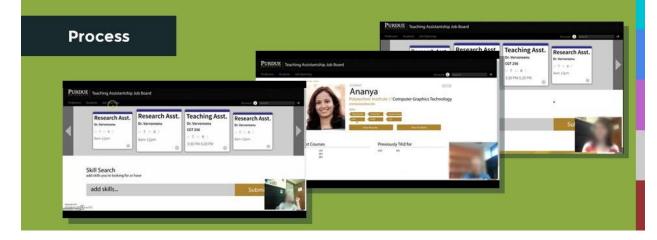
We presented each user with four tasks that had them explore the entirety of the site.

After the testing was over, we performed a short interview with each user, asking for likes, dislikes, and general criticisms & comments about the site.

Methods

	Position	School	Major	Age	Gender	Ethnicity	International student?	Primary Language
User 1	Graduate Student	Polytechnic Institute	CGT	22	Female	Asian	No	English
User 2	Graduate Student	Graduate School	OLS	23	Male	Mixed	No	English
User 3	Graduate Student	Polytechnic Institute	CGT: HCDD	24	Male	Caucasian or White	No	English
User 4	Professor	Polytechnic Institute	NA	45	Male	Caucasian or White	NA	English
User 5	Professor	College of Science	NA	46	Female	African American	NA	English
User 6	Professor	Polytechnic Institute	NA	30	Male	Caucasian or White	NA	English

Methods



Methods

Tasks

- 1. Find out how to apply for a job posting
- 2. Find how to post an opening
- 3. Find a specific student (Ananya)
- 4. Find, and find how to edit, your profile

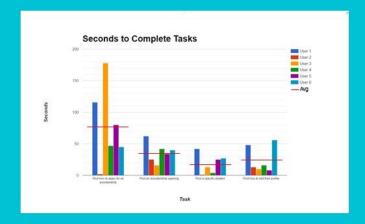
Methods

Interview

- 1. What did you like about the site?
- 2. What did you dislike?
- 3. Do you have any comments or criticisms?



Times



Results

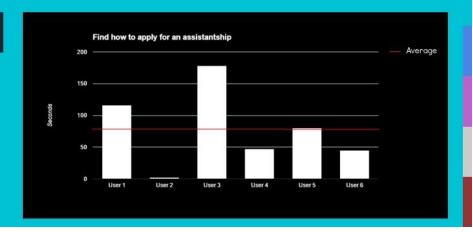
Task Completion

All tasks were able to be completed by all users.

Users 1 & 3 had difficulty finding how to apply for an assistantship (Task 1), and both thought they could not complete the task. However, as soon as they thought they could not complete the task they found the information they needed and succeeded.

Task 1

Find out how to apply for a job posting



Results

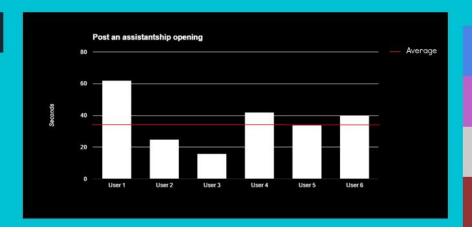
Observations

Find how to apply for an open position

Users had trouble completing the task. The information they were looking for was on the detailed card for any open position. Users would find the detailed card, but didn't identify that the information to apply was on the card.

Task 2

Post an assistantship opening



■Results

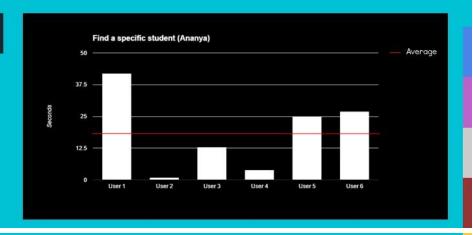
Observations

Post an assistantship opening

Users had trouble completing the task. The information they were looking for was on the "Job Openings" screen. Users would generally visit the "Account" dropdown first, then visit the "Professors" screen, believing that "Professors" meant a section of content for professors, rather than a list of Professors (poor information scent).

Task 3

Find a specific student (Ananya)



Results

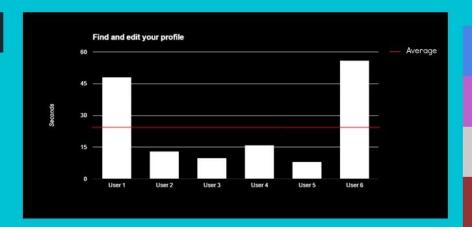
Observations

Find a specific student (Ananya)

Users had no trouble completing the task. The times were longer than expected because users would fully read Ananya's card before finding her profile.

Task 4

Find, and find how to edit, your profile.



Results

Observations

Find and edit your profile

Users had no trouble completing the task. The prototyping tool (Invision App) would sometimes improperly cover the "Edit" link with the "Account" dropdown, which caused some users frustration.



Interviews

User likes

- The home page is attractive
- The tiles are a nice way to organize the data
- One learned, the site is easy to navigate, however there is a learning curve
- The profiles are actually better than Purdue's own faculty profiles
- You can input skills
- Professors can add portfolios, that way grad students can see what their research is, which is normally hard to find



Interviews

User recommendations

- Change the color of the main navigation links to have more contrast with their background
- The "Account" menu gives the impression it contains more than just profile information. Either rename "Account" to "Profile" or add more to the "Account" menu. Possibly add "Create a posting" to the "Account" menu
- Add a "Submit" button to the "Create a posting" screen
- Change the skill search hint text. "Add skills" gives the impression you're adding skills to your profile, not searching for them. The subheading is also unnecessary.
- Add concentrations within majors (Ex.: CGT Animation)

BASED UPON OUR USERS' EXPERIENCES AND COMMENTS, WE WERE THEN ABLE TO DETERMINE FUTURE RECOMMENDATIONS FOR THE DEVELOPMENT OF THE SITE.



Problems		Solutions				
1.	Home page is not very clear about what the site is and what it does for users.	Replace current banner containing job postings with an informative and engaging banner with a heading and subheading to quickly let user know what the site is for and how it helps them.				
2.	Navigation text is slightly difficult to read.	Change text color from gray to white to increase the contrast ratio on the black background.				
3.	Cards are not very big and could be difficult to read.	Make cards larger overall with a bigger font size to increase readability.				
4.	The submit job posting form does not have a submit button.	Add a submit button to the bottom right hand corner of form to follow conventions.				
5.	Website was not compelling or engaging to	Conduct more usability research and testing to improve the design and make the site a pleasure to use.				

Semester Conclusion

Professors and graduate students have a problem: they have a hard time connecting with each other to fill assistantship positions.

We set out to solve that problem through research and testing of our user group.

We went through several sketches and iterations of our design to come up with an interactive prototype for our target audience to test, and collected data of them using the site through formal usability testing methods including screen capturing, video recording, and timing.

We created a product which professors and graduate students were able to use to fill and find assistantship openings and connect with each other. More design and usability research needs done to make the product pleasant to use.

Lessons Learned



M Lessons Learned

- During our user research, doing interviews and talking to graduate students and professors provided significantly more helpful feedback than we got with regular students
- Listening to our users gave us a lot of insight into problems and possible issues that we didn't even consider
- The feedback we got from our target audience was never the same; everyone always mentioned something to change that the others didn't. This allowed us to get a very good idea of what kind of things each kind of demographic wanted to see

REPORTS

USER RESEARCH
WIREFRAMES
PROTOTYPING
USABILITY TESTING

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