EntryLevelFit
Final Report

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Report Overview

In this document, you will find the work developed for the website EntryLevelFit (ELF). We will begin with an introduction to ELF's design concept, supporting activity analysis, a conceptual model of the entire website, its selected implementations, the possible cultural and economic impact of ELF, and the work remaining to bring it to reality.

Design Concept

Project Overview

ELF is a job search website for those in higher education. The goal of ELF is to help students find entry-level jobs that match their still developing skill levels. These jobs include positions for research projects, independent projects, and internships. Additionally ELF is designed for recruiters to be able to post entry-level positions with well-defined requirements.

Problem to Solve

Finding an internship, research position, or independent project can be difficult for new students. Current job search websites are difficult to navigate, lack functioning filtering of job postings, and do not help inexperienced students find appropriate entry-level jobs that match their skillsets. These students would benefit from a site that allows them to easily search for and find lower-level positions that allow them to gain the experience required for many "entry-level" industry jobs.

Forecasted Outcome

ELF will enable both students and recruiters by allowing students to find jobs perfectly suited for their interests and current experience and by letting recruiters easily specify the requirements of positions they are seeking applicants for. This means that applicants will no longer be sending out resumes to uninterested recruiters and likewise recruiters will not have to deal with a deluge of uninterested or unmatched candidates.

Many people feel that employment opportunities are not keeping up with the rise of qualified applicants. Making it easier to find and gain relevant job experience, thanks to ELF, is a major step in solving this problem. When word spreads that schools using ELF are attracting more internships and graduating more students with job experience, it will influence other schools and job search websites to reevaluate how they are failing to meet their employment goals.

Activity Analysis

The Activity

The main activity that we observed was students using current job-search websites. Students of various levels of experience use websites such as LinkedIn, JobLink, Monster, Careerbuilder, and Indeed to post their resume, search for jobs they are interested in, and apply for positions. These websites usually contain various search features that allow a user to filter their search results based on their personal preferences.

Observations

In our activity analysis we observed three different students using job-search websites. Two of the students used RPI's JobLink website while one student used LinkedIn. The students were observed in-person and were using laptops to interact with the websites. Two of the students' interactions were recorded via screen-capture software. Additionally the observers took notes while the students were performing their searches.

Actions

The main actions that the users took were creating search criteria, scrolling through the results and viewing individual listings. The users spent an average of 25% of their time entering search criteria, an average of about 35-40% of their time scrolling through results, the users on JobLink spent an average of 7.5% of their time actually viewing listings while the user on LinkedIn spent 70% of his time viewing individual listings. (See 1.A.2, 1.B.3, and 1.C.2 activity graphs.)

History

Student users of job-search websites are typically trying to find interesting jobs related to their field of study. They usually want to look over various positions and postings and apply to many different jobs in order to increase their chances of finding a suitable employer. With the interactions we recorded, many students had conflicts with the websites because they found many jobs that they were not interested in or were under qualified for (See I.A.2, I.B.2.7, 1.C.3.4, and 1.C.3.6). Additionally, the interactions on the websites were not always intuitive and one student repeatedly looked at the same job posting without knowing it (see . The students were dissatisfied with their interactions because they could not find appropriate jobs for them related to their field of study and because the navigation and interactions on the websites were unsatisfactory and unintuitive.

Design Scenarios

Current

Users access websites such as JobLink or LinkedIn and search for jobs or internships that will hire them. They come to find only positions that are irrelevant to what they wish to do or jobs that will not hire them without prior experience in the field.

Users ask friends and professors about research opportunities or independent projects and take what they can because they need to and not because it interests them.

Transformed

Users access *EntryLevelFit* to search for jobs, internships, research positions, and/or student projects that interest them. They can find things that are relevant to their interests and will both hire and invite them to the team.

Requirements and Issues

Driving Specifications

Give users an easy to use search tool that only returns listings relevant to the users interests. These results will be curated so that any experience needed is clear and upfront without needing to go through a time consuming process just to be turned away near the end.

Design

The functionality and design of the website must be able to cater to many different users with different needs and wants. The listings must also be specific to anyone they are willing to hire while still filtering out the irrelevant listings that employ the "shotgun" approach of making their job open to everyone (ie. pyramid scheme sales jobs.)

Conceptual Model

Transformed Scenario

Users access *EntryLevelFit* to search for jobs, internships, research positions, or student projects that interest them. Applicants will find searching for jobs to be easy and less stressful thanks to better tailored search criteria and a lack of positions they are not qualified for or are not interested in. Recruiters will post jobs knowing that they will be easier to find and search for more relevant applicants. Through this applicants apply for more jobs they are interested in and more recruiters find candidates that are good fits for their positions.

Key Views

There are three types of users using ELF: Guests (not logged-in and non-registered users), Applicants (registered users looking for positions), and Recruiters (registered users who post positions).

Homepage View

Guests are presented a small statement of purpose and clear locations for registration and logging in. They are still able to search for positions since the search bar will still be present at the top of the page (but not be able to look at position details or apply). (fig. 1)
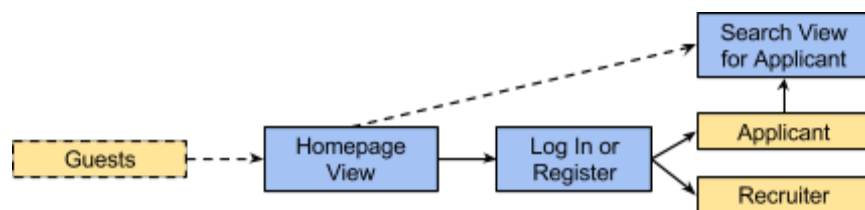
Figure 1. Users, Homepage, LogIn, Registration, and Search

Log In or Register View

One half of the page is where pre-registered Applicants and Recruiters can log in with their name and password. As with most websites, there is a link if the user forgets his username or password.

The other half of the page is where Guests can begin registering for an account. There is a form ready to be filled out with their basic information. While this information will be used for their profile, the form is not the full list of information that could be on a profile (that can be done at a later point). (fig. 1)

Search View for Recruiter

Recruiters have certain privileges that Applicants do not. In addition to searching for position postings, they have additional search tools to find Applicants. A recruiter will search via given criteria and view the results. These results may include positions or applicants. (fig. 2)
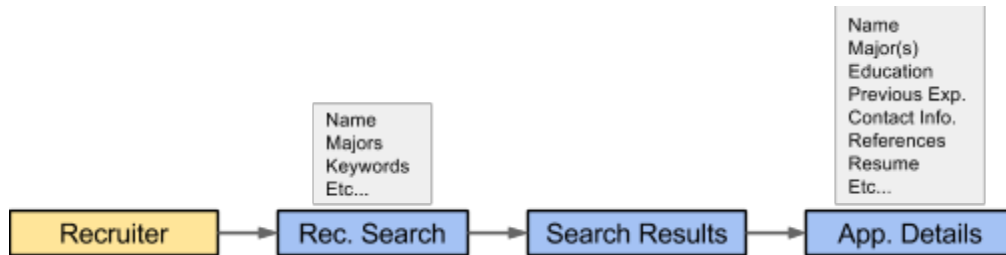

Figure 2. Recruiter, Search, Results, Applicant Details

Search View for Applicant

Applicants (and Guests) can use this view to look for positions by their titles, tagged majors, keywords, etc. If Applicants are using a school-specific version of ELF, they will find all of their school's majors listed. They can also search for recruiters. (fig. 3)
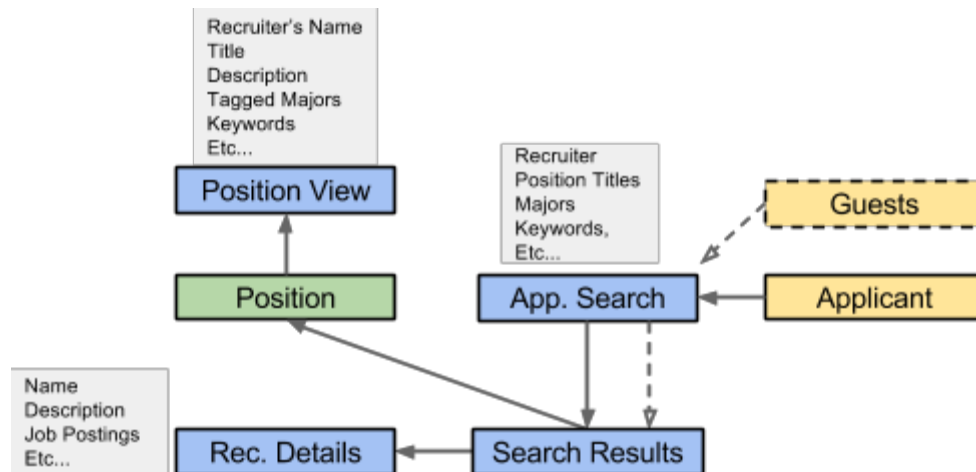
Figure 3. Applicants, Search, Results, Recruiter Details, Position View

Search Results View

A list of results from a search. On the top is the search field where users can see their existing search term or change it if needed. Off to the left are categories to narrow the search. Near the top of the list users have several options for sorting their search results. (fig. 4)
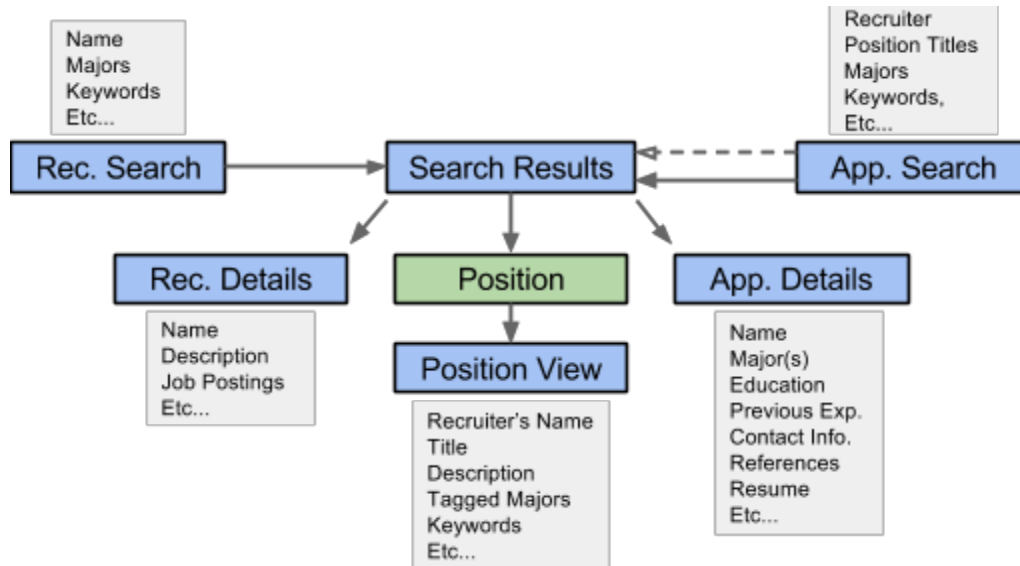
Figure 4. Recruiters, Applicants, Search Results, Position, Recruiter and Applicant Details
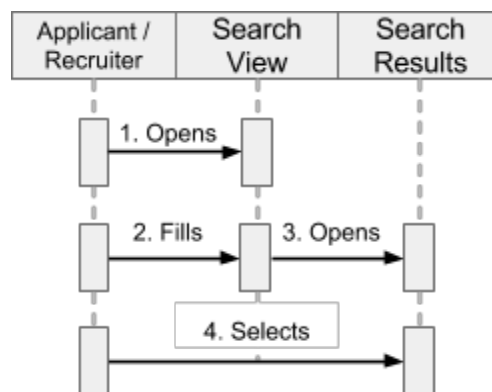
Figure 5. Interaction diagram for users searching

Position Creation View

A form for filling out all the information needed to create a position posting. Information that will be used include the position's title, description, tagged majors, and other keywords. If Recruiters are using a school-specific version of ELF, they can tag any major that the school offers. It should be noted that Recruiters cannot excessively tag different majors for their position. This helps cut down on the number of irrelevant positions an Applicant may find in their search.

Recruiters can also customize what information they want from Applicants who apply, such as references and a cover letter. (fig. 6)
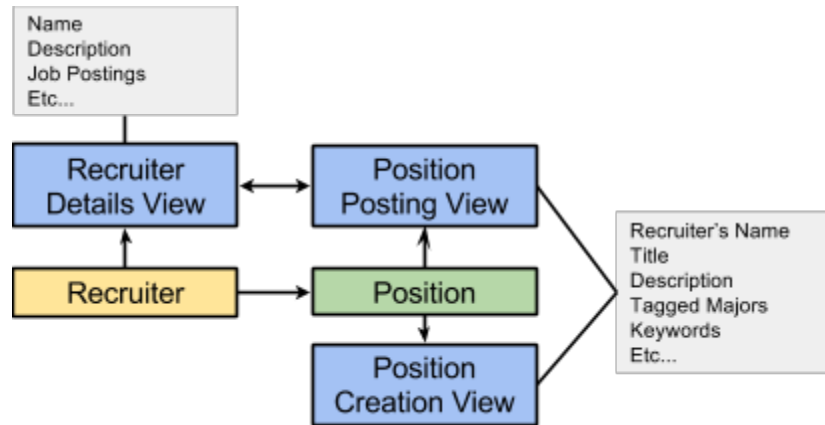
Figure 6. Recruiter, Position Creation and Posting
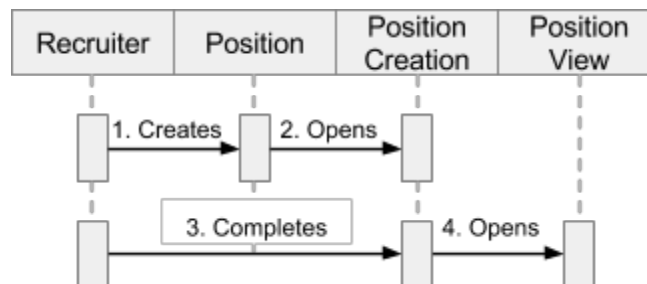
Figure 7. Interaction diagram for recruiter posting a position

Position Posting View

These are the details of the position, including its title, description, tagged majors, and keywords. There is an apply button that will take users to the application for the job. (fig. 6)

Application View

Applicants will fill out a form with their information in order to apply for a position. They can upload documents and files if necessitated by the application for resumes, portfolios, etc. (fig 8)
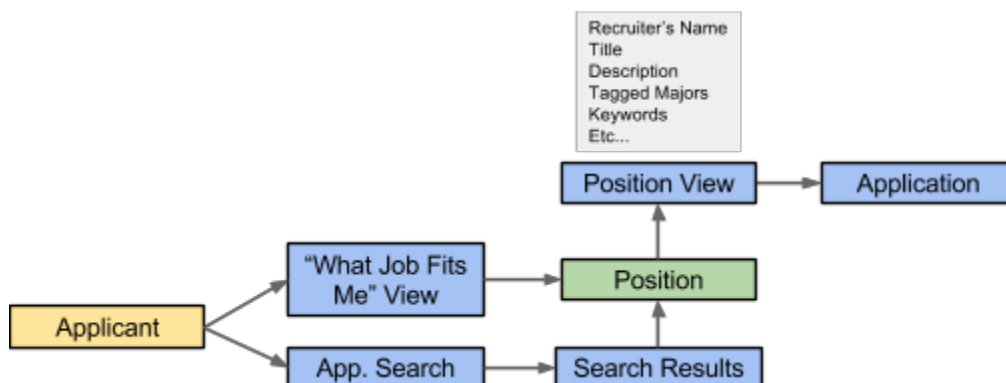
Figure 8. Applicant, Search, What Job Fits Me, Position, Application

Applicant Details View

A profile page displaying information about the Applicant. It includes their name, major(s), education, contact information, etc. (fig 9)
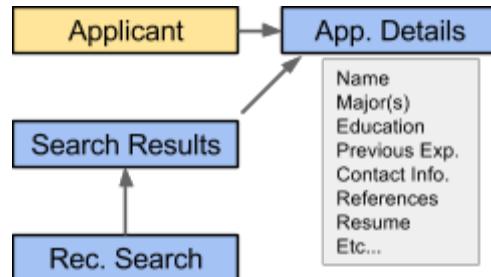
Figure 9. Applicant, Details, Recruiter Search, Results

"What Job Fits Me" View

Based on an Applicant's profile information and search history, a set of search results is created of likely relevant positions. (fig 10)
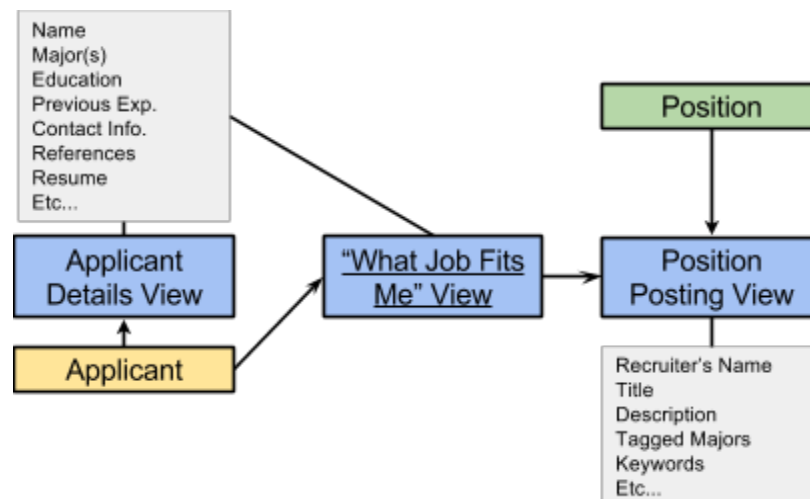
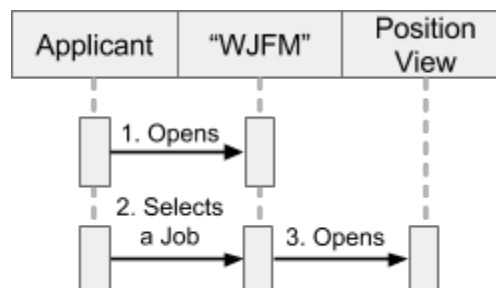Figure 10. Applicant, Applicant Details, What Job Fits Me, Position

Figure 11. Interaction diagram for Applicant using "What Job Fits Me"

Recruiter Details View

A profile page displaying information about the Recruiter. It includes their name, description, contact information, etc. The page also has a list of positions the Recruiter created. (fig 12)
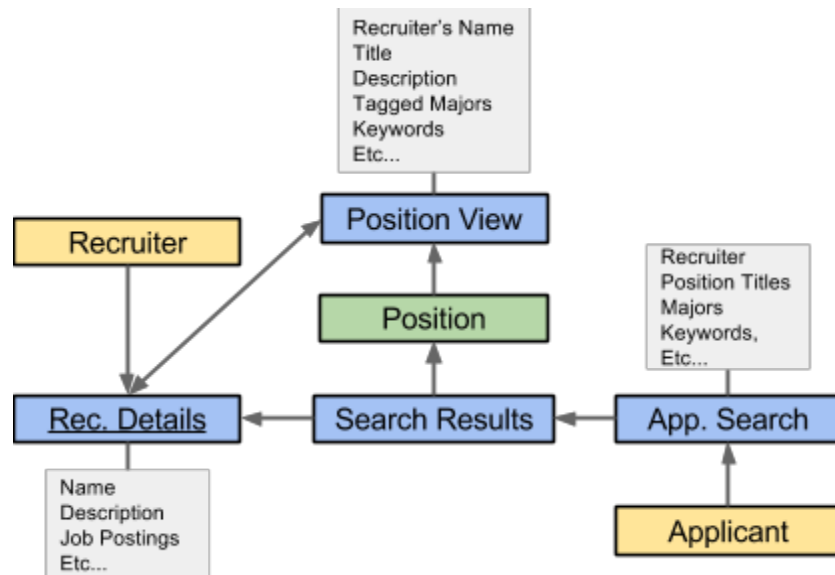
Figure 12. Recruiter, Recruiter Details, Position, Search Results, Applicant Search, Applicant

ELFMail View

This is the mailing/messaging system. It functions just like email. There is an inbox, sent box, a button for composing messages, etc. (fig 13)
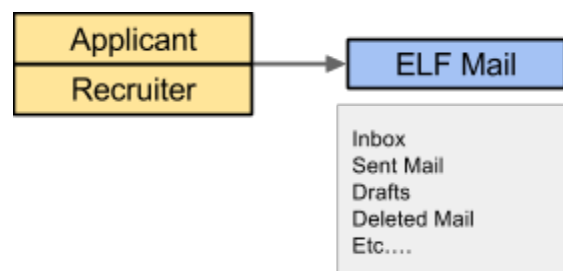

Figure 13. Applicant and Recruiter, ELF Mail

Selected Implementations

This section will highlight five views we selected to create functional horizontal prototypes for. These implementations use HTML, CSS, Javascript, and the Twitter Bootstrap framework as their underpinnings. The implementation can be found at grovejay.github.io/ELF/.
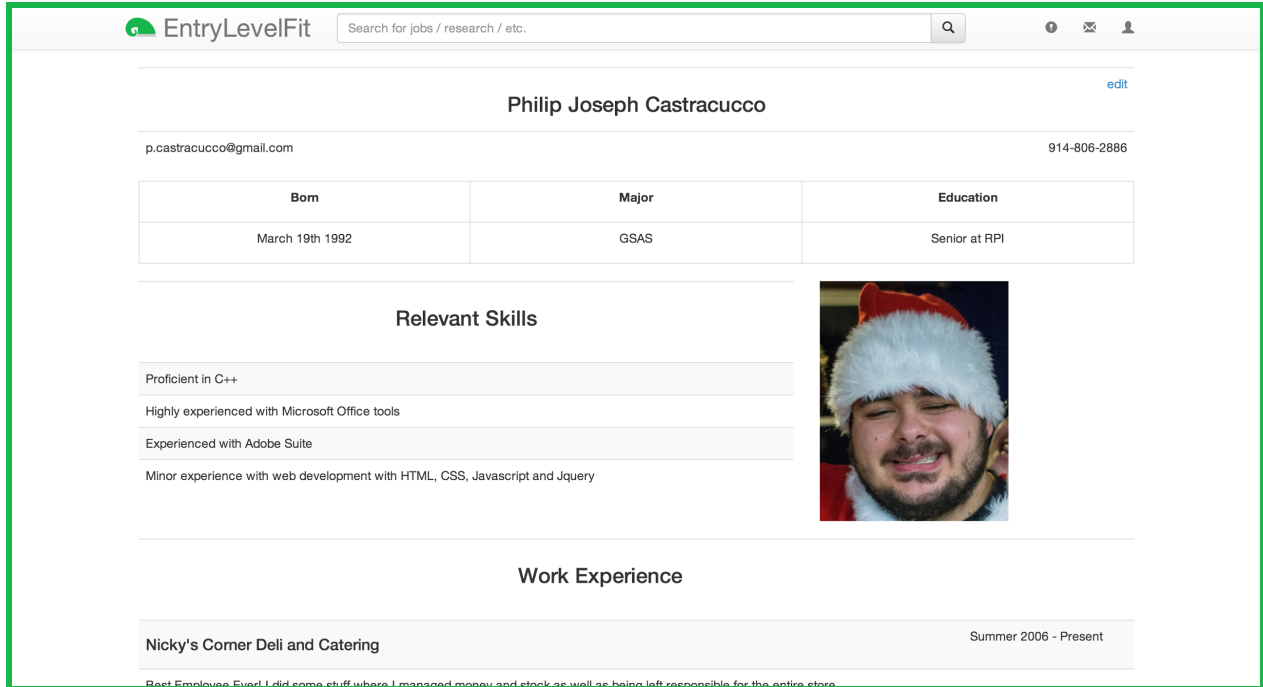
Login / Registration

The first page visible is the sign-in and registration page. This view allows the user to sign in if they have an account, register if they don't, and also perform a search of available job postings on the ELF website. By putting any two strings into the username and password field in the "Sign In" area and clicking the "Sign In" button, you can navigate to the next view, the Applicant Profile view.

Figure 14. Login / Registration View

Applicant Profile

The second page is the Applicant Profile view (/applicant.html). This view shows the details of the user who has logged in. Their profile picture, contact information, skills, and relevant coursework are visible and organized in a readable, concise way. By using the search bar in this view the user can navigate to the next view, the Search Results view.

Figure 15. Applicant Details View

Search Results

The third view is the Search Results view (results.html). This view displays the relevant results for a user's search terms. The results are viewable in an organized table with the poster of the position, the majors of the position, the position title and quick description, and the type of position listed. The table is paginated for easier navigation. By clicking on the first result "Interface Designer" the user can view the fourth view, the Position View.

Figure 16. Search Results View

Position View

The fourth view is the Position View (pos_view.html). This view shows the important details of a posted position and a large button for the applicant to apply for the position. The poster of the job is also clickable and would link to the recruiter's profile page.

Figure 17. Position View

Position Creation View

The fifth and final view is the Position Creation view(pos_create.html). This view shows how a recruiter might fill out the details of a job they wanted to post to ELF. Many options for details are available and different majors and requirements can be selected on this view.

Figure 18. Position Creation View

Impact

ELF has the potential to help more students break the catch 22: to get a job you need experience, and to get experience you need a job. Many of us and fellow students have suffered at the hands of current job search websites that are terribly designed and not tailored towards helping us. With ELF, students will have a less stressful time finding more internships and even positions across their campus to earn their job experience. School specific versions of ELF make searching even easier as all positions can be tagged with their specific majors.

Professors, researches, and students will have an easier way to recruit for their research or personal projects. Instead of constantly sending out poorly formatted emails with position details, they can create nice, clean position postings on ELF. Through the simple search interface, the "What Job Fits Me" view, and the detailed filtering of postings, candidates can confidently apply for positions they are interested in.

With the continual need for experienced graduating students in the United States, ELF can find itself right at home in any college across the nation. Colleges could purchase their own instance of ELF, much like the Learning Management System, to have it tailored to their specific needs (e.g. use their own majors). Additional revenue can come in the form of premium listings, jobs paid to be displayed more prominently on the website.

There is the possibility to replace some of the paper forms when applying for positions when they are done through ELF. However, this could remove some face-to-face communication when searching for research positions.

Work Remaining

Turning ELF into a full fledged website and business requires a great deal of prep work. We would start off using RPI's [Emerging Ventures Ecosystem](), a business incubator program with many resources for helping entrepreneurs and starting businesses and projects. The next step would be to add additional skilled web designers and developers to make our project aesthetically and technically stronger. Our first priority will be building a version of ELF specifically for RPI as a trial run. At the same time we would be researching job searching websites other American colleges use to plan our eventual national release. After completing our trial run, we would look for more investors before finally pitching ELF to other colleges.

Appendix

Figure 19: Overall Site View Map, Includes view associations for almost all views.

I. Supporting Evidence - Activity Analyses

I.A Activity Analysis A
Activity Observed: Searching for jobs on Joblink

Purpose: Observe "wasted" time while searching, inefficiencies, and annoyances

I.A.1 Activity Analysis Table & Notes

Time	Notes
11:40 PM	Begin observations Open laptop and search for "Joblink RPI"
11:41:00	Not obvious how to log in Student finds log in
11:41:15	Browser for new postings Click "Joblink"
11:41:30	Nothing Relevant
11:42:00	Job Search

	● Save Search Agent ● Select BioMed / Bio / Mat. Eng. ● Ignore jobs w/ all majors ● Full Time
11:43:00	Scroll Through Industry Select US
11:43:30	Looking @ Jobs Click on Job description
11:44:00	Job didn't apply Click Back
11:44:45	CSCI jobs are appearing Computer Eng. Jobs are there as well Scrolling through jobs
11:45:30	No post doc, "Doesn't Apply", but are shown anyways
11:45:45	Relevant Job in Mat Sci. User clicks on job to get more information about company Clicks on company, description is lame Not Biology-related enough
11:47:30	Back to job list Too much noise in results from Mat. Eng.
11:48:00	All jobs searched through, done
11:48:10	Click on Advanced Search Broken Link Search Refined, changed, widened Can't de-select industry to get all industries
11:49:45	Include Start-ups
11:50:00	Trouble Selecting many industries
11:50:30	Figured out multi-selection of industries New search query is set
11:51:00	62 jobs found Many are irrelevant jobs, EE related, etc.
11:52:00	Generic job postings Unclear what corporation does
11:52:45	User wants to hide jobs

	More underqualified postings
11:53:15	Found a good job, but underqualified
11:53:45	Tagged for "intern" but full-time was selected
11:54:30	Many one-sided results Just Mech. E. not Bio related
11:55:00	Looked @ another company
11:56:10	One job was PHP dev, w/ bio as major
11:56:35	More bad results "Offensively Unrelated"
11:57:40	One job for "Safety Manager"
11:58:00	Results shown that "Do not Qualify"
11:58:15	Go into new job Kind of relevant, but shotgun major approach
11:59:20	"Totally Unrelated" Software Eng. Software Quality
12:00:00	Geo Tech company comes up Selected All Eng. but this result is shown Shotgun major again
12:01:00	Page 3
12:02:00	Page 4 No relevant jobs to apply to

User wants:

- Be able to narrow search
- Have specific combinations of majors
- Hide unrelated jobs
- More specifically choose industries, locations, etc.

I.A.2 Activity Analysis Graph

Searching JobLink
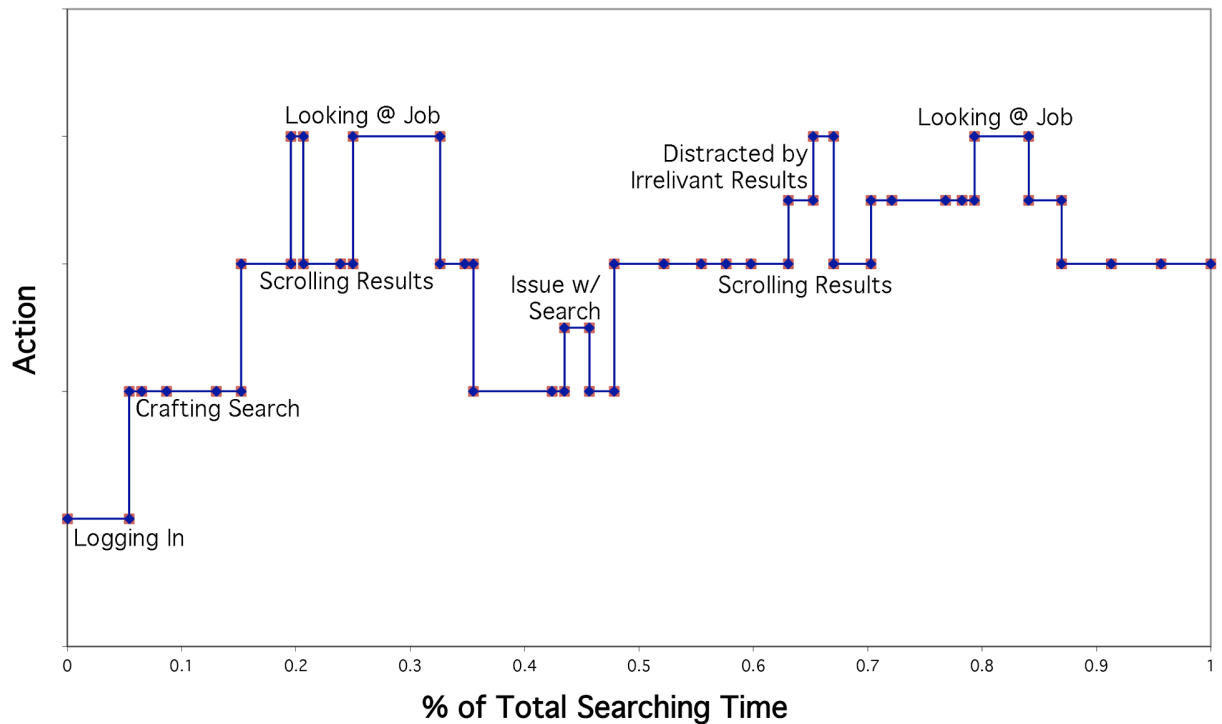
I.B Activity Analysis B

I.B.1 Activity Analysis Table & Notes

Time	Note
9:00:00	User enters "rpi joblink" into the URL ba
9:00:00	User clicks on the top link, linking to the RPI cdc pag
9:01:00	User clicks on the students link
9:01:00	User enters username and password
9:02:00	User clicks on the profile tab
9:02:00	Profile Loads, user scrolls down to the bottom and clicks next, User was checkin information to make sure it was correct
9:03:00	User scrolls down to the bottom and clicks next on the academic pag
9:03:00	User scrolls down to the bottom and clicks next on the privacy pag
9:03:00	User clicks the job postings tab, then clicks joblink lin
9:04:00	User scrolls down, types "User Interface" into the keyword bar and hits ent

9:04 - 9:10	User scrolls through selections of posts, hovering over one or two to read the quick info about the job posts
9:11:00	User Clicks the advanced search tab at the top of the search section
9:11 - 9:13	User enters UI into the keyword field, selects Games & Simulations Arts and Sciences in the Majors/concentrations field, clicks yes to ignore listings with all majors selected, clicks nationwide and united states for locations then hits enter
9:14:00	Clicks back
9:14:00	Removes UI from the keyword field and hits enter
9:15:00	Clicks back
9:15:00	Clicks no to ignore listings with all majors selected field, hits enter
9:16 - 9:20	User Scrolls through listings
9:20:00	Clicks documents tab
9:20:00	Clicks events tab
9:21:00	Enters "game" into keyword field and hits enter
9:22:00	Exits website, defeated

I.B.2 Post Analysis Q&A

1. *What is your main purpose for using JobLink?*
   a. I use it to find a job or possibly an internship for when I graduate.
2. *How often do you use the site to look for jobs or interviews?*
   a. I use it once a week, to check any new listings I may have missed.
3. *Have you participated in a research project or major class project at RPI?*
   a. Yes, I worked on a research project related to game design last semester, as well as many class projects.
4. *Have any of those projects required additional team members that were recruited outside of the original project?*
   a. The research project needed an additional artist that was recruited through friends and friends of friends.
5. *Do you think a website that combines the use of joblink with a research and project search would be useful to students at RPI?*
   a. I think it would be pretty useful.

6. *What about outside of RPI and at other colleges/universities?*

    a. I'd say start at RPI then extend outwards.

7. *What is the most aggravating part of using JobLink (besides not finding a job you want?)*

    a. The tag system is abused by a lot of companies, and list jobs under tags that aren't relevant to what I'm searching for.

8. *If you could make one thing simpler to use on the website, what would it be?*

    a. Definitely a better hover tool, most job listings don't put very much relevant information in the first paragraph of the job overview and then I need to click to another page to see it. I think if there was a way to make clicking the link an inpage popup that you can click out of without disrupting or reloading the search, that would be great.

9. *Was this a relatively normal session or do you normally browse for longer?*

    a. This was a normal search for me, although sometimes depending on the listings I see, I can browse for hours if a lot of new things come up.

10. *Are you satisfied with the way the website is now or do you think it needs more improvements to make it more usable?*

    a. It's definitely usable, but I think there is always room for improvement, like I said before a revamp to the hover feature or searching functionality would be fantastic.

I.B.3 Activity Analysis Graph

JobLink Search Activity Graph

Browsing / Perusing Jobs

Entering Search Criteria

Checking Profile

Getting to the Site

Action

% of Run
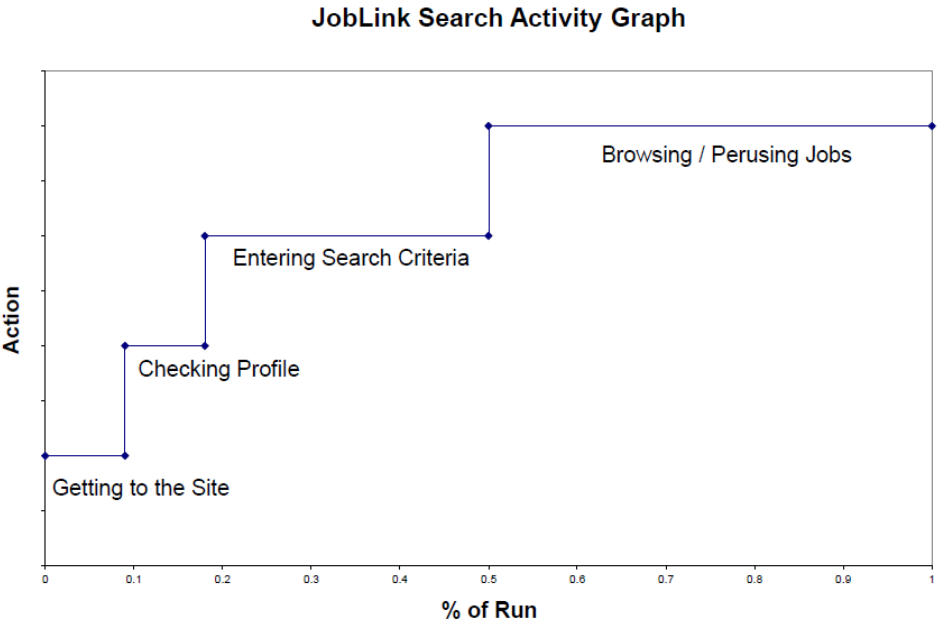
I.C Activity Analysis C

Observation: ~20 minute observation of a male student looking for jobs on LinkedIn.

Purpose: See the pros and cons of LinkedIn's job search.

I.C.1 Activity Analysis Table & Notes

Time	Notes
9:07 PM	*Start observation* *Subject is using my laptop with the LinkedIn homepage up in a Google Chrome browser (with several plugins). He is sitting at a desk with his headphones plugged into his iPhone, listening to a YouTube music playlist.*
9:07 PM	Types in username and password. Hits Enter and logs in to "dashboard". Starts off by looking at "What skills or expertise do your connections have?" section. He makes some endorsements and closes others. Scrolls down the page a little. Scrolls back up and briefly goes to look at Message notification. Looks at dropdown beside search bar before clicking "Advanced" on the right
9:08	Hovers over several search categories before checking off Internship under Experience Level. Goes to Keyword and types "game art". Hits Enter and sees three results; he snorts.
9:09	Clicks top result (Design Intern (Mobile/Socialgames)). Spends time reading job description. Clicks company name and goes to their LinkedIn page. Google searches the company name (FreshPlanet) and views their webpage. Browses briefly through their website and products.
9:10	Goes back to job page. Briefly highlights part of the job description. Reads it again. Sighs and goes back to search results page.
9:11	Opens remaining two jobs in new tabs. Goes to search bar and appears to be trying to remember something. Types in "time warner" and searches. Goes to Turner Broadcasting System LinkedIn page. Looks briefly at connections to company before going back to search results.
9:12	Clicks another tab (Mobile Game Developer Publishing Internship…) then quickly goes back to search results tab. Clicks back and opens up message notification in new tab. Searchers for "video game" in search bar.

9:13	Views one of his other tabs (Mobile Game Developer Publishing Internship… and reads job description. Looks at list of similar jobs at bottom of page.
9:14	Goes back to reading job description.
9:15	Google searches "Final Cut Pro" from job description. Briefly browses Apple's web page for Final Cut. Goes back to reading job description. Laughs at something in the job description.
9:16	Looks at similar jobs list again then goes back to job description.
9:17	Clicks Save button. Closes several tabs except LinkedIn search results and the job he was looking at. Opens four results in new tabs. Searches for "artist" which displays the results page in a new window. He closes the window and searches for "artist" again.
9:18	Goes to another tab (Social Media Intern). Reads job description. Laughs and says part of the job description outloud.
9:19	Goes to Mobile Game Developer Publishing Internship tab and reads job description. Uses Dictionary plugin to look up word "ideation".
9:20	*Skips ad on phone* Sighs and continues reading job description.
9:21	Goes to Save button and sees it says Saved. Says "Oh, I already looked at this." Says "Where are the jobs I saved…" Goes to Profile page. Goes to Jobs page. Looks on the right and sees Save jobs list. Says "Oh, right here." Views all jobs. Says "Closed, closed, closed" repeatedly. Says "Well I missed my opportunity."
9:22	Opens several company page from list in new tabs. Goes to 5th Planet Games tab. Closes tab. Goes to Booz Allen Hamilton tab. Scrolls through page. Opens a job in new tab.
9:23	Views all Booz Allen jobs. Search art in the search bar and narrows results. Searches game and gets different results.

9:24	Opens one of the jobs in a new tab and views. Snickers at one point while reading job description. Views another tab with a different Booz Allen job and reads job description.
9:25	Closes a tab and continues reading. Closes current tab and goes to a different tab and reads job description. Closes current tab and goes to Mobile Game Developer Publishing Internship tab. Reads job description.
9:28	Goes to Save button and sees it says Saved. Says "I already saved this?!"
9:28	*End observation*

I.C.2 Activity Analysis Graph

LinkedIn Job Search Activity Graph
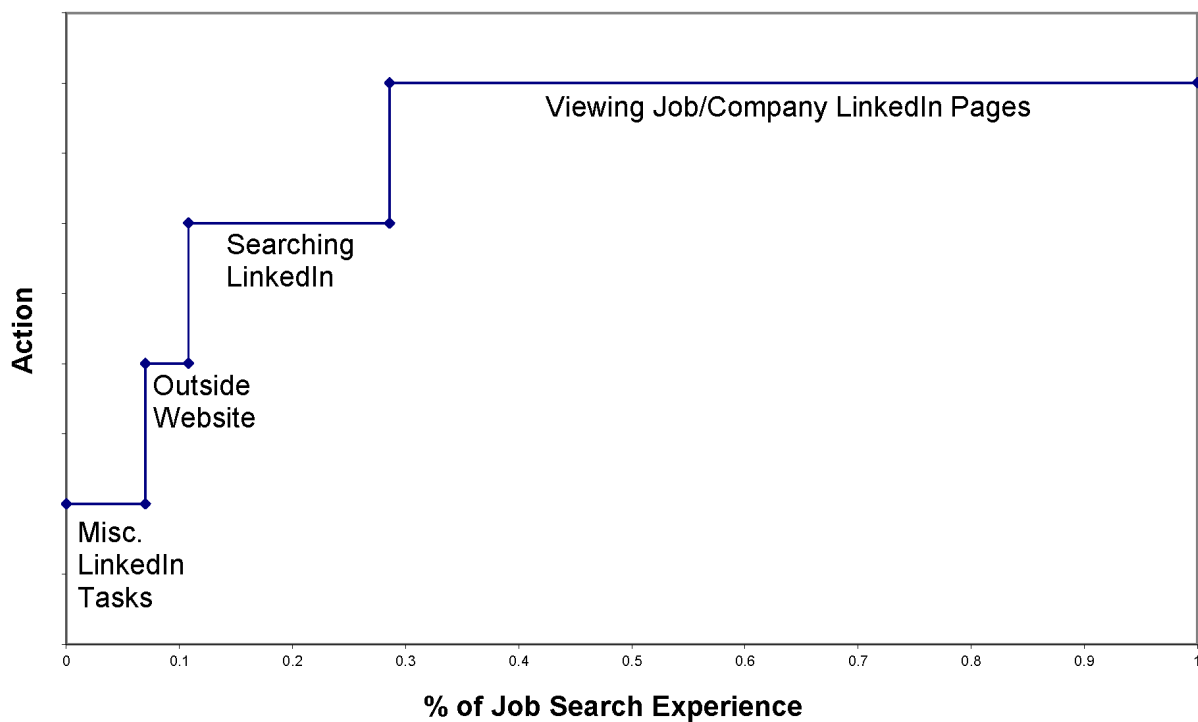
I.C.3 <u>Post Observation Questions</u>

1. *How often do you use LinkedIn for job searching?*
   a. 3 times a year.
2. *Did you do anything differently this time than before?*
   a. I went to companies' LinkedIn pages.
3. *What were you searching for mainly?*
   a. Art internships within the games industry.
4. *How successful do you feel you were in finding jobs? Why?*
   a. Not very. Many of them felt outside of my skill level.
5. *In one instance you looked at a company page on LinkedIn, then Googled that company and looked at their website. Why?*
   a. There were no pictures of what their products were. I also wanted to see if there were any Google top results that mentioned if the company was bad.
6. *I noticed a great deal of sighing. What was the usual cause?*
   a. Job requirements and expectations felt out of league.
7. *Would you have benefitted from a filter that matched your experience?*
   a. No, because I need to find something outside of my experience range. I can't just stick to my comfort zone. Besides, I wouldn't trust a program to do it right. I would rather look at all the options.
8. *I noticed you snorted or laughed while reading job descriptions. Why?*
   a. Funny job descriptions. "Imagine something indescribable, " for example. I found it funny that I was reading a lot of similar language; it turned out I read the same job four times.
9. *I noticed several times you read through a job before seeing that you saved that job previously. Do you think you know why this happened?*
   a. My presumption was that I did not see the job before.
10. *But wasn't there a save button that would tell you that you saved it before?*
    a. The save button doesn't change color, just text. At first glance you don't notice anything different.
11. *How strong do you feel the search options you used to look up companies and jobs were?*

  a. They were concise and what I was looking for. I assumed there wouldn't be many options for searching under the games industry so I just looked under internships and moved on from there by searching for key words under there.

12. *Why do you save certain jobs and not others?*

  a. Because those jobs seemed to be what I was qualified for.

13. *Did company description have any influence? Why?*

  a. Very little. It's more important to look at what I'm doing on the job. Also, I'm desperate.

14. *When you found your list of saved jobs, many of them were Closed. Were you surprised?*

  a. No.

15. *What use do you find the save function to be then?*

  a. For frequent users of the website.

16. *What was the best part of this experience? The worst?*

  a. Best: Finding one job seemed potentially good. Worst: Realizing I was reading the same job multiple times.

17. *Is there anything else you would like to add?*

  a. Not that I can think of.

18. *Is there anything you would have done to make the experience better?*

  a. Add more distinctive colors to things.