

Studio 2122: Dignity in Spite of Automation

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The Problem

In July 2019, McKinsey published a report on the future of work in America that revealed a startling estimate: by 2030, up to 25% of jobs in America might be displaced due to automation¹. The trend of automation making jobs obsolete is not new to the 21st century, with American manufacturing jobs in particular declining precipitously from their late 1970's peak². COVID-19 may have accelerated this trend even further: in August 2020, Time magazine reported an estimate that of the 42 million jobs lost during the pandemic, "42% of the jobs lost are gone forever" due in part to worker automation³.

What will these millions of people do after losing their careers? A popular counter to worries about automation is that individuals who lose their jobs can be trained in other jobs. However, job retraining programs are historically ineffective and as such should likely not be seen as the single solution, though they have definite promise⁴.

The economic implications of automation have been major topics of debate for various politicians in recent election cycles, for good reason⁵. Individuals need money to live, and fewer jobs means fewer opportunities for income. However, the practicality of income does not tell the entire story of why individuals enter, and remain in, the workforce: dignity also plays a significant role.

In our interviews with [retirees](#) and a [worker who lost her job due to automation](#), the pursuit of dignity was central to how they make decisions with their time. Our interviewee *I1*, an accountant who lost their job due to automation said that for them, "Working has never been

¹ <https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-in-america-people-and-places-today-and-tomorrow>

² <https://data.bls.gov/pdq/SurveyOutputServlet> Note: it would not be fair to attribute these jobs lost entirely to automation, as globalization and outsourcing has played a large role.

³ <https://time.com/5876604/machines-jobs-coronavirus/>

⁴ <https://www.theatlantic.com/education/archive/2018/01/the-false-promises-of-worker-retraining/549398>

⁵ <https://www.theatlantic.com/politics/archive/2020/01/andrew-yang-campaign/605056/>

only about earning money. It was a lifestyle. It was a way to be part of the community and do something for my surroundings". For /1, this wasn't just a statement: when their country entered an economic crisis, they worked without pay for over a year. Interviewed retirees expressed similar desires to contribute to their communities after leaving their careers, with our interview subjects both taking on volunteer teaching positions within their respective hobbies to attain this sense of dignity.

Solving the economic problems of workers who lose their jobs due to automation is so costly (certain policies have been estimated to cost upwards of 2 trillion dollars yearly⁶) that it is best left to the government as the only feasible source of funding is through taxation. Bringing dignity to these workers, however, does not necessarily require multiple trillions of dollars and is thus a more feasible problem area in which private solutions could have deep impact.

Our Solution

Our aim with this project is to design a solution that allows workers who are forced to leave the workforce due to automation to find dignity in how they spend their time.

One obstacle in the way of this goal is the relationship between income and dignity. A general attitude recognized in a number of our interview subjects was the notion that if a job pays less, it is less worthwhile to society. Thus, our solution should demonstrate the value of unpaid work in strengthening the social fabric and affirming dignity of all citizens, regardless of their income status.

Another obstacle in between workers and dignity are their own perceived weaknesses. One of our interviews was with an immigrant mother who doubted her employment prospects due to her broken English and limited physical capacity and skills. Our solution thus has to be flexible enough to ease these fears and hence promote participation.

A final obstacle in between workers and dignity is community, or the lack thereof. All of our interviewees expressed a strong need to feel connected to their community in some way in their work and felt lost when their connection to their community was taken away with their work. Losing their jobs, which had long been their avenue for interacting with society, severed this

⁶ <https://www.cnbc.com/2020/01/14/budget-neutral-universal-basic-income-plan-would-pay-1320-per-month.html>

source of self-worth and social connection. Thus, a key feature of our approach was to address the desire for community belonging and contribution.

Our goal is to recognize the dignity needs of workers and provide an avenue for workers whose jobs have been automated to achieve dignity. Such a project is not only important on an individual level, as identified by the needs of our interviewees, but also on a communal and national level due to the widespread impacts of automation.

Therefore, the majority of our ideation for approaches revolved around community-driven solutions. Three of our early ideas which were selected for storyboarding and client interviews were: [coordinated hobby groups](#); [neighbor profiles for initiating projects together and helping each other out](#); and [matching individuals with volunteer opportunities for social good projects](#).

These three approaches have much in common but are differentiated in the type of community that they would create. The first approach would create communities based on common activities or hobbies: carpentry, watercolor, exercise groups, etc. The second approach would create communities based on tasks: help plant a communal garden, clean up litter, etc. The final approach would create communities based on common volunteer interest: help at a children's hospital, a food bank, etc.

It became clear in interviews with these storyboards that these types of communities were very different from one another. A benefit of the first type of community is that it surrounds individuals with like-minded peers from whom they can benefit from and collaborate with: interview subject [P3](#) in particular was compelled by this idea. A drawback of this approach is that hobbies can feel arbitrary and thus do not provide a sense of worth or dignity: [P2](#) suggested that while learning a hobby might feel interesting, it is not fulfilling enough to afford the same dignity as a career.

The second type of community was relatively appealing to most of our interviewees if it existed in a vacuum but all had hesitations about whether or not they would actually use it. [P1](#), [P2](#), [P5](#) all suggested that they would not use the solution whereas [P4](#) was excited by the idea of helping with projects but not putting projects out there himself.

The final type of community, which connects individuals with volunteer opportunities, solves the issue of having a fulfilling purpose to the work but at the expense of the work being potentially less fulfilling. Many of our interview subjects expressed that they would love to work more with charities but [P4](#) and [P5](#) in particular had hesitations about doing “grunt work” (mailing fundraising letters, etc).

This feedback made clear to us that the most effective approach would be a combination of the first and the third approaches, taking the specialization component of the first approach with the purpose-giving component of the second. **Our hybrid approach is thus to create a platform that connects users with both skilled and unskilled volunteer opportunities for a variety of causes.**

This approach has multiple strengths. The core strength is the facilitation of meaningful interactions between users and their community as users will be able to choose to volunteer for a cause that is meaningful to them. Thus, users who felt previously disconnected from their communities and unable to contribute will have the ability to connect and contribute once more.

Another strength of this approach is that by focusing on volunteer work, the connection between income and dignity is severed and thus dignity can be attained through work in the absence of income. This is because volunteer work is, by its nature, unpaid: the satisfaction gleaned from this work is wholly due to the feeling of contribution towards a greater cause.

Finally, the flexibility of the volunteer opportunities means that there will be opportunities for both skilled and unskilled labor. While certain professional skills may well be useful (accounting, for example, could be extremely useful to non-profit organizations in the midst of fundraising), individuals without professional skills would still be able to contribute in a meaningful way. Thus, this alleviates the concerns of both [P4](#) who was worried about volunteer work being “grunt work” and [P3](#) who was worried about having no relevant skills. Under this approach, all levels of skill will have opportunities to contribute to meaningful causes and attain the dignity of work.

Our Competitors

Volunteering has been and continues to be one of the best ways to give back to one’s community. Given our interviewees’ expressed desires to contribute to their communities and

make a bigger impact even after they are forced out of their jobs, we came to the conclusion that the re-structured idea of volunteering can be the key to bringing dignity back to people.

Indeed, volunteering is a well-established industry and there already exist volunteering apps and websites, such as [GiveGab](#) and [volunteer.gov](#). GiveGab's mission is to create a fun, social environment connecting volunteers to non-profit organizations and, hence, their target audience is mainly the youth. On the other hand, volunteer.gov is a website run by the US government seeking volunteers for government based projects.

Our solution is different from both of these platforms and combines many of their strengths. In contrast to GiveGab, our solution has more emphasis on volunteer opportunities for mid- or late-career professionals. The other major competitor, volunteer.gov, serves the same demographic but only incorporates the government-affiliated projects and has no flexibility to initiate one's own community-based projects.

Furthermore, both competitor platforms lack the focus of community-building, while our main identified need during the interview process was exactly about community-building. Our app uniquely strives to operate at a local scale connecting people to community service opportunities in their close neighborhoods and dearest circles.

Our Prototypes

As a two-sided marketplace for volunteer opportunities, we made the early decision to create two separate products: one for volunteers to sign up for opportunities and another for volunteer coordinators to post opportunities. It should be noted that the same individuals can participate on both sides of the product: volunteer coordinators can also be volunteers and vice versa. However, we made the decision to separate our product into two separate products as we found that this relationship was generally one way: some volunteer coordinators that we interviewed were also interested in volunteering, but no volunteers that we interviewed were interested in coordinating opportunities.

Furthermore, there are significant safety and legitimacy concerns surrounding anyone being able to coordinate a volunteer opportunity. It makes sense, then, that the same individuals would have to make two different profiles with different levels of information for volunteering and coordinating volunteer opportunities.

Find a volunteer opportunity near you.



Rather look at a map?

See Map



Not sure what you want yet?

Browse All

Accounting



Kidsability

3.4mi away

Accountant needed on a daily basis to help settle accounts for our ongoing cancer fundraiser.

[See More](#)



Grand River Hospital

1.2mi away

Accountant needed on a daily basis to help settle accounts for our ongoing cancer fundraiser.

[See More](#)

Filter


Volunteer-side prototype

The first side of the product is the volunteer-facing side where individual volunteers can search for and sign up for volunteer opportunities near them. Users are able to search on a single field--for example, "Kidsability" or "Accounting" might surface the same results--or view results on a map near them. Users can also see a list of all nearby opportunities.

[Filter Opportunities](#)

Distance
Show opportunities within
 km

Time
Show opportunities on
Su M Tu W Th F S

Cause
 Education
 Children
 Hunger & Nutrition
[Show all causes](#)

Accessibility
 Wheelchair Accessible
 Hearing Accomodations
 Vision Accomodations
[Show all accomodations](#)

Search Saved Messages Profile

Search Filter

For more complex queries, including queries surrounding accessibility concerns, the user is able to filter the opportunities displayed based on their preferences. This filtering can be done regardless of whether the user has searched for keywords, is viewing a map, or is viewing all opportunities.

Kidsability

3.4mi away



Marcus, Angie, and 40 others volunteer here. [See volunteers](#)

Accountants, teachers, chefs, and 12 other positions needed. [See opportunities](#)

Kidsability supports over 11,000 children and youth to reach their communication, social, physical and behavioural goals each year. Using a blended model of virtual and in-person services, at KidsAbility, we help children, youth and families to achieve great things at home, at school and in their community.

[≡+ Save](#)

[Contact](#)



Search



Saved



Messages



Profile

Volunteers at Kidsability



Marcus Wolf
Child Educator



Angie Wang
Outdoor Education



Cindy Star
Cooking Instructor



Xenith Fisher
Community Advocate



Megan Goldstein
Social Media Manager

Opportunities at Kidsability

Chef

We need an experienced chef who can help with lunch production.

Su M Tu W Th F S

10am - 2pm, Monday - Friday
(part time available)

[Contact](#)

Teacher

We need an experienced and patient teacher to help elementary students develop abstract reasoning skills.

Su M Tu W Th F S

9am - 5pm, Monday - Friday
(part time available)

[Contact](#)



Search



Saved



Messages



Profile



Search



Saved



Messages



Profile

Opportunity Screens

Once the user has selected an opportunity, they can read more information about it including the available opportunities and current volunteers who are participating with the organization. This connection to real people creates a sense of community, as our interviewees such as [I7](#) indicated. Furthermore, by providing a list of the specific opportunities available, we are able to give both individuals looking for skilled and unskilled work access to their preferences--a major obstacle identified in our needfinding process.

Messages

Marcus

Kidsability

ABLE2

Search Saved Messages Profile

Marcus

Hey John!!! Thanks for reaching out, I'd love to grab a coffee somet...

You

Hey Marcus! I was wondering if you'd be willing to talk to me about what it's like to volunteer at Kidsability?

Marcus

Hey John!! I would love to do just that. Want to grab a coffee sometime? We can also just text if you'd prefer!

You

Hi there! My name is John and I'm a retired accountant who is passionate about working with kids. Would love to help out!

Kidsability

Hi John! So glad you reached out, we could really use your help! Are you free to come by tomorrow around 4pm?

You

Let's get a coffee, I could get out of the h ➤

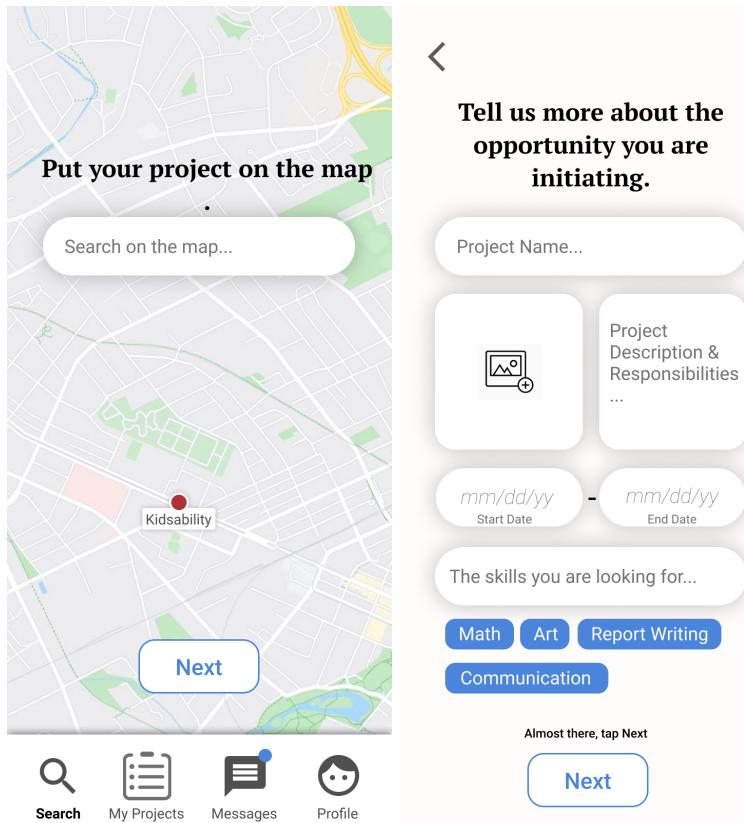
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M ↵
123 ☺ microphone space return

Totally, could you confirm the address? ➤

Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M ↵
123 ☺ microphone space return

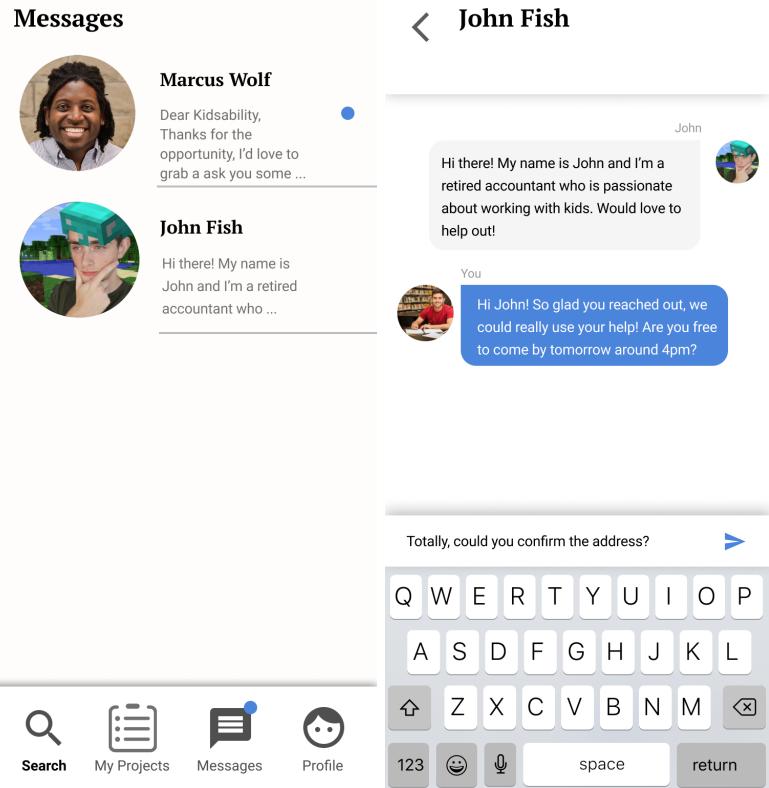
Messaging

Finally, prospective volunteers are able to message current volunteers and volunteer opportunities alike. This departs from our competitors who rely on archaic online forms or email. Allowing for in-app messaging creates a sense of informality which was identified by interviewees such as [I8](#) as being an element which would build a sense of community.



[Nonprofit \(Initiator\)-side prototype](#)

Our second prototype enables volunteer coordinators to post opportunities. Volunteer coordinators can first explore the neighborhood map to see what opportunities have been posted. To post a volunteer role, volunteer coordinators can first select their organization location on the map. Then, they can describe their project, terms and conditions, and upload a picture. The sign up and onboarding for volunteer coordinators/nonprofits is a little more complex for de risking and verification purposes.



Messaging from the coordinator side

After initiating and publishing the opportunities the coordinators can interact with the willing volunteers via messages or they can search for volunteers and reach out to them directly.

The design language of the product was chosen with simplicity and accessibility in mind. We use the same white background and black text throughout with both shape and color indicators when necessary (blue circle to indicate unread message, for example). We use large buttons for accessibility purposes and include on-screen text with our icons for the purposes of screen-readers.

Earlier design concepts can be found in the [Different Design Concepts for Prototyping](#) section of the Methodological Appendix.

Key Risks

At the core of our project is an assumption: individuals who lose their jobs will be interested in volunteering. However, a cursory dive into available information on the demographics of volunteers presents a thesis contradictory to this assumption: according to the US Bureau of Labor Statistics in 2015, only 23% of unemployed individuals volunteered compared to 27% of employed individuals.⁷

There are a number of reasons why this may be. According to research published in 2016 by Piatak, unemployed people are less likely to start volunteering due to social isolation from lack of work, but if they receive personal invitation from friends, then they are likely to be able to devote more time to volunteering⁸.

Furthermore, it seems that volunteering can help people practice skills and build social ties to become employed again. A 2013 study found that volunteering is correlated with 27% higher odds of employment⁹. Thus, our solution should be revised to better encourage unemployed people to get into volunteering, including by encouraging their social network to nudge them to volunteer.

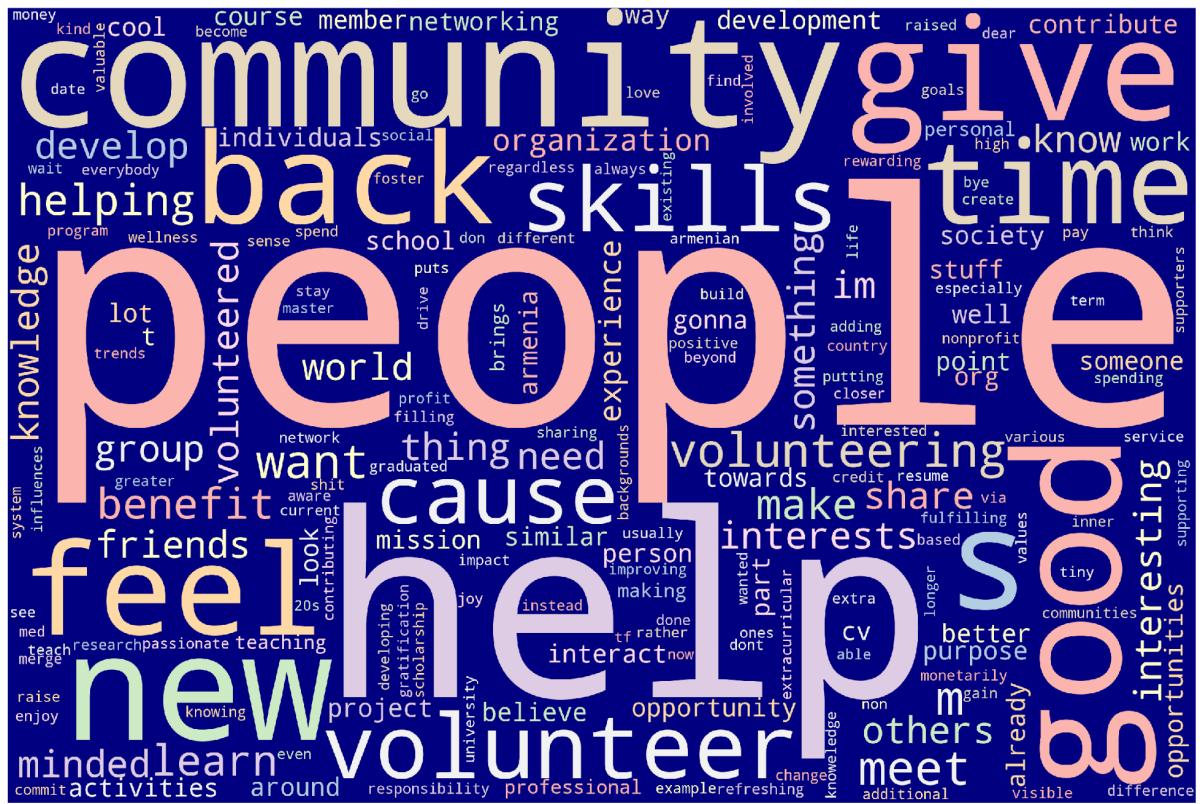
The literature seemed to suggest that community was a critical factor in encouraging individuals, and in particular unemployed individuals, to volunteer. We decided to validate this hypothesis by conducting a survey amongst 51 individuals, a majority of whom were active volunteers at an NGO. Our survey consisted of four questions and was primarily centered around the motivation surrounding volunteering.

The results were extremely telling. The majority of the most common reasons for volunteering were community-centric. We created a word cloud to help illustrate these results.

⁷ <https://www.bls.gov/news.release/pdf/volun.pdf>

⁸ <https://journals.sagepub.com.ezp-prod1.hul.harvard.edu/doi/full/10.1177/0899764016628295>

⁹ https://www.nationalservice.gov/sites/default/files/upload/employment_research_report.pdf



This research process identified a new focus for our design: though we had previously considered community a major aspect of our product, it had taken a secondary role to our task-oriented designs. That is, the flow of both of our initial prototypes were centered around connecting users with volunteer opportunities immediately with community features (such as chatting) coming only afterwards.

Following this research, we integrated the “See Current Volunteers” feature and the ability to message current volunteers. This iteration proved to be successful at creating community as we found in our interviews with volunteers as previously identified.

Evaluation of Prototypes

We tested our prototype with two types of stakeholder groups. The first group were individuals who lost their jobs due to automation (or other reasons) and are struggling to find work. We asked people who are currently volunteering and those who are not in order to understand what motivates people to volunteer. Given the challenges with identifying people who lost their jobs specifically due to automation, we will broaden our participant pool to include retirees and those

who are unemployed prematurely. Since people often do not specify their reasons for unemployment, it has been challenging to find a clustered group of people, who are often from rural lower-income backgrounds, who lost their jobs specifically to automation.

The second group of stakeholders were volunteer coordinators: people and organizations that post volunteer opportunities. Although there is often ample demand for volunteers, volunteer coordinators may face difficulties with posting roles and finding suitable volunteers. By addressing these two stakeholder groups, we will have addressed both the demand and supply for volunteers. We plan to reach these groups by tapping into our social networks and cold calling people in cities affected by automation.

We conducted our prototype test by first asking users about their background and pain points. Emotional pain points include feelings of social isolation, low self-esteem, and levels of respect in society. Practical pain points include difficulty with finding ways to get involved in one's community and share one's skills via volunteering. We will evaluate how well our solution addresses these emotional and practical pain points around community engagement. Then, we asked the stakeholders to try out the prototype and speak aloud their thoughts and reactions to it throughout each screen. We recorded any difficulties or confusion, any strong feelings about the product, and whether it addresses their needs.

For the first stakeholder group of unemployed potential volunteers, we asked them to imagine that they have just heard about an app that helps them share their skills and contribute to their communities. In addition to the grounded brainstorming technique, we asked users to complete specific tasks. These tasks include creating a profile, identifying suitable volunteer opportunities, and messaging volunteer coordinators to sign up. We observed how well users can accomplish these high-level tasks, and if necessary provide more specific instruction and hints to guide the user. We also recorded whether the users engage with the app, where they may drop off, and what type of user will successfully sign up.

For the second stakeholder group of volunteer coordinators, we asked them to imagine that they just heard of a new app that helps people who lost their jobs with finding ways to help their community. We then saw how the volunteer coordinators take the steps to create a volunteer posting, or whether they may drop off at any point in the process. After the free-form exploration phase there were three tasks that we prepared for them:

Task 1: Create your profile, access the profile and check the volunteers working in your non-profit.

Task 2: Create an opportunity, publish it. Go back, edit the opportunity and publish again.

Task 3: Engage with potential volunteers.

All of these tasks allowed us to evaluate how effective and understandable the design language is for the stakeholders. We measured how easy and intuitive it is for volunteer coordinators to post opportunities, ask how many roles they would post now and in the future, and later see whether volunteers would want to sign up for such roles if they were posted. These steps helped us identify how convenient and important our app will be for volunteer coordinators to post opportunities for community engagement.

Overall, our prototype satisfied our user needs based on our goals. Our key decisions were to increase levels of community belonging, civic engagement, and sense of dignity.

We recruited participants by personal outreach via email and scheduled a Zoom video meeting. We sent them our Figma prototype, asked them to share their computer screens, and explain their process with using the app. We followed our evaluation plan (described above) to measure the effects of our app on our key decision goals.

We interviewed two people from the volunteer group and two people from the volunteer coordinator group ([interview notes in appendix](#)).

Regarding community belonging, user I4 mentioned that she felt excited about signing up for volunteering. She said she would feel greater self-esteem and belonging after volunteering. The app improved her community belonging because she was connected with a volunteer group to form friendships and an organization to contribute her skills. Thus, she felt greater social bonds with both her fellow volunteers and community at large.

For dignity and respect in society, user I4 mentioned that volunteering would improve her self-esteem and dignity because her friends would respect her for making the effort to volunteer. This respect from her peers helps her feel that her contribution matters. To improve the app, the user mentioned that she would appreciate it if the app could connect her with people or training

programs that could equip her with the skills to volunteer. For instance, the user may be interested in sewing sweaters for the elderly, but may not be familiar with sewing techniques. Our app could connect her with a group that could train her with the skills and also socially connect with. Thus, the app would give her the skills and confidence to contribute to her community.

Our app helped to improve civic engagement because it is simpler to sign up than other ways that users I4 had used. The user mentioned that she would prefer an organization to directly contact her when a new opportunity arises, instead of her having to search for new roles each time. By enabling volunteer organizations to directly reach out to users with relevant skills, the app could significantly increase civic engagement.

Concerning the volunteer coordinators' interviews we are pleased to mark that both I5 and I6 found it very intuitive to make use of the app and accomplish the given tasks. Both of the coordinators were able to create and publish interviews without any difficulties and had comments such as "this is easier than creating a job posting on LinkedIn". Moreover, they shared that most of the time the audience and the expectations in LinkedIn are not well-suited for their needs. People on LinkedIn treat their opportunities as paid jobs and not volunteering, and have different expectations. In contrast to that, our app will provide them with an existing user-base of volunteers and matching the expectations for the two stakeholder groups.

Both interviewees had a couple of suggestions about having a flexible search feature for both volunteers and volunteering opportunities which we have incorporated in our prototype. In terms of design, I4 and I5 mentioned that the app is professional enough to feel part of a serious community, but it is also relaxed allowing for exploration and creativity. They have also mentioned that this app would be a great tool for marketing their projects and learning about other nonprofits' projects which can lead to more partnerships and collaborations. Even though, we have not foreseen the marketing and collaborations aspects for nonprofits while designing our app, it was nice to hear about the positive externalities of our product.

Accessibility Statement

Our app strives to be accessible and inclusive to all groups. Our volunteer users include young adults and older retirees. Older retirees may have problems with seeing small text on screen and clicking small buttons. Therefore, our app is designed with high-contrast, large fonts and large-clickable buttons. Also, since older people may not be familiar with novel smartphone features like unintuitive hovering, our app uses a simple, text-based interface throughout.

We use system-standard messaging platforms (like the one built in iPhones) so that users with accessibility needs can continue to use their familiar accessibility features, such as screen readers and special keyboards.

The filter feature enables users to filter the list of volunteer opportunities based on their accessibility limitations. For instance, if a user has motor impairments, they can note that in the app so that they can see opportunities that do not require physical movement, such as reading to kids.

For users with vision impairments, our app strives to accommodate their needs. For color-blind users, we carefully select colors that are accessible-friendly and provide color contrast.

Our app is careful to not unethically manipulate users beyond their will to sign up for volunteer opportunities they may not be interested in. While we hope that users contribute much to their communities, we respect user autonomy and intentions. Thus, our app avoids unnecessary nudges and push notifications. We enable users to opt-in to whether they want to be contacted by volunteer organizations, and users can easily opt-out any time. We respect user privacy by enabling users to hide or delete their account at any time. Also, our app takes a positive, respectful, and encouraging tone. Thus, our app respects user autonomy to pursue freely their levels of community contribution.

Conclusion

There are a variety of reasons why individuals cannot participate in the workforce, but the simple fact is that this contingent of individuals is growing by the day due to forces such as automation. Widespread automation will result in many sweeping changes to the way that we

live and work, some for the better and others for the worse. As our interviewees who lost their jobs due to automation found, one of the worst implications of job loss due to automation is the loss of dignity.

With our product, we aim to give individuals the ability to achieve this sense of dignity by providing them with a platform through which they can join a community of volunteers working for a meaningful cause. This is very different from the current solutions which primarily exist on a transactional per-opportunity basis.

It is clear that solutions such as ours will be required in the future to help individuals like our interviewees find community and dignity in a world where their careers have been automated away. From the results of our evaluations, we believe that we have achieved significant progress towards achieving this ambitious goal and look forward to seeing where we can take it next.

Methodological Appendix

Needfinding

[Problem Area Candidates](#)

[Rough Interview Notes + Research](#)

Interviews

I1, 61, Former Accountant (I1)

Jemma used to be an accountant in a high school in her town. She lost her job when the new accounting software was introduced, and all the schools in town could be managed by only one accountant who was running the centralized accounting software. She was fired with 1 month notice. The only accountants who stayed were the young ones who could adapt to the new technology.

How old were you when you lost your job?

I was 55. I loved my job, going to school and giving people salaries. I could still work for many years in that position.

How did you feel when you learned about your job loss?

At first, I thought there was a mistake because I always knew I was good at my job. There was no way I would make any mistake in my counts. But they told me that they had a new computer program which does the work much faster and much more efficiently than all of us together. To be honest, I felt useless. I felt offended that they were replacing me with a computer program, but I didn't even know who I was getting offended from.

Did you search for other jobs?

I loved being an accountant and if I worked I would want to work with my profession. I think I had a little depression for a month after my job loss, because I did not want to do anything and I was telling myself that soon I would retire anyways and the government would pay me. It was hard to wake up in the mornings and find a reason to start the day. After being energetic and an essential part of my school community, it was hard not to be part of the community anymore. In

a way, I also thought people(my friends) would look down at me. To answer your question, I did not search for jobs. I was afraid they would replace me again. And I was getting old anyways.

What did you do to fill the free time?

Hobbies! I always loved knitting so I picked it up again. I started designing clothes for my daughters and granddaughters. Making my loved ones happy made me come back to life. Soon my small grandchildren were at school age and I started teaching them at home. I am spending my free time contributing to my family. I also have more time now for watching TV shows - I did not have that time before.

If the government were to pay you all your life, would you still work?

Absolutely, yes! Working has never been only about earning money. It was a lifestyle. It was a way to be part of the community and do something for my surroundings. When you work, you feel so much more useful to society. I even worked without earning when the country was in an economic crisis back in the day.

I2, 70, retired IBM engineer (I2)

- Retired 10 years ago
- Spent some time feeling “lost” in the years immediately after retirement
- Found that it wasn’t enough to just “see where the wind takes him”—had to participate in things with structure
- Joined a golf club to teach lessons + compete and golf became an increasing part of his life
- Physical issues limited his ability to play golf (eyesight)
- Turned to trying to learn how to write
- Went to a bunch of different writing workshops, etc
- Began writing short stories
- Is now in the process of writing a book
- Has a writers group that he meets with regularly to share progress + mentors from the workshops

I3, 68, retired entrepreneur (I3)

- Retired 13 years ago from selling books
- Was already hobbyist (watercolor painter) so dove into that way deeper

- Spends a lot of time now going to different galleries + lessons + shows
- Her home basement is “covered in canvases”
- Now considers herself a “pro-hobbyist” painter as she’s sold her paintings for a few hundred \$
- Also has spent more time with family since retirement; lots of time with grandchildren + children, though the closest child of hers lives an hour away so not an everyday occurrence
- Has a few groups of painters she is a part of and it really helps projects move forward + stay on track
- Painting is mostly solitary for her, though, but the gallery + lessons aspect is communal

I4, 50, Korean immigrant mother (I4)

Problem

- Failed to find good fit job. She prefers a standard, traditional company work process, where she can work hard in system (instead of a real-estate agent role).
- She doesn’t think employers will select her because of her limited English and no US college degree
- She currently is not seeking jobs because of special circumstance of moving and buying new home.
- Reading/writing English fine, but not confident about conversational speaking
- Don’t have license (medicine, law, accounting, etc). Even GED is needed for McDonalds worker.

History

- Marriage became start of career (changed around after 5 years). Mostly raising kids throughout life, so no chance to apply. (Korean government now pays for child care). As described in a novel, Korean women her age often feel like domestic maid.
- Previously worked at TJ Maxx cashier, but tiring physical work
- She considered getting a Nursing Aide certificate at community college, but registration, exams, English, and fees can be a deterrent

Desires

- She would've liked to be a doctor of medicine. She likes to apply knowledge. There's less racial discrimination in technical roles (versus in business).
- Her strengths/skills are in kind, caring service and good impression to people. Good fit jobs may be flight attendant, social welfare, nonprofit.

Current solutions

- Korean immigrants in her situation often just start small businesses, restaurants (chicken, pizza, donut), handi-man (electric, plumbing, car) to make money.
- Non-paid options include joining community groups (Dallas Korean women's association), volunteer, hobbies (painting, craftwork)

Ideation for approach thesis

EMPHASIZE:

We are targeting and trying to tackle the feeling of uselessness to society.

Need: bring back the dignity of work

Find ways to give back to the society

Manana

- **Mentorship** platform where the experienced retirees can exchange their knowledge
 - Advice platform
- Projects for public good - community driven platform
- **platform for connecting with NGOs**
- collaborative network driven education platform
- Shared calendar of events ? 😊
- Platform for getting new **hobbies**
- Counseling for early job-leavers

John

1. *Community service project groups (repair potholes/prune gardens/pick up trash/design posters for event/etc.)*
2. *Nonprofit volunteer forum (sign up to help with public/nonprofit initiatives--help distribute vaccines)*
3. Communal classes (learn meditation, painting, etc.)
4. Contract work on demand ("i need help building a shed")
5. **Interest/hobby groups that meet daily/regularly**

Kyeon

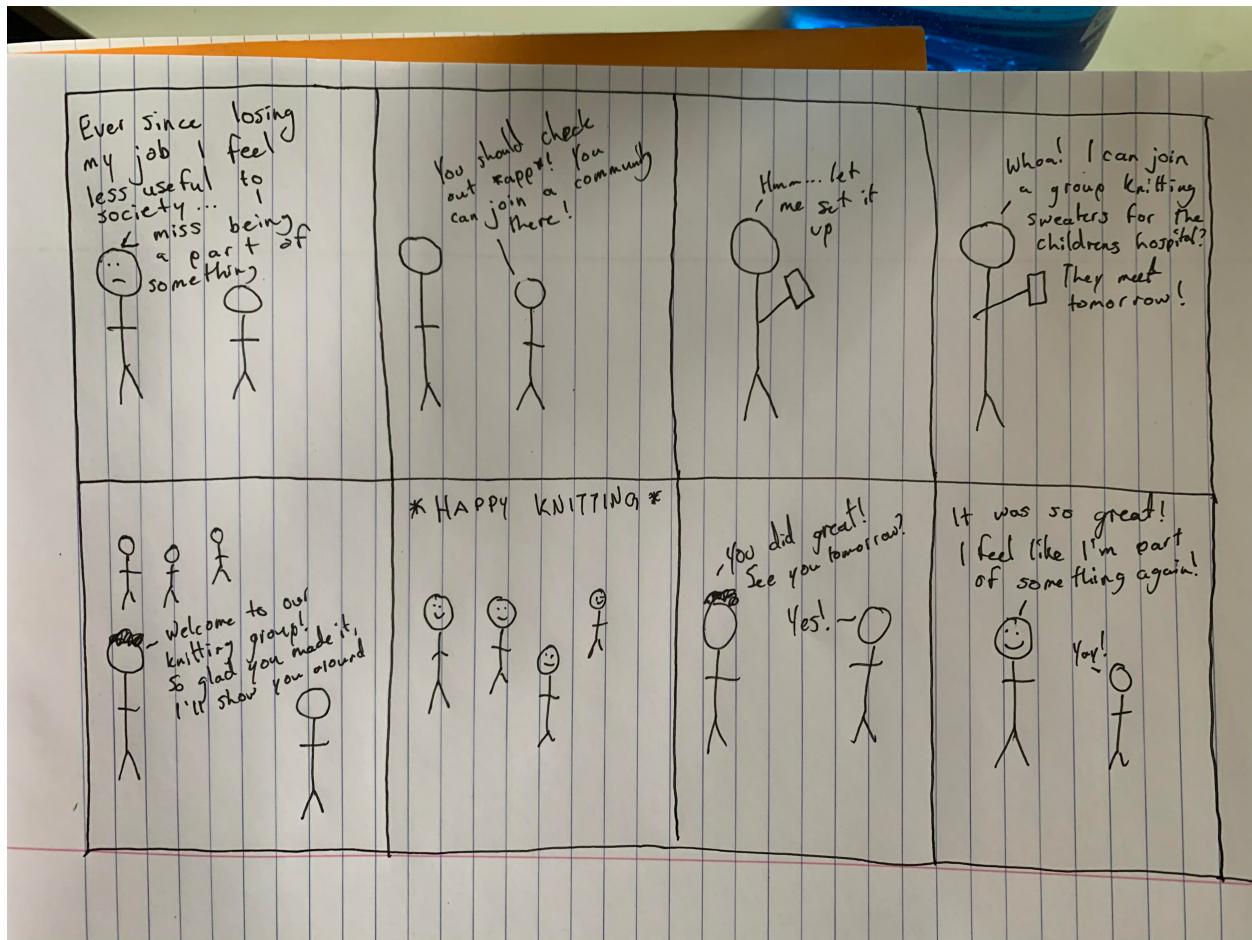
1. Online community/neighborhood help dashboard. Nextdoor.com style, but simpler and easier for less tech-savvy people who want more in-person/video interaction, more family-based
2. A more specialized platform of above, where encourage elderly to organize events and lead community projects.
3. **Job board listing for more community-development projects, funded by local government, companies, and organizations. Parker Dewey micro-externship style (time frame). But maybe avoid funding? Help users find other entry-level jobs?**

Themes and notes

- Social good, environmental,
- Share experiences, skills, mentor, hobbies
- Exercise more soft skills like wisdom, leadership, humility
- Group identity. Build community
- Greater commitment (daily meet) like career
- Lonely, disrespected by injustice of social status--useless?
- Purpose, meaningful work.
- Automation job loss: many people lose jobs at once, larger wave, feel disrespected by robots, your skills don't matter. Motivational aspect, your human skills matter too. Human-computer collaboration.

Storyboards

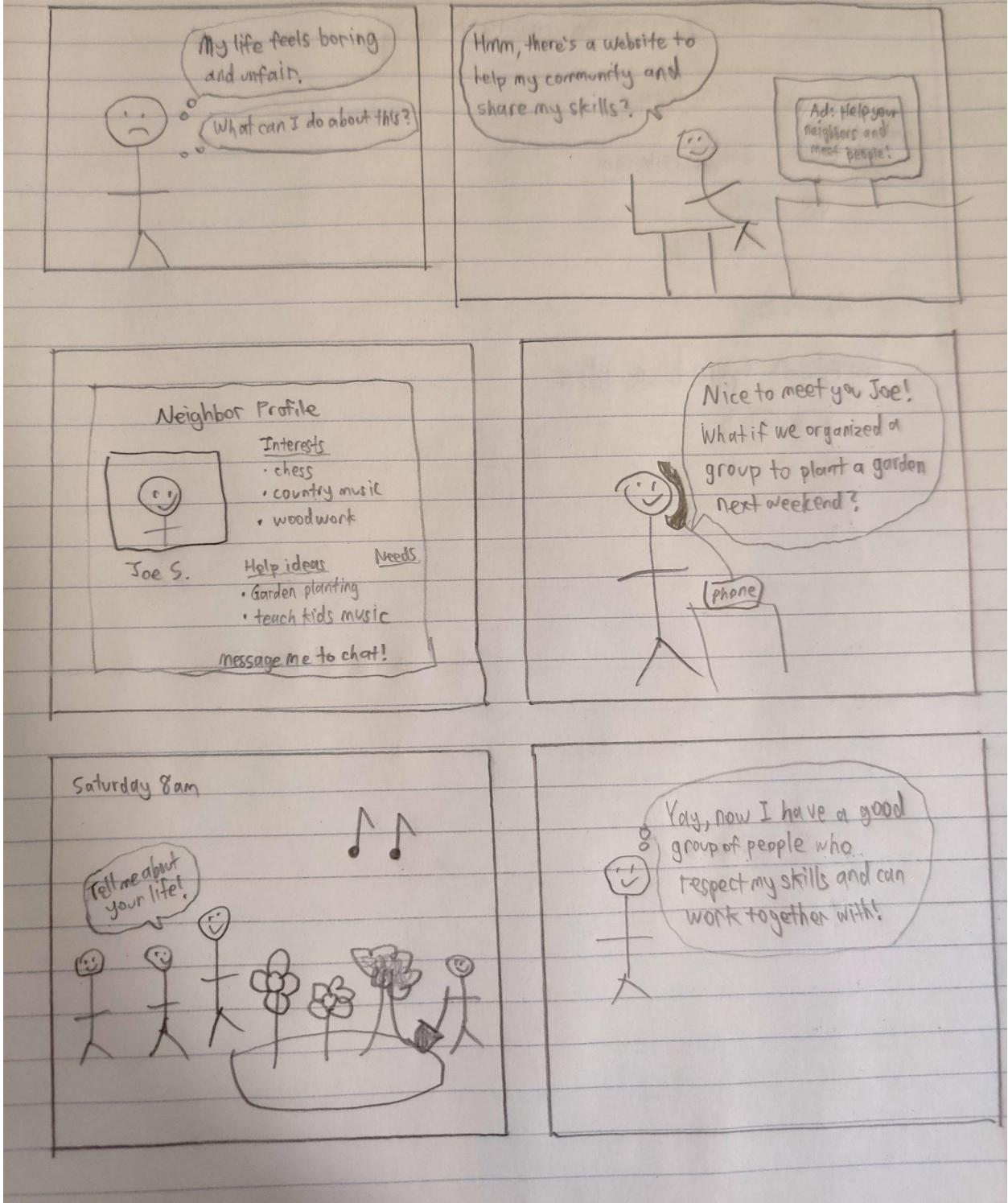
Storyboard 1



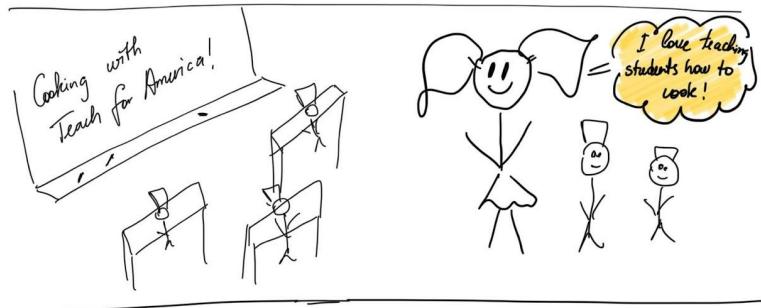
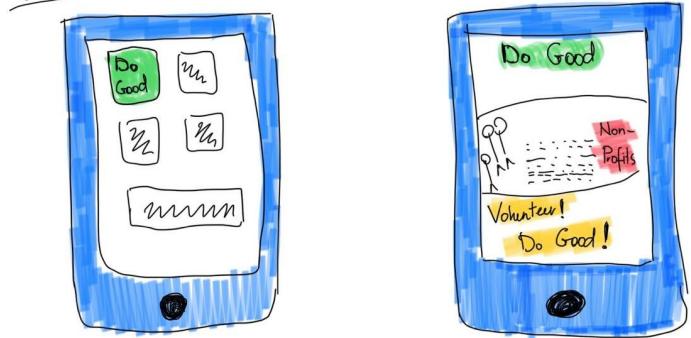
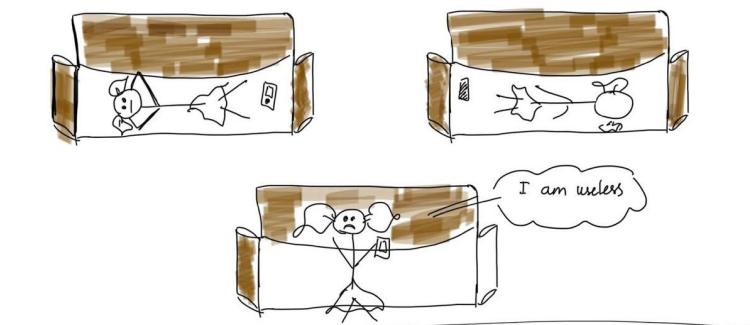
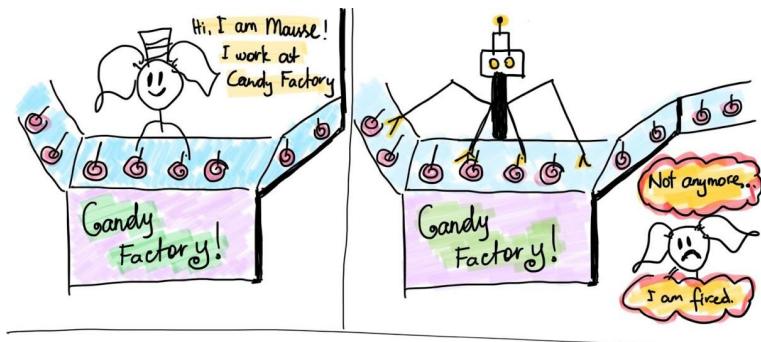
Storyboard 2

Storyboard

3/18/21
KL



Storyboard 3



Need-finding Interviews

P1, retired architect

Background info: P1 has retired early, when he was 48, since the private company he was working for stopped its operations. After he retired he picked up the task of renovating his house and building houses for his sons.

- Two favorite solutions are the hobby-oriented product and the neighborhood help
- He thought that if he wanted to work for non-profits he would directly go to the non-profits
- He found the neighborhood idea exciting because he still does not know his neighbors and they could definitely collaborate together
- He was able to concentrate on his favorite hobby after retiring, so he definitely sees value on having hobby-specific communities
- He is not sure if the neighborhood app will be effective though
- Do people need to initiate projects? Or do they just get help when they need it?

P2, retired accountant

Background info: P2 used to be an accountant in a high school in her town. She lost her job when the new accounting software was introduced, and all the schools in town could be managed by only one accountant who was running the centralized accounting software. She was fired with 1 month notice. The only accountants who stayed were the young ones who could adapt to the new technology.

- I do not think the hobby platform will solve the issue of bringing back the dignity of work. For me I liked contributing to my community and making an impact. If I am just learning a new hobby, that will be just filling the time.
- When I first left the job, I would not think of using any app/platform that asks me to initiate projects or tasks. I did not have much motivation to initiate something. So,

probably I would like a more controlled approach of enrolling me in a new community.

Will the non-profit matching be more supervised?

- I think the neighborhood app is exciting, but I do not see myself using it.

P3, retired immigrant mother

- She thinks it's less likely that she'll start looking for community service work because she has nothing to do because of automated job loss. She'd likely observe the robot and see how she could adapt, instead of suddenly switching to a new field like volunteering. She'll need intrinsic motivation to act: *wanting to socially connect, help people (altruism), and try her hobbies and interests.*
- She likes the idea of an app that helps connects her with people with similar interests and organize projects. She's not familiar with how to build a neighborhood garden alone, but it'd be nice to learn from others with their tools.
- She's ok with doing this for free because it brings her happiness to help and share skills (though others may want to get paid)
- Despite her English language barrier, she might still be willing to call neighbor if strong need (learn gardening)
- She doesn't know if she has much skills to contribute though. One of her interests is babysit a child (preferably under 4 years) for a few hours. A second skill is home interior design (staging, arranging) within an hour. (She's a real-estate agent with experience helping home sellers sell their homes).
- She used to attend the Fort Worth (Korean) Women's Association. One of the events was knitting using dish cloth and giving it to elderly. She just had to show up and they taught her with all the tools.
- Reactions to mockups (3/25): She is not sure what skills she has that would be valuable. She thinks she can help organize interior design and child care. She may do things if other people taught her (how to garden, etc.) However, she is feeling tired from moving this season, so not likely to use the app now.

P4, retired engineer

Worked for many years running mainframe computers and setting them up for various corporations. Eventually cloud computing became more dominant and his work became less

and less relevant; he retired at this point because he had enough saved up and it wasn't worth spending a few years learning the skills necessary to do cloud computing when he would retire soon anyways.

- Already a part of hobby groups so would really enjoy being able to find more
- One of the problems with hobby groups is that they're only as good as the people in them; you often need strong leader and without one they don't meet/are bad
- Not sure if hobby group is sufficient. Is it enough to be fulfilled? Thinks if he just did his hobby groups then things might feel empty... no sense of contribution unless he's leading it/teaching
- Volunteering is interesting, does a lot of volunteer work in his free time and likes contributing to community like that
- Volunteer work sometimes feels unskilled; checking people in, handing out cans, etc. and this is not always mentally fulfilling
- Thinks the project idea is cool, would enjoy helping people with little things (building sheds, etc) that he knows how to do
- Not sure how many projects people would feel comfortable posting... can't imagine posting one himself

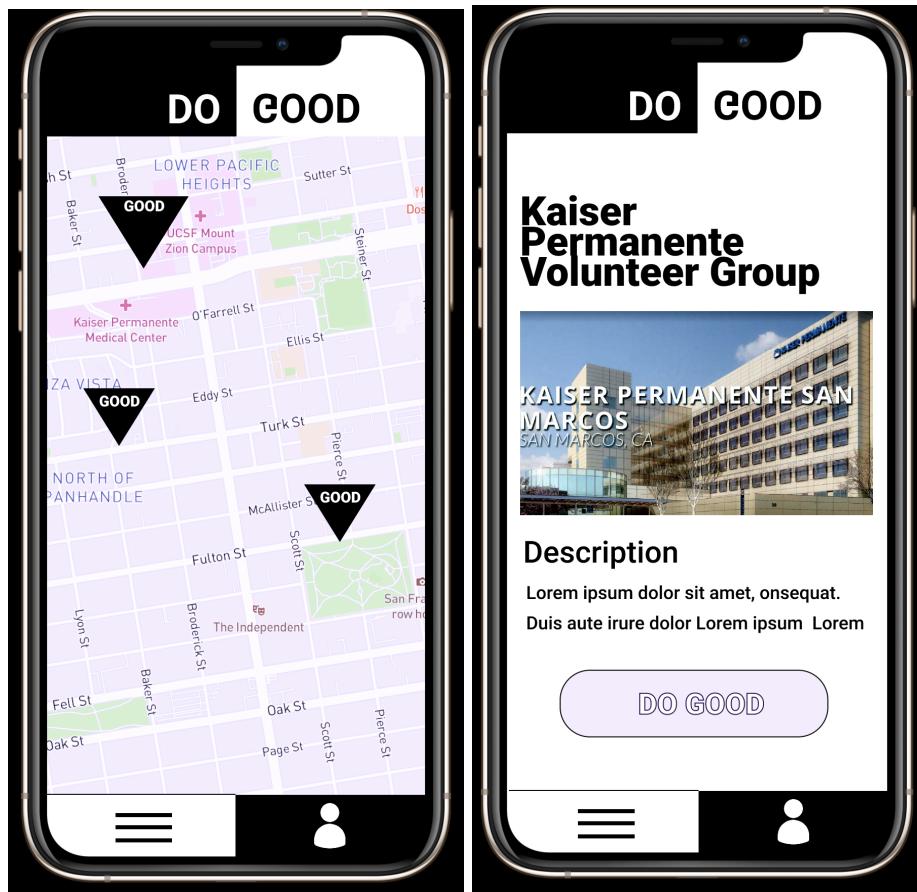
P5, retired entrepreneur

Ran a book company for many years, was especially successful with childrens books. Eventually, online companies pushed her out of the business because of their lower margins and storage cost--her clients all moved to bulk ordering directly from publishers online. She had a good nest egg at this point and retired.

- Really likes being in hobby groups and this is the main source of her fulfillment now, art groups
- Likes the idea especially of hobby groups *for something* eg. knitting for children's hospital (purpose element)
- Has noticed difficulty in consistency with hobby groups: people want to come a few times but don't want to return
- With volunteering, she finds it hard to find opportunities that align with her skills as most volunteer work is grunt work

- Would really enjoy being able to use her skills for good, no pay needed, but struggles to find opportunities for this
- If the volunteering was skilled, she would be super interested but she wouldn't want to sign up just to carry boxes around or mail letters out for fundraising
- Has a hard time thinking about what projects she would post for the third idea
- If she saw an opportunity that aligned with both purpose + skill she would be tempted to do it
- Not sure if temporary belonging is enough for long-term fulfillment (projects with timeframe = timeframe until lonely/unfulfilled again)

Different Design Concept for Prototyping



Nonprofit (Initiator)-side prototype (version 2)

UI Interviews

U1 - Prototype 1 - School Teacher age 55

- Beautiful landing page, likes the serif text
- Likes the idea of one box search like google, unlike complex searches with lots of fields (John note: real estate search can be like this)
- What are the pictures for in the search?
- Not sure all of the information on the description page is relevant to me, I want to know more about the specific opportunity (hours, type of work, etc)

- Loves that they can message, but who are they talking to?
- What information do I need to put in my profile?

U2 - Prototype 1 - Freelance Writer age 50

- Played around with navigation to start
- Not sure what the purpose of saved opportunities are if messages also saves list
- Loves the ability to click to see a list without having to search ("it's fun to just browse without knowing what's out there")
- Questions whether or not there would be enough opportunities in a smaller town to populate a list for search?
- Loves the chat feature, wonders if it would be better to connect with other contact (email)
- Thinks the profile is cute but not sure what the tags at the bottom are/how they are useful (John note: they are useful for recommendation but that's absolutely not clear in the prototype)

U3 - Litao, 25, Harvard Graduate Student

Prototype 1:

- Can I rank my saved list? It is easy to save a bunch of opportunities and then get lost there.
- I would prefer to contact them by email, since it is a more official opportunity.
- I would get rid of the messaging feature.
- Instead of long descriptions in the browsing window, I would just have tags. People are lazy to read and the window looks very wordy
- I like the profile page, but I would like to see the skills with percentage bars. Like 90% math, 10% art, etc.

Prototype 2:

- I liked the font, but the space in between lines is too small
- I like the local, map approach
- Add a search button to the map
- I am not sure if the color of the button text and figure are a good choice. Looks aesthetic, but usually people are used to darker buttons.

- Add finishing frame buttons on the last frame
- Overall, like the approach of this one better

Taline Mardirossian, 22, Research Scientist at Kaiser Lab

Prototype 1:

- loved the tabs
- good browsing options
- Messages idea is great so that the org can communicate directly
- easy to navigate
-

Prototype 2:

- map is a cool idea
- easily navigable
- maybe also have a list option
- Please, add a search button to the map

General Note: If you add the “list opportunities” feature to the second one, I will use that. If not, then I go with the first one.

Riskiest Risks Interviews

J1, 57, small business owner (not volunteering)

- Currently works full time, runs small business
- Volunteered 30 years ago at Junior Achievement volunteer program, where he tutored low-income high school students with Economics once a week. Quit after year because busy.
- *Why did you volunteer then and what impact?* He got some teaching experience. Learned something himself. Listed on resume too. Some satisfaction from teaching.
- *Why are you not volunteering now?* Busy with work, not interested in volunteering, lazy (not motivated). Won't learn much, little impact on career.
- Not much value added. He doesn't feel like he made a big difference just tutoring once a week, and many kids not seem interested in learning. Not much need for tutoring. Maybe more need at a food bank now.
- *What are your skills?* Educating kids, study habits and motivation. Human Resources consulting.
- *Where could you apply your skills?* He feels he'll likely use his skills at a job, not for volunteering. For example, learning centers, schools, company HR management, system design.
- *Do you feel valued in your community?* He feels some satisfaction from helping kids do well academically. He doesn't feel he's getting much help from the community or local schools.
- He thinks that people who lost their jobs will be demotivated and need to get a job and get paid. He doubts people who lost jobs will volunteer without pay as an incentive. Most

likely only rich people with spare time will volunteer. Maybe government should give money and training to contribute to the community.

I4, 50, Immigrant mother (not volunteering, unemployed)

- *When did you last volunteer?* When my kids went to school. Field trip supervise, school traffic control. *Why?* Also to help her kids.
- Volunteered at Fort Worth Women's Association couple years ago. Met in groups to knit sweaters for elderly. Prep food for elderly holiday season. Sell goods to give presents to Syrian refugee kids. Give clothes to kids.
- Not volunteering now because not part of the Association. Haven't joined back yet because busy moving homes and feel busy mentally. Not feel like individually volunteering because not as fun socially (gossip). Also language barrier in the US. Interested in helping, but not ready to act yet.
- *What type of volunteering are you interested in?* Interior design and organization, caring for kids. Also want to help underprivileged, homeless.
- *Do you feel respected in your community?* Yes, she's doing fine in society.
- *How can society better respect you?* If she (with barriers as a minority) still helps others.
- *What do you want to change about your community?* I felt discrimination in workplace, but not yet AsianHate.
- She doesn't think people who lost their jobs will sign up to volunteer. If stuck at home, people feel lazy.
- Instead of volunteering, she wondered what if people start their own businesses?

Heuristic Evaluations

Prototype: [DoGood](#)

***Please note that Group 4's feedback is color-coded by **BLUE**, while Group 1's feedback is in **Green**.*

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

- [Severity 0] It seems clear from on-screen text which processes the user is involved in at any given time.

Match between system and the user's mental model

Both the vocabulary and the task structure reflected in the interface should match how the user thinks about the task.

- [Severity 1] What does the pain area highlighted actually do in terms of recommendations for exercises?
- [Severity 2]: Difficult to navigate between certain screens (e.g. map to list search of organizations). I thought we would be able to directly “enroll” in opportunities on the app, but i don't see an option for it which confused me a little!

User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

- [Severity 3] The tiny icons in the navigation make the app relatively inaccessible and cumbersome to navigate without knowing which buttons lead to which features.
- [Severity 1] I lowered the severity of this one because i think you'll be able to fix it in figma fairly easily and we talked about it, but should be able to navigate a little more freedom between pages/logically go back and forth

Consistency and standards

Use established design language and follow platform conventions. Use consistent vocabulary and design choices throughout your product.

- **[Severity 3]** Navigation was tiny in top right and it wasn't actually clear that this was navigation as this screen area is usually where system status indicators go. As a result, we got stuck on the first page.
- **[Severity 1]:** Slightly murky scheduling and interaction process taking place through chat - some organizations might be right on it, others not.

Error prevention

Need we say more? There should be no such thing as “user error” in the design of consumer products.

- **[Severity 1]** Can you go back and change pain areas on the body? What happens if my symptoms change on a day to day basis or I fill out an area that I'm not actually feeling pain in by accident?

Recognition rather than recall

The user should not have to remember how to operate your design. Instead, the design should clearly communicate what it can be used for and how.

- **[Severity 1]** Within the screens, user behavior seems well documented and in line with general usability standards. Navigating between screens, as touched upon above, is inaccessible and not standard.

Flexibility and efficiency of use

While novice users may need structure and guidance to get a task done, frequent users should have a way to get things done efficiently and in a manner that best suits their circumstances.

- **[Severity 1]** On the page showing exercises, there is no search bar and so I have to scroll through videos to find the one that I want to refresh my memory on. It would be nice to be able to search.

Aesthetics matter

People are most likely to trust, engage with and succeed with aesthetically pleasing interfaces than with ugly ones. What is considered aesthetically pleasing is not universal, however. Don't neglect the visual design and make sure that it is appropriate for your audience.

- **[Severity 0]** Aesthetics are generally clean. You choose good colors and have good text that makes the app feel welcoming and safe.
- **[Severity 1]** Not much white space on the application where i'd expect it to separate out information, sometimes fonts are large or alignments don't quite make it!

Help users recognize, diagnose, and recover from errors

When an error occurs (which, ideally, it shouldn't), help users understand what happened and what they need to do to recover from it.

- **[Severity 1]** It's unclear what happens if I accidentally fill out an area on the pain chart or forget to document that I did my activities on a given day. Are there ways to go back and change these pieces of information in the future?

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

- **[Severity 1]** It would be useful to have more of an onboarding flow/ a tutorial of what can be done within the app, especially as many screens right now feel hidden behind cumbersome navigation.
- **[Severity 1]:** Currently unable to find out what organizations have a need for.

Evaluation Interviews

- Overall user could understand how to use the prototype by following the flow
- For the profile page, she would add information that she came to America 25 years ago, has two college students, and doing some real estate work but wants to change work
- She's not sure what skills to list other than Korean
- On the next screen, she selected "I'm not sure," "spend my free time in a fulfilling way," and "meet other volunteers."
- On the main page, she first selected the "Browse" button under Not Sure Yet
- She clicked on Kidsability and saved. She later realized that she pressed Contact to sign up.
- She didn't consider the Map feature until I mentioned it.
- When asked whether she'd consider teaching Korean language at Kidsability, she said it's tiring and not much fun to teach Korean, but she'd consider it if it was paid.
- However, she would be interested in playing with and reading books to kids at Kidsability for free.
- However, she said she's unlikely to actually sign up until she feels more settled in her life with moving and organizing her home.
- *How would you feel after signing up?* Pretty excited.
- *How do you feel about community belonging?* Though I don't feel it now, I think I would feel greater self-esteem and socially involved after volunteering.
- *How does volunteering affect your dignity and respect in society?* The purpose of volunteering is about giving and humility, not for increasing my satisfaction. However, I think that my friends would respect me for making the effort to go volunteer.
- *How does this app compare to other ways to sign up for volunteering?* This app is simpler to sign up.
- *How would you improve the app?* Instead of me having to search for roles each time, it'd be nice if the app could remember my data about my interests and skills. When a new opportunity arises, I'd appreciate if the organization could contact me.
- *How else?* If I'm interested in sewing sweaters but not skilled at it, I'd appreciate if the app could connect me with skilled people or training so that I can get started. The app could give me skills and confidence to contribute.

I5, 25, Armen, COO of DataPoint Armenia nonprofit organization

- He created the profile, went to the next screen, filled out the blanks about the project and published it on the third screen

- He asked on the second screen of project details if it was possible to recruit volunteers for ongoing activities, such as monthly district cleanups.
- He liked that the project creation starts from the map and he can see all the other projects around.
- He asked if it is possible to cooperate with other NGOs on the map, like join their events or merge some projects that are similar and are happening close to each other.
- All of the tasks were completed without any help.
- He questioned the icon for “My Projects” since he has never seen it before.
- To the question of “How often do they recruit volunteers”, he explained that twice a year they have a big recruitment push and they also take some people who reach out to them throughout the year.
- They mainly use LinkedIn, but LinkedIn is not ideal, because the public there expects paid jobs and not volunteering. He also mentioned that our app is easier to use for their purposes than LinkedIn.
- He asked whether he can contact volunteers.

I6, 28, Mariam, Director of Kooyrigs (nonprofit organization)

- After creating the project and publishing it, she wanted to reach out to volunteers herself. She explained that currently they have to reach out to people themselves and that's why she would expect that functionality.
- She completed all the tasks without any problems and said that the app is very understandable.
- They have a lot of projects in the US and in Armenia and constantly recruit people for projects.
- She loved that she could see all of their volunteers and the number of volunteers, as it is a nice indicator for their nonprofits growth.
- She also loved the messaging platform, because emails are too formal for recruiting in their community but facebook is too informal, and she felt that LinkedIn is for tech people mainly.
- Overall, she loved the product

17, 24 Male, Irregular Volunteer

- Really likes the home screen + the ability to browse opportunities both on a map and a list
- Thinks the filter idea is smart, especially being able to filter by cause and distance
- Likes the idea of being able to see the volunteers working on a certain cause and talk to them, curious about whether or not this is opt-in or opt-out
- Would like more information about the opportunities and their responsibilities, eg. "Chef" is a very broad role and could mean full time strenuous work or could mean preparing snacks for an hour
- The messaging is great, adds a social/human element vs just randomly finding opportunities and emailing/showing up and hoping everything is good
 - This is one reason why he doesn't volunteer more, because it's a little unclear exactly what's expected of him and he doesn't want to commit to something without knowing that
- Thinks that the product would encourage him to volunteer more, especially the social features--being able to be contacted by opportunities in a message-based personalized format vs a email chain "Dear Volunteers! We need your help!" would be great

18, 54 Female, Regular Volunteer

- Likes the map more than the list, it's nice to see opportunities near you so that you can feel like you're helping out in your direct neighborhood especially right now when we're stuck at home/in our region
- Wonders about where remote work would show up on the map view--are remote accommodations here, especially during the pandemic?
- Filtering is awesome, she loves the accessibility accommodations as she has issues standing for a long period of time and so would need to look for opportunities that don't require that
- It's really cool to be able to see both the volunteers who are currently working and the opportunities that are available to work on, as well as the information about the charity
- Messaging is good, she's used to communicating via email but has been texting more recently--wonders about integrations with calendar for scheduling or breaking out to phone as she prefers talking on the phone

