

PhD Visit Day App

Planning Document



Cornell Bowers CIS
College of Computing
and Information Science

INFO 4340 // March 2023

Presented by

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Individual Team Member Responsibilities

The team worked collaboratively throughout the entire planning process in order to design an app for PhD students to use on their ‘Visit Day.’ Whole-team collaboration included (but was not limited to) writing the interview outline, affinity diagramming, distilling research findings to identify the main user research goals, creating the persona, writing the task scenarios, and designing the app. *Individual* responsibilities are highlighted below:

Aarya Tavshikar

- Conducted user interviews
- Wrote the section: ‘Identifying Target Users’
- Wrote the section: ‘Overview of Data Analysis’
- Helped write the section: ‘Supporting the Task Scenarios’
- Conducted User Testing
- Wrote Fixture Data

Carolina Herrera

- Conducted user interviews
- Put together Appendices A and B
- Helped write the persona
- Helped write section: ‘In-Depth Design Explanation’
- Designed and developed “event details” view and “menu bar” component
- Conducted user testing

Jason Lee

- Conducted user interviews
- Wrote the section: ‘Overview of Key Findings’
- Helped write the subsections: ‘User Goal 2’ and ‘User Goal 3’
- Wrote the sub-section: ‘Task Scenario 1’
- Wrote the rationale for task scenario 1 and 2
- Worked on parts of in-depth design explanation
- Designed and developed the “faculty favorites/local tips” view
- Conducted an user testing
 - User Test #2 Notes

Qiyu (Kelly) Hu

- Conducted user interviews
- Wrote the section: ‘Research Method’
- Wrote the subsection: ‘Task Scenario 3’
- Wrote the subsection: ‘Design Rationale - how our design meets users’ goals’
- Developed “event card” component and “homeview”
- Conducted User testing and Wrote E5. User Test #5 Notes

Sabrina Martin

- Structured, formatted, and styled the planning document to enhance flow of information and readability
- Wrote the subsection: ‘User Goal 1’
- Wrote the subsection: ‘Task Scenario 1’
- Put together Appendix C
- Put together Appendix D with explanations of each person’s initial designs
- Sketched the final design and user flow
- Documented the design process and helped facilitate group brainstorming by proposing a gallery walk strategy
- Wrote the section: ‘The Iterative Design Process’
- Wrote the section: ‘Brainstorming’
- Structured the user testing section
- Wrote the ‘Process’ section in ‘Testing’
- Helped write the ‘Key Findings’ and ‘Future Changes’ sections in ‘Testing’
- Did most of the CSS styling on the app
- Designed the profile view
- Designed the profile thumbnail component
- Designed the directory view
- Designed the profile list component
- Revised the app and decreased white space on the screen

User Research

Identifying Target Users

The objective of this app is to enhance the experience of **prospective Cornell Computing and Information Science PhD students who are attending the Cornell Bowers College of Computing and Information Science PhD Visit Day** (as opposed to modifying the event itself). Consequently, we interviewed six PhD students in Cornell's Information Science department who all previously experienced Cornell's visit day (both in-person and remotely). We interviewed Ru (5th year interested in HCI), I-Ting (1st Year interested in Architecture), Tianhong (1st year interested in wearable HCI), Mehrnaz (3rd year interested in autonomous systems), Shu-Jung (1st year interested in AI), and Jieun (2nd year interested in CMC).

In order to ensure diversity within our target user group, we recruited current PhD students from the Cornell CIS department representing a variety of nationalities and school years. We believe that their distinct backgrounds and experiences may reveal unique needs, and we will utilize this information to promote diversity, equity, and inclusion (DEI) in our design.

Ru was our only interviewee who had an in-person visit day, which gave us some insight into what future visit days will look like. Specifically, because he was in-person, he was using his phone for information and visited physical labs for research he's interested in. I-Ting had an interesting perspective because she decided that she'd attend Cornell before visiting day happened. She was online, and noted that she didn't go to all the sessions, only attending those about research that interested her. Tianhong noted that the virtual visit day was very underwhelming, and she didn't get a feel of the campus at all. She also noted that she didn't get to know anybody else in her cohort or get to talk with faculty. Mehrnaz noted that her virtual visit day was very busy, and the overload of information made the experience overwhelming. She noted that her tour guide had a negative impression of Cornell, which was surprising. Shu-Jung also noted that visit day didn't have much of an impact on her decision, as she chose a professor and advisor solely based on her research interest. She noted that because of the time difference, it was hard to attend all the sessions. Jieun also had difficulties with a time zone difference, but also noted that because the school is so big, it was hard to see what each lab was doing. She noted that it was hard to keep track of information from labs.

Overview of Key Findings

At a high level, there are **3 main user goals** that stand out from our interviews:

1. Prospective students desire to efficiently move between visit day activities.
2. They want to prioritize attending events where they can learn about the labs and professors that align with their research interests.
3. They have a desire to connect with other prospective students.

We go into more detail about these main goals in the section 'In-Depth Review of Key Findings.'

Here are some more insights that we discovered:

- All users prioritized attending most lab days, if not all.
- The majority of the users relied on their computer to keep track of their itineraries and attend events virtually.
- While some didn't have any difficulty following the provided schedule, some faced issues whether that may be logistical, technical, and/or personal.
- All visiting students reached out to at least one other prospective PhD student
 - Visiting students expressed an interest in meeting and/or learning about other prospective students in a casual setting
- Not all students attended every scheduled event, and they prioritized events/labs that aligned with their focus/interest.

Research Method

Our research goal was to understand users' overall attitudes towards the PhD visit day and what they consider to be a positive experience. Since field studies are not currently possible, we conducted interviews with students who have previously attended it.

For each interview, we had 2-3 interviewers, including one person asking questions and one or two note takers. To create a comfortable environment that helps users better recall their experiences, we conducted the interviews in public areas of Cornell academic buildings, such as Gates Hall and Upson Hall with the interviewer's choice of time. These buildings are in their working areas and they may have explored during the visit day.

We designed to make our interview semi-structured. Because of the specification of client needs, semi-structured interviews will allow us to explore users' experience around those topics while leaving flexibility for the interviewee to express themselves, through which we will explore users' goals. Specifically, the interview questions focus on prompting the interviewees to recall their experience, and our interviewers use open-ended questions to

guide the conversation around various aspects of that experience – for instance, the reimbursement process.

As users may not always express their true thoughts, we utilize various strategies to gain a deeper understanding of their needs behind words. For instance, we ask follow-up questions when users describe unpleasant experiences and have participants compare their experience of the Cornell visit day with other visit days they have attended. By comparing experiences, users may reveal their preferences and areas for potential improvement.

In total, we conducted six interviews and employed affinity mapping to identify recurring themes related to user needs. Additional details can be found in the appendix of our report.

Overview of Data Analysis

As a group, we worked to put each of the needs and insights from the interviews onto individual sticky notes and then group them by similarity and overlap in terms of a potential user desire. After 2 rounds of affinity mapping, we arrived at 6 overarching user desires.

1. Desire to understand research interests
 - a. Desire to understand research areas that align with interests
 - b. Desire to still understand ones outside interests
2. Desire to understand the program by talking to people
3. Desire to make connections with peers
4. Desire to have a productive visit day
 - a. Desire to efficiently move between activities
 - b. Desire to have a relaxed visit
 - c. Desire to feel engaged
 - d. Desire to attend at reasonable hours
5. Desire to know what the campus is like
6. Desire to know what to prepare before leaving for the visit day

We also categorized some observations about what device prospective students were using.

Of these desires, the most prevalent in terms of quantity were the desire to have a productive visit day and the desire to understand research areas. Within these, the most prevalent sub-desires were the desire to understand research areas that align with interests and the desire to efficiently move between activities. The high-level desires of understanding

research areas and having a productive visit day are significantly larger than the other desires on our affinity diagram.

Appendices C.1 and C.2 show the two iterations of affinity diagramming that we went through, with the final one being C.2.

In-Depth Review of Key Findings

User Goal 1: Desire to move efficiently between activities

A common theme across interviews was frustration by the perceived lack of organization surrounding the itinerary, whether it was because the user received an inundation of Zoom links and other relevant info from various sources, lack of itinerary integration with common scheduling applications such as Google Calendar, or trouble relocating logistical information in the users' email inboxes. Based on data analysis, the underlying notion is that users want more streamlined and effortless information retrieval regarding the itinerary and any potential changes to it.

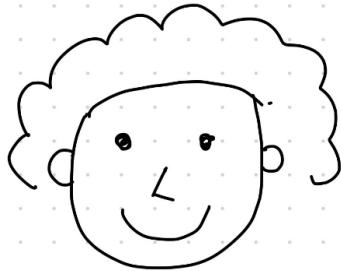
User Goal 2: Desire to prioritize attending events with labs and professors that align with their research interests

While all of the prospective students were given the opportunity to learn about all the labs that are offered by the program, the trend among the students who participated in the visit day showed that many if not all selectively choose certain labs and professors that aligned with their specific research interests. Likewise, the students prioritized learning more about certain labs that sparked their interests, rather than spreading themselves thin across all the lab introductions. In fact, based on the data we have collected, the students were willing to overlook other deciding factors (campus environment, weather, etc.) depending on how closely the labs and professors aligned with their research interests.

User Goal 3: Desire to make connections with other students more conveniently

The general consensus based on the data we have collected from a series of interviews is that the visit day is a nice opportunity to meet other prospective students. However, for many, there seemed to be some challenges/barriers that didn't allow them to connect with other prospective students as well as they desired due to the unforeseen circumstance they were in. For example, having to participate in the visit day virtually limited the interactions with other students. Students also mention a desire to connect with current students and learn more about the program.

Persona



Name : Jack Age : 25

Gender: Male. Hometown: Boston

Major: Information Science

Jack is an accepted CIS Ph.D. student who received offers from both University of California, Berkeley and Cornell University. He is facing a tough decision on which program to choose. Since he has never visited Cornell before, he sees the visit day as a chance to gain a deeper understanding of the program and the location, which will help him make his final decision. He wants to tour different labs to see which best fits his research interests. He also wants to connect with other prospective and current PhD students at Cornell with the latter helping him learn more about the student experience. Because Jack has never been to Cornell's Ithaca campus before, he is relying heavily on the itinerary and information provided by the department to navigate his way through visit day.

Task Scenarios

Below are 3 testable task scenarios derived from the 3 main user goals we have identified.

Scenario 1

Desire to move efficiently between activities

Jack is a prospective PhD student in the Information Science field. For the Cornell visit day, there are a lot of events he is interested in and hopes to attend. To do so, Jack wants to make sure he stays on top of everything that is taking place. It is the first day of the Cornell visit day, and he wants to find where the lunch with other prospective students is taking place.

Scenario 2

Desire to prioritize attending events with labs and professors that align with their research interests

Jack is a prospective PhD student in the information science field. He is interested in artificial intelligence to help build open source chat bot tools. He wants to find a faculty member who contributes to the artificial intelligence research area.

Scenario 3

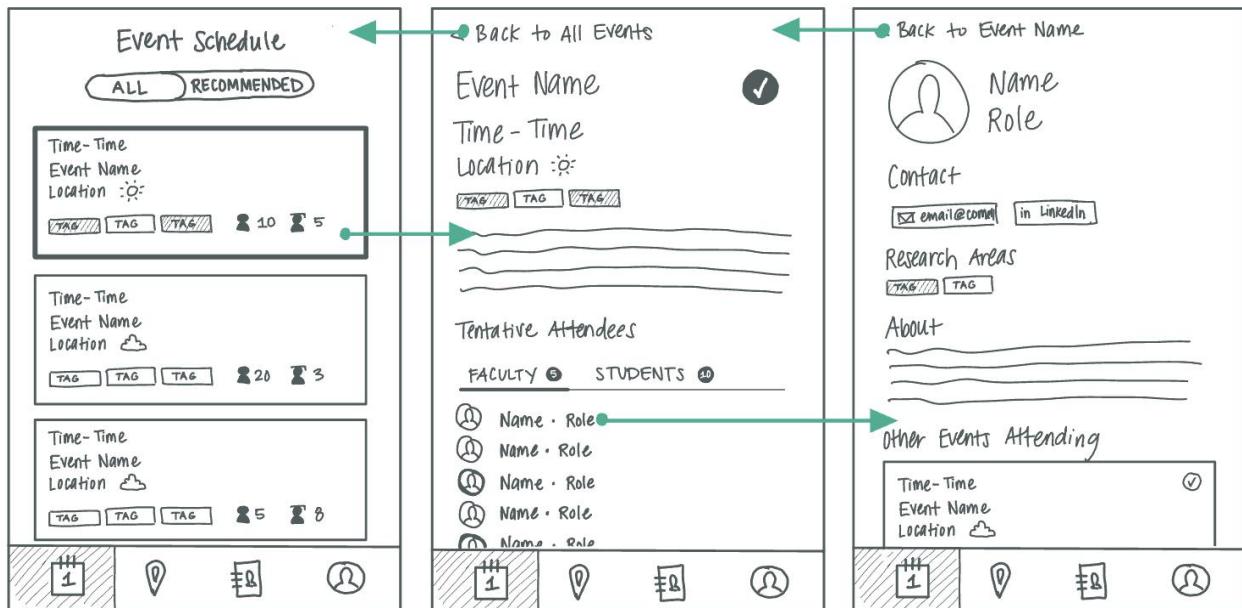
Desire to make connections with other students more conveniently

Jack is a prospective PhD student in the information science field. He doesn't know any of the other students on the visit day. On the visit day, he is feeling lonely and he wishes to find another prospective PhD student in the information science field to grab Gimme Coffee with.

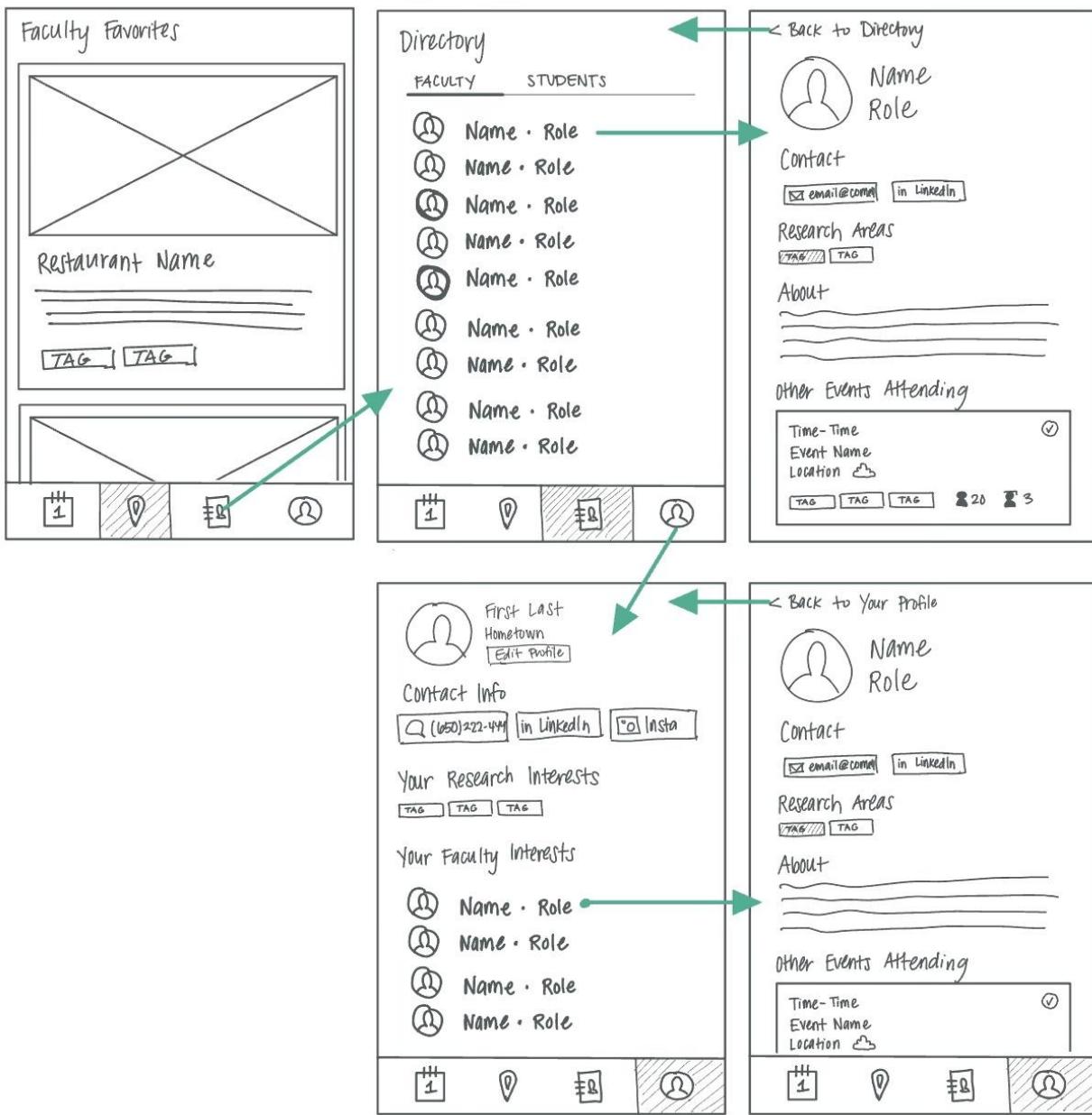
Design

The Final Design

User Flows



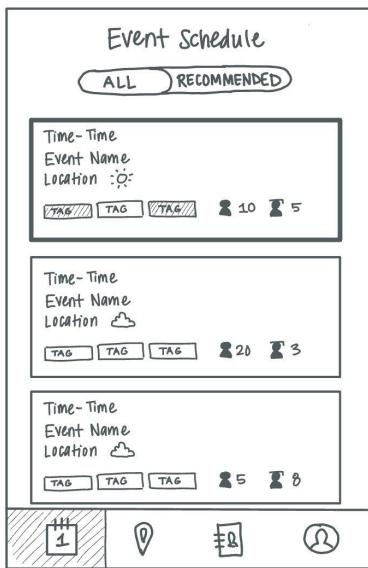
Users click on an event on the event schedule to get to its details page. At the bottom of the details page is a list of tentative attendees for that event. From there, a user can access attendees' details page by clicking on their photo or name.



The directory button provides an overview of all the students and faculty members. Upon clicking on a name in the directory, it provides the user with necessary contact information, and research and faculty interests for other students, and research areas for faculty members. Also, at any other point in the app, if the user clicks on a name, they will get details about that person.

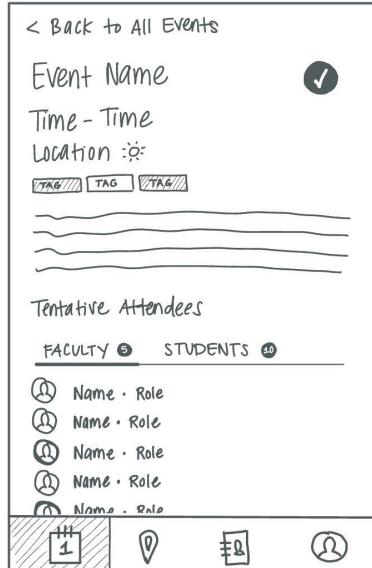
In-Depth Design Explanation

Event Schedule



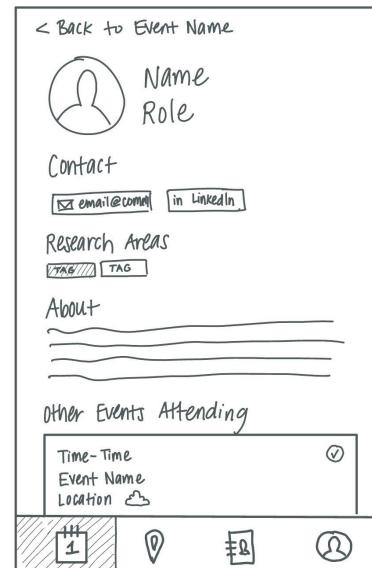
By default, the app initially displays the event schedule. The user can easily view and navigate the broad overview of upcoming events which contains the most essential information users need to prepare. The next event is on top to draw the user's attention to it, highlighting it further with a distinct background color. Since users may not be interested in all events, there is a toggle to focus on recommended events based on an interest form they filled out during the onboarding process. Tags help denote different research fields for each event to the user. Instead of only showing the current weather, we show weather forecast besides each event, so users can get better prepared

Event Details



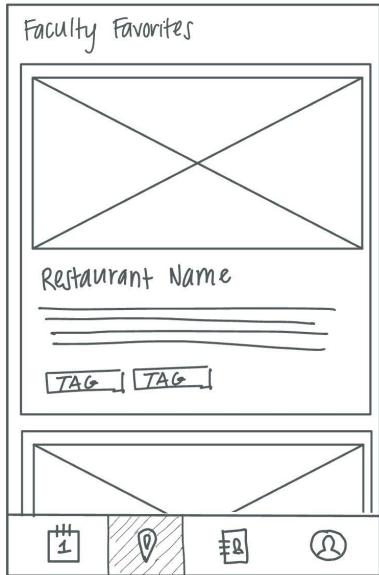
It is important for users to access more detailed event information, which can help users determine their interest in an event. Of particular note is the tentative attendees, which can provide insight and help users connect at the event with Cornell faculty and other prospective students. To appear on the tentative attendees list, users must individually click on the checkmark at the top right of the screen.

Faculty Member Details



This view lays out all the information about faculty members or prospective students a user might find useful in learning more about them and help potentially connect with them.

Local Tips



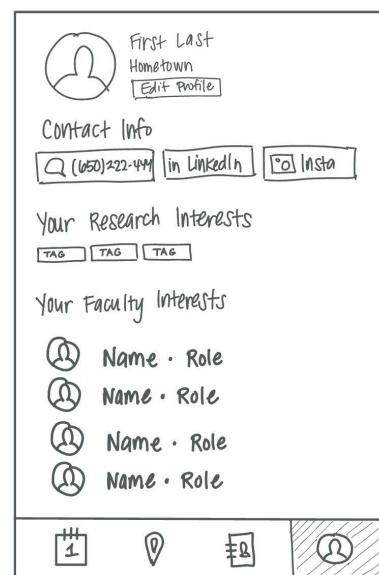
The Local Tips screen provides users with popular local spots, including restaurants, and sightseeing. Each entry has an image carousel, description, and relevant tags.

Directory



The directory contains a list of all of Cornell's faculty and the prospective Information Science PhD students, which are separated into two tabs. The directory gives users another way to learn about people. By clicking on each profile, the user is taken to a detailed profile screen which contains the person's contact info, short bio, and research interests.

Your Profile



The user's own profile contains their own contact information, research interests they have indicated (in the form of tags), as well as faculty members they have indicated interest in. All of these preferences would theoretically be set during the app onboarding process with a quick form. The profile can thus be viewed by all other users on the app to help students and faculty get to know each other.

Design Rationale

User Goal 1: Desire to move efficiently between activities

Instead of having a header showing "welcome," we prioritize the schedule information by putting it on the homepage and emphasizing the upcoming event.

1. Easy access to the schedule:

- a. As most interviewees emphasized the need to efficiently track upcoming events, we simplified access to the schedule by showing the schedule on the home page, eliminating the need for users to navigate to separate pages for "next event" and "all schedule" information. Instead, users can easily view all relevant details with a single glance.
 - b. We have included a summary of each event on the home page, and users can click on an event to view more detailed information.
2. **Highlight the upcoming event:** While showing all upcoming events, we put the upcoming event on the top and use different color and body language to highlight it (see details in the “In-Depth Design Explanation” section), ensuring that it is easily noticeable.

User Goal 2: Desire to prioritize attending events with labs and professors that align with their research interests

In order to assist users in discovering events that are in line with their preferences, we designed to first gain an understanding of their interests, distinguish events based on this information, and enable users to personalize their schedule accordingly.

1. **Gain users' interests:** We have developed a user profile feature where users can input their academic interests using tags. In terms of matching the events based on users' interests,
2. **Distinguish events:** We designed to have two tabs on the home page - "all" and "recommend." As each event is also tagged, users can use them to know brief information about an event in the "all" tab or rely on the system's recommendations to filter events that have the most relevance to their interests.

User Goal 3: Desire to make connections with other students more conveniently

According to our interview, the reason why users want to connect with current and prospective students is to gain insights about the program and build their social network. To facilitate this, we need to display individual information, allow users to request to connect, and help users organize their connections:

1. **Display individual information:** Our interview indicates that research interests and roles are the main information users care about when making connections. Therefore, we show attendees each event along with their relevant information, allowing the users to make connections by attending the same event.

2. Request to connect: While during the pandemic people had challenges connecting with each other, we overcome this by also providing social media as an entry point for users to connect with each other.
3. Organize connections: To ensure ease of access, we also have organized all the above information for both students and faculty in one place on the contact page.

Supporting the Task Scenarios

The design supports the previously mentioned task scenarios in the following ways:

Task Scenario #1

As for the first task scenario, Jack originally wanted to figure out where the lunch with other prospective students was taking place. Upon first entering the app, the user is met with the ‘Event Schedule’ view that provides a simplified overview of all the upcoming events. Here, each event card provides all the necessary information, ranging from the location of the event to the number of attendees that are projected to show up, so Jack can easily spot the event he is searching for. If he’s unsure or more curious about the event of choice, clicking on the event provides the user with even more detailed information of the event.

Task Scenario #2

In this task scenario, Jack wants to find a faculty member whose research aligns with his interest in artificial intelligence. In our design there are several ways for Jack to identify such a faculty member. For example, on the ‘Event Schedule’ view, each event has tags that display the main topic/subject of that event. Thus, if any of the events have tags that are or are similar to ‘artificial intelligence,’ Jack can look further into that event and see the related faculty members. Another way is to utilize the directory feature that provides an overview of all the faculty members as well as students. Upon clicking on any faculty member, Jack is able to view a comprehensive profile highlighting their research areas and a personal bio and can look out for the tag and keyword “artificial intelligence”.

Task Scenario #3

Lastly, Jack also wants to find somebody to drink a coffee with during his time at the visit day. One of the features that we built into our app was a directory, which is directly accessible from the navigation bar at the bottom of the screen. Jack simply has to tap into this view to see a list of prospective students and faculty who will be attending the visit day. To learn more about individual students, Jack can click on a student in the list. This leads to a page

that displays their contact info, research interests, and short bio. Through this feature, Jack can discover other prospective students with similar interests and connect with them.

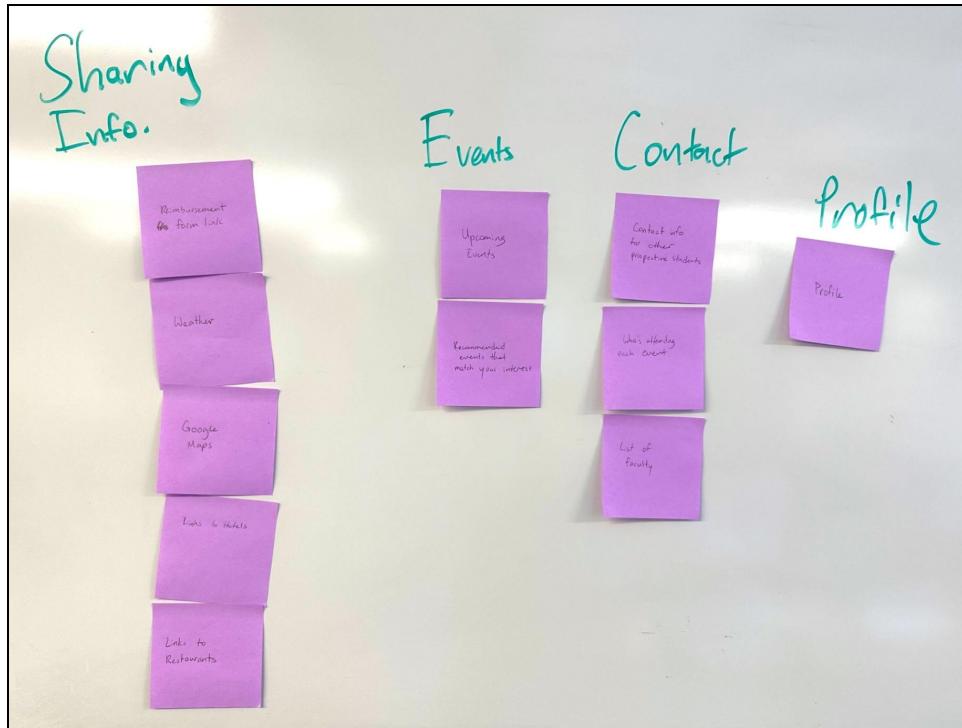
Brainstorming

First we discussed what features were and weren't necessary for our app. Then once that was finalized, we took our 'necessary' features and card sorted them to determine how information would be grouped together (and what the groupings would be named). The different sorts are pictured in Figure D.1 in the appendix. After this process, we began sketching ideas.

Essential Features
- Upcoming events view
- Who is attending each event
- Contact info of other prospective students
- Recommended events that match your interests
- Sign up form (interests & contact info)
- Reimbursement form link

Non-Essential Features
- Supporting both mobile & desktop
- Google Maps integrations
- weather
- campus tours
- subway maps
- links to hotels

A list of essential and nonessential features.



Our final card sort in which we grouped different features of the app into common categories.

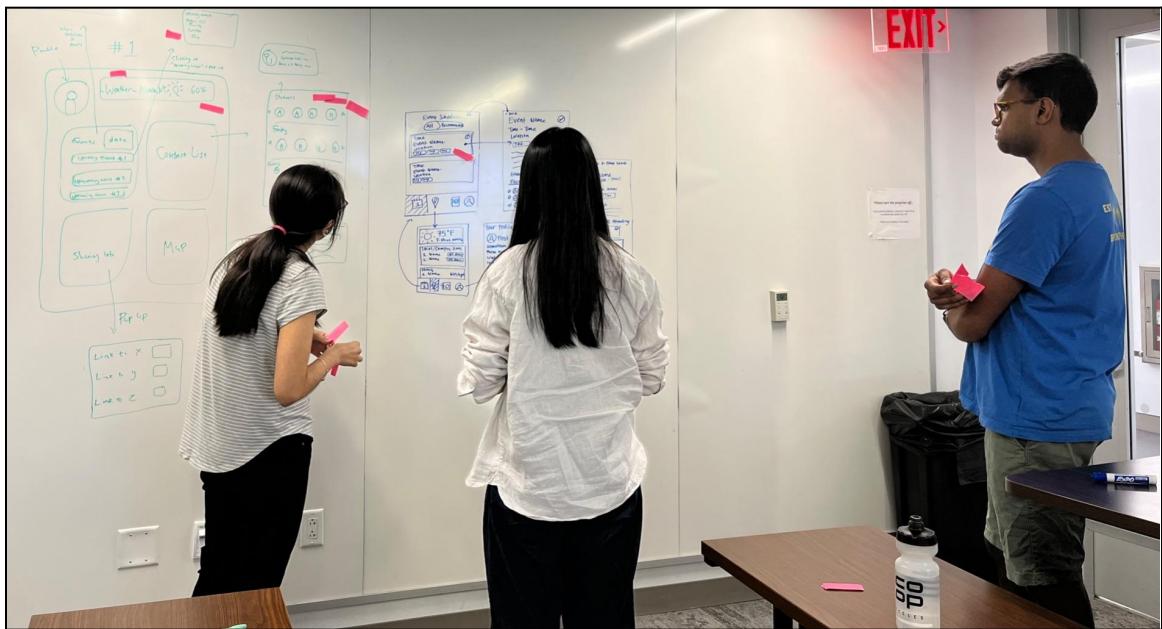
The Iterative Design Process

1. First **each team member sketched up their own designs** based off our final cardsort. Images and explanations of everyone's initial designs are in Appendix D.

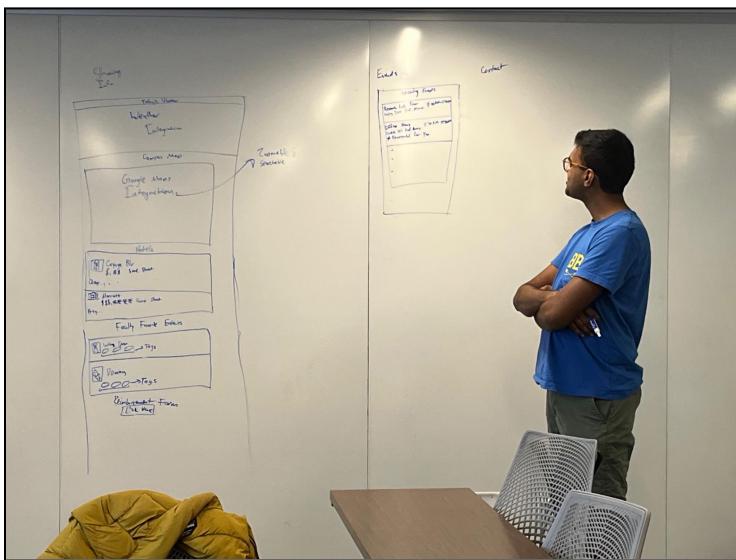


2. Then team members performed a “**gallery walk**” around the room to the different whiteboards and **placed a sticky note on aspects of each member’s design that**

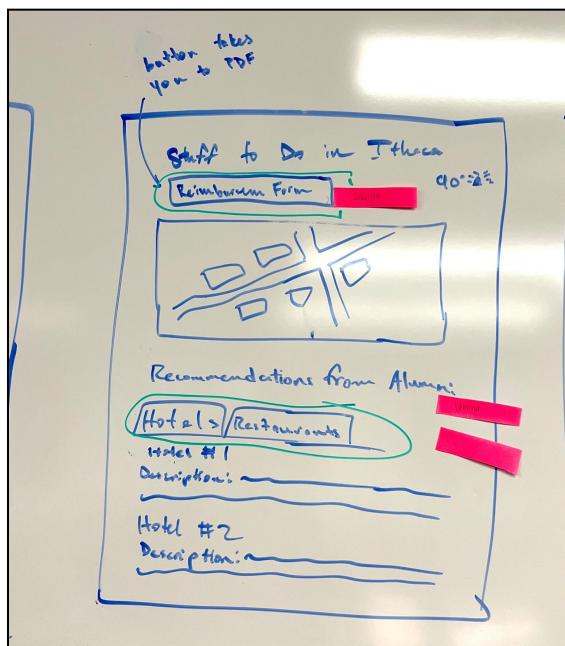
appealed to them. This helped us identify features that we gravitated towards and commonalities between members' designs.



3. Then each member presented their designs and the listening team members provided feedback on the designs. Some talking points during the presentation were debating the use of profile pictures to fight bias, feasibility of implementing visit expenses from a 3rd party, whether or not users really needed a link to the reimbursement form, comparing user flows, and filter implementation/usefulness.

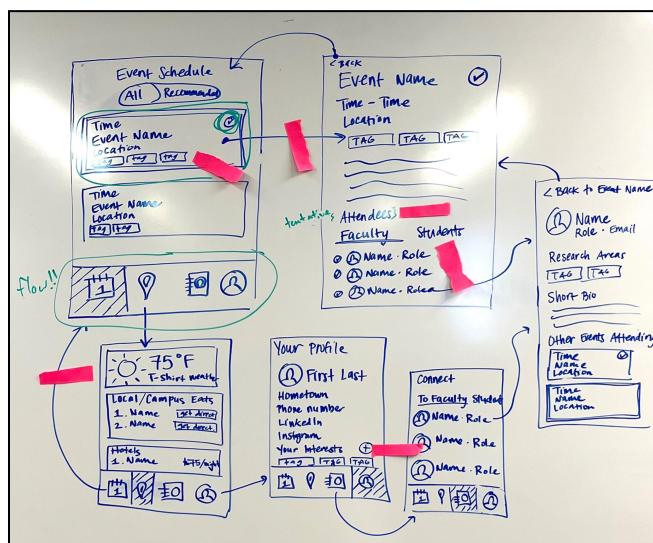


4. After the presentations, we circled back around the room as a group and **circled** features of each design that we definitely wanted to include in our final design.



Here we really liked the tab design between restaurants and hotels since it required less scrolling for the user. We also liked the placement of the reimbursement form link since activities in Ithaca such as dining were expenses that would likely need reimbursement.

5. Lastly, we sketched a new final design that was composed of the best features of everyone's own design. We cleaned up this final design into more legible sketches that are provided in the previous section 'The Final Design.'



Testing

Process

Methods

Our testing method was to present the app to users and read through our previously listed task scenarios. Without giving them any assistance, we observed them try to complete the task scenarios. For each user test, we changed the order of the task scenarios. Prior to starting the user testing, we each participant for consent to do user testing on them and to observe them.

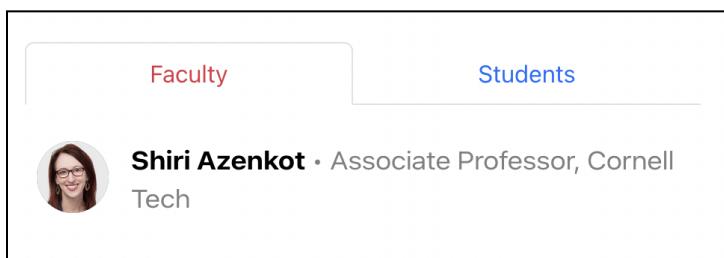
Participants

The test participants were Cornell InfoSci undergraduates who had not ever attended a PhD visit day. We felt these participants were well suited since they did not know what to expect on such an app, similar to an actual prospective PhD student who would still be learning about what constitutes a visit day.

Key Findings

1. Users often didn't differentiate between faculty and students in the directory

When trying to find a student to have lunch with, some users incorrectly ended up settling on a faculty member. This was because the tab labels for 'Faculty' and 'Students' did not stand out to the user.



2. It was impossible for users to recognize common interests with other students by looking at their profile thumbnail

At present, users have to access the individual profile of each student listed to ascertain whether their interests match their own, which is neither intuitive nor time efficient.

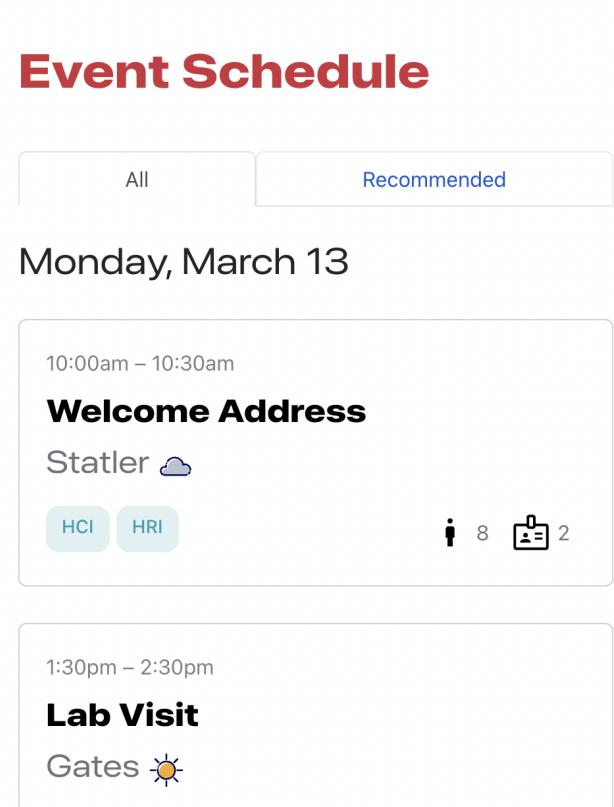


Rama Adithya • Detroit, Michigan

A rectangular box containing a circular profile picture of a man with dark hair and a beard, followed by his name and location.

3. The default schedule view was intuitive to users

All users were able to the desired event details as well as identify an event that related to a specific research interest. They performed these tasks very quickly and did not click to other parts of the app.



Event Schedule

All Recommended

Monday, March 13

10:00am – 10:30am
Welcome Address
Statler 
HCI HRI  8  2

1:30pm – 2:30pm
Lab Visit
Gates 
Health Tech Rapid Prototyping

The image shows a mobile application interface for an event schedule. At the top, there are tabs for 'All' and 'Recommended'. Below that, it says 'Monday, March 13'. The first event listed is 'Welcome Address' from 10:00am to 10:30am at Statler, with icons for HCI, HRI, 8 attendees, and 2 sessions. The second event listed is 'Lab Visit' from 1:30pm to 2:30pm at Gates, with icons for Health Tech and Rapid Prototyping.

Future Changes

1. Make the ‘Faculty’ and ‘Students’ tab component labels more prominent

Through this stylistic change, the user would be able to more effectively differentiate between the types of profiles and find their desired profile more quickly.

2. Add additional details to each student’s profile thumbnail

A potential design change would be to add students’ research interests to their profile thumbnail to help users to gain a better understanding of their interests without the need to access each profile individually. Another option would be to omit their hometown from the thumbnail and replace it with their research interest.

3. Modify navigation icons to eliminate pain points with inter-page navigation

This would likely require a more involved level of user testing to determine which icons best serve our users, and allows them to fluidly navigate through the app,

4. Decrease white space to take advantage of screen real estate

Since our app resides on mobile devices, we could take better advantage of screen space and reduce the padding so that the content looks less condensed.

Appendix

Appendix A

User Interview Question Outline

A1. List of Questions

1. Can you introduce yourself and your main area of research?
2. Did you do the PhD visit day in person or online?
 - a. When was it?
 - b. If it was online:
 - i. How familiar were you with either of the Cornell campuses?
 - ii. How about the weather?
3. How was it?
4. What was your first impression of the Ithaca campus? And the NYC campus?
5. How many other visit days did you attend?
 - a. How did your Cornell visit day experience compare to others and how did it influence your decision to select Cornell?
6. Did you go to the NYC campus as part of your visit day?
 - a. What transportation did you use in the city?
7. How did you learn about your visit day activities?
 - a. What kind of device were you using?
8. What was the most memorable part of visit day?
9. On the actual visit day, did anything unexpected happen?
 - a. If yes – what was that event?
10. Did you need to get any expenses reimbursed?
 - a. If yes – how was that process?
11. How was the experience moving between itinerary items?
 - a. Did you have any trouble?
 - i. If yes – what was it, and how did you resolve it?
 - ii. If no – Did you contact anybody to clarify information?
 - b. How did you organize and manage your schedule?
12. How was your experience arriving/checking in at the provided lodging sites given that it was booked through Cornell?

Appendix B

User Interview Summaries & Notes

B1. User Interview #1

User #1 is a first year PhD student studying Information Science because she is interested in interdisciplinary research and is an international student. She attended visit day last year and it was held online. Visit day, and specifically the research area discussions, were very helpful in figuring out which lab would be a good fit in terms of research; this was the most important factor in making a decision. The current student PhD student panel was also helpful in learning about the student experience as well as the campus and environment. However, the downside of having a virtual visit day was that she could not meet other prospective students, so meeting other students is an important part of visit day.

Notes:

- First year Info Sci PhD student
 - Architecture, yale;
 - Interested in interdisciplinary research so joined info sci
 - International student
- Last year; virtual visit – 2 day event
 - 1st day:
 - morning – director and staff telling you about the school
 - research area discussion
 - afternoon: current PhD student panel
 - 2nd day:
 - Another student panel (Cornell Tech)
 - Another research area discussion: professors were intro'ing their research and lab
 - Different areas
 - Good to hear about what people were doing
 - Before can only look at the website
 - Helps figure out what research fits and figure out lab
 - Everyone gets assigned an advisor in our first year
 - Get to know about other people's work
- Didn't see the Ithaca campus until the school year started

- In-person would have been better
 - A lot of work transferring flights to get to Ithaca (3 connections)
 - If it's a good research fit, nothing matters
- Was a PhD student at Yale, virtual day was similar
 - Was able to see the campus
 - Didn't really influence her decision because had already made decisions ↗ maybe for others
- Got her schedule through email
- Just got her laptop and stayed in her room
- The student panel was very helpful because they tell you how to manage PhD life and what's going on campus (especially helpful because virtual day not in-person)
 - Had good internet, no probs
- Did a good job of finishing on time
- Visit day's important to better understand the research
 - Website's not necessarily up to date
 - Get to know student experience
 - To better understand the campus and environment
 - Not able to get to know other prospective students
- Slack channel for current PhD students

B1. User Interview #2

User #2 is a second year PhD student in Information Science. Her research focuses on computer-supported cooperative work. Her PhD visit day was in 2021 and took place online. She had a good experience at the Cornell visit day because she could see what other people in the field were working on, so being able to hear about current research is important. On visit day, she wanted to see what type of funding was available at the college and what courses were like. In addition, individual meetings with other students and faculty helped her make her decision to attend Cornell. However, the schedule was heavily packed, which was difficult to keep up with. Also, it was easy to lose an email with a Zoom link when moving between sessions.

Notes:

- Second year PhD in Information Science
 - Computer-supported cooperative work
 - How people interact with computer system and see how we psychology react to computer

- PhD visit day was online
 - 2021
- The experience was good, it was good to see what others were doing
 - Each faculty introduced their labs and introduced what the students were doing
 - Didn't consider the weather and what the area is like because it was online
 - Wasn't prepared for the weather because it was online
- First impression of the Ithaca Campus was mixed
 - Some buildings were modernized while some were very traditional
 - The overall atmosphere was okay because there wasn't anything to compare to (This was her first time in the US)
 - But overall good atmosphere/very interdisciplinary/social
- Had 2 other remote visit days
 - Cornell remote visit day was a lot bigger in terms of size than the other visit days
 - Other schools' visit days were more interactive in a sense because the size of the visit day was a lot smaller
 - Because it was so big, it was difficult to see what each lab were doing
 - Time difference difficulty because she was in South Korea
- For visit day, she wanted to see how the college was funded or what the courses were like
 - Individual meetings with other students/advisors had a huge influence on making the decision
- Had 2 faculty meetings
- She thinks in-person visit day would've been much more convenient and effective to reach out
- She couldn't really see the Cornell Tech campus because it was virtual
- She learned about her visit-day activities/itineraries through a pdf from the department
 - Had multiple zoom links to join (every 15 min) 10am-3pm and one break only
 - Each lab introduced their topics
 - Not every labs interested her
 - It was sometimes difficult to keep track
- She mostly used computer to keep up with the activities and whatnot
 - Zoom interface isn't good on the phone she says

- Most memorable part of the visit day
 - Nothing sticks out immediately for her
 - Cornell info sci is big and they have a lot of things to cover in a short amount of time, so it was ‘difficult’ to keep up
 - Whereas other schools were smaller so it was easier to process the information given and take things slower
 - Program overview
 - Just having some casual lunch virtually (asking questions, connecting with others, etc.)
- She didn’t expect anything in particular, so nothing unexpected happened
- She didn’t need to get any expenses reimbursed
- Moving between itineraries was taken place through email
 - Sometimes she lost the email for the zoom link, so she sometimes couldn’t join
 - She also didn’t have cornell ID, so there were some logistical issues
 - She would ask the department manager if she had any questions/help
- The visit day didn’t have much conflict because of the time difference
 - For her time zone, it took place at night
- She just relied on the pdf to know what was going on and keep track
 - Wasn’t really interactive/engaging with email
 - Maybe wishes there could’ve been an app that sends out reminders, zoom links, etc. directly rather than through email
 - They also sent out reminders through emails, but there were still some issues
^refer to note above

B3. User Interview #3

User #3 is a third year PhD student in Information Science, whose main area of research is in autonomous systems. She had her PhD visit day for Cornell online in 2020. She received a schedule via email that was very packed and overwhelming because she felt it was her only opportunity to get the information. User #3 enjoyed being able to talk more freely to other prospective students, but she, unfortunately, could not speak to any faculty member individually due to visit day being virtual, indicating that being able to speak to connect with other researchers is an important part of visit day. Additionally, hearing a current student’s authentic opinion about the Ithaca campus made her feel more prepared about coming to Cornell.

Notes:

- Can you introduce yourself and your main area of research?
 - 3rd year PhD, autonomous systems (drones, etc.)

- Did you do the PhD visit day in person or online?
 - When was it?
 - 2020, online
 - If it was online
 - How familiar were you with either of the Cornell campuses?
 - Just from the website and friends
 - How about the weather?
 - She didn't really know the weather, but she did hear from her friends that the weather is gloomy for a while
- How was it?
 - It was challenging because one person was acting like a tour guide who took the camera around to show around the campus
 - It was really sudden and people weren't prepared
 - There was a discussion later to accommodate as hybrid
 - She also wasn't prepared to be online
 - She doesn't think it was beneficial for students
 - Felt like they were trying too hard to advertise the school
- What was your first impression of the Ithaca campus? And the NYC campus?
 - Quite different from what she saw virtually (Ithaca)
 - More beautiful than what she saw virtually
 - But there were some things that she didn't know
 - For Cornell Tech, it was gorgeous on the outside but horrible on the inside (?)
 - Very small
- How many other visit days did you attend? How did your Cornell visit day experience compare to others and how did it influence your decision to select Cornell?
 - 'Lab' day, cornell tech, and one where you can meet other PhD candidates
 - 4 other offers and all the others were virtual as well
 - In comparison,
 - People here were supportive
 - For Georgia Tech, there wasn't much engagement
- Did you go to the NYC campus as part of your visit day?
 - What transportation did you use in the city?
- How did you learn about your visit day activities?
 - She had a lot of surprises because the faculty wasn't ready for a sudden shift to online
 - All she knew was that they were going to take them virtually around the campus
 - What kind of device were you using?
 - Laptop

- What was the most memorable part of visit day?
 - The tour guide said “thank god i'm leaving this place in a year”
 - Made her more prepared to come to Ithaca in a sense
- On the actual visit day, did anything unexpected happen?
 - If yes/no – what was that event?
 - No, nothing was unexpected other than it going online
- Did you need to get any expenses reimbursed?
 - If yes – how was that process?
 - No, she didn't have to get expenses reimbursed
- How was the experience moving between itinerary items?
 - Through email
 - Did you have any trouble?
 - If yes – what was it, and how did you resolve it?
 - If no – Did you contact anybody to clarify information?
 - It was overwhelming because the schedule was packed and there was a lot to comprehend
 - One thing she liked about being online was that she was able to talk more freely to other prospective students
 - She didn't/couldn't talk to any faculty members
 - She talked to them before the visit day using email mostly
 - How did you organize and manage your schedule?
 - Sent out a full-day schedule
 - They had a lot of different zoom links and youtube links
 - Time conflicts between some events happened
 - Had to clear out her schedule because it was online and it was the only chance to get information
 - She wanted to keep up with everything that was going on, so it was very overwhelming

B4. User Interview #4

User #4 is a first year PhD student in Information Science. Her research focuses on AI interactions and how people perceive AI image generators. She attended visit day virtually last year. Because the itinerary was so well-organized, she did not have any trouble moving between different events. The most memorable part of the visit day was talking to other prospective students. However, User #4 found it hard to introduce herself to others and reached out to fewer people as a result, further indicating the importance of meeting fellow prospective students at visit day for users. Visit day did not influence her graduate school

decision. She heard from many prospective students at this year's visit day that many were not interested in Cornell due to the weather in Ithaca and the crowded workspace.

Notes:

- First year PhD under Susan Fussel/ Ai interaction, Ai image/ interested in how people perceive Ai image generators
- She attended online due to the pandemic
 - It was difficult due to the time change
- She had no idea about Ithaca or Cornell Tech
 - As for the weather, she heard that there's long winter and the temperature drops drastically
 - She wasn't prepared when she got here because she was used to living in a subtropical climate
 - But other than that, she didn't hear anything else
- For last year visit day which was online, she attended the lab introduction and whatnot, but she didn't attend much events afterward because it was too late (3 a.m)
 - Because it was online, she felt like it was a little awkward to introduce herself to all the people
 - So she only reached out to a few PhD students she was interested in
- This year, many prospective students weren't satisfied with the program because of the weather and crowded working space
- Her first impression of Ithaca:
 - Lovely town, but not very convenient
 - For transportation, she mostly commutes by walking since a lot of the buses aren't on the schedule
 - Didn't really meet her expectations when she first came
 - But now that she's gotten used to the environment, she's okay with it
- Didn't get to visit Cornell Tech campus physically
- It was also difficult to know what it was really like being here whether it may be the 'student culture' and whatnot because it was online

B5. User Interview #5

User #6 is a first year PhD student in Information Science, and her research focuses on wearable HCI. She attended visit day virtually in 2022. She found visit day underwhelming because she could not interact with her potential cohort online. Visit day did not influence her decision to attend Cornell as it was her only offer, but she knows that it was important for a

lot of friends when deciding. User #6 did not attend all of the sessions, only the ones that focused on the research interests she had, but even these were not helpful because she did not learn anything. Also, there was an issue with Zoom links, but the department sent corrected versions via email.

Notes:

- Can you introduce yourself and your main area of research?
 - First year phd, wearable HCI, devices that can be worn and are sensitive to the skin
- Did you do the PhD visit day in person or online?
 - When was it?
 - Virtual, last year around this time (2022)
 - If it was online
 - How familiar were you with either of the Cornell campuses?
 - Before the visit day, had only seen pictures online, visit day did not help her with understanding the campus at all, they were more academic or life oriented, there was no real virtual tour, so she didn't get any more familiar with the campus.
 - How about the weather?
 - Had heard about it, her first reaction to Ithaca is the weather, talked about during visit day in the context of daily life.
 - How was it?
 - Very underwhelming. Two-day event, back-to-back zoom meetings with different people, get to know about the cohort typically, but because of the zoom style, most people didn't interact with their potential cohort. Some schools had it in person at other schools, she didn't have any in person, but people she knows did and they said it was better
 - What was your first impression of the Ithaca campus? And the NYC campus?
 - Got here mid-august, it was nice and pretty. That was the week before orientation, so the campus was majority occupied by first year undergrads. Theory that the longer you stay in college, the less happy you look.
 - Has not been to Cornell Tech, but has seen many photos of nice views.
 - How many other visit days did you attend? How did your Cornell visit day experience compare to others and how did it influence your decision to select Cornell?
 - This was the only visit day she attended
 - Cornell was the only offer she got, she didn't have to choose
 - For a lot of her friends, it made a big difference, it was the pivot point for a lot of people.
 - Did you go to the NYC campus as part of your visit day?

- What transportation did you use in the city?
- How did you learn about your visit day activities?
 - Got an Email, had a schedule
 - What kind of device were you using?
 - Laptop, because everything was on zoom. It was on a weekday, which conflicted with work.
- What was the most memorable part of visit day?
 - Had a really close friend who also got a Cornell offer, both woke up late, and had to introduce themselves in pajamas, that's the only thing she remembers.
- On the actual visit day, did anything unexpected happen?
 - If yes/no – what was that event?
 - Not really, it was what she expected from a virtual visit day
- Schedule:
 - Back-to-back meetings, didn't have a lunch break, but had lunch calls, where people were on zoom talking.
 - Not everybody attended all the sessions
- Faculty:
 - Didn't talk to the faculty.
- Did you need to get any expenses reimbursed?
 - If yes – how was that process?
 - No, she didn't have to get expenses reimbursed
- How was the experience moving between itinerary items?
 - The first batch of links they sent was wrong, so they sent a corrected version of the links. Somebody was in the wrong room for a while, but they sent remedial emails.
 - Did you have any trouble?
 - If yes – what was it, and how did you resolve it?
 - If no – Did you contact anybody to clarify information?
 - No, didn't have any issues.
 - How did you organize and manage your schedule?
 - There were no conflicting sessions, so not hard.
 - Went to the first and last ones, which were generic, but only attended specific sessions on research interests that she had.
 - These weren't helpful, though, because she didn't learn anything.

B6. User Interview #6

User #6 is a fifth year PhD student researching human-computer interaction who had his visit day in person. During visit day, he could tour all the labs in a group and speak with the faculty, so making connections for possible future collaborations was important. The schedule was tight so he wishes there were more opportunities to see the outdoors and meet with more faculty. There was a snowstorm during visit day, which prevented some prospective students from attending. User #6 was already familiar with the Ithaca area, but attending UCSD would have required more research to get acquainted with the area. User #6's decision was influenced by the cost of living and the funding available at each university.

Notes:

- 5th year PhD candidate, HCI
- Listed people he was interested in working with in his personal statements and investigated what they were working on so he could talk to them during visit day
 - did this a week or 2 before
 - had looked at faculty during the application process
 - before admission, tried to talk to faculty and cold-emailing
- When applying, had to discuss his research and how it relates to the research of people here
- Went to UCSD visit day; had to prepare more and ask around to see if it could work because he lived closer to Ithaca at the time
 - Would've needed to ask a lot more people from there about if he could fit in and would've needed to do a lot more research.
- Drove to Ithaca;
 - Food and hotel accommodated.
 - Reimbursed for gas; gave receipts
- Came to Ithaca during a heavy snowstorm for visit day but liked the campus and the people
 - The NYC campus was in the Google building at the time
 - Already knew what to expect of the environment because living in Rochester
 - His itinerary wasn't affected, but other prospective students he was looking forward to seeing again couldn't make it due to the snowstorm
- Finances were a very important consideration (cost of living)
- Learned funding at UCSD was limited more funding at Cornell affected his decision
 - Wanted to work with Sue because she was involved with a major conference
- Got the itinerary over email; communicated with one person

- Would talk with various potential advisors
 - Could tour all the labs and talk about their research even if interests were not aligned
 - Generally stuck to schedule unless you really weren't interested
 - Led around in a group
 - The schedule was tight and did have not a lot of free time
- Could meet/talk with current PhD students during after hours
 - "Where do you wanna go most," connect on Facebook
- Met 3 students from UCSD's visit day who were going to Cornell's visit day too
- Mainly used his phone, but sometimes his laptop
- Would like to have seen more of the outdoors and more faculty (more opportunities to work with people)

Appendix C

Affinity Diagramming

Figure C1. Affinity Diagramming Round #1

Here we organized the sticky notes into 6 main categories, by different user desires: to understand research areas, to understand the program by talking to people, to connect with peers, to attend events on the itinerary, to know the campus setting, to properly prepare for the visit day. There was also a small extraneous grouping where users mentioned what devices they used during the visit day.

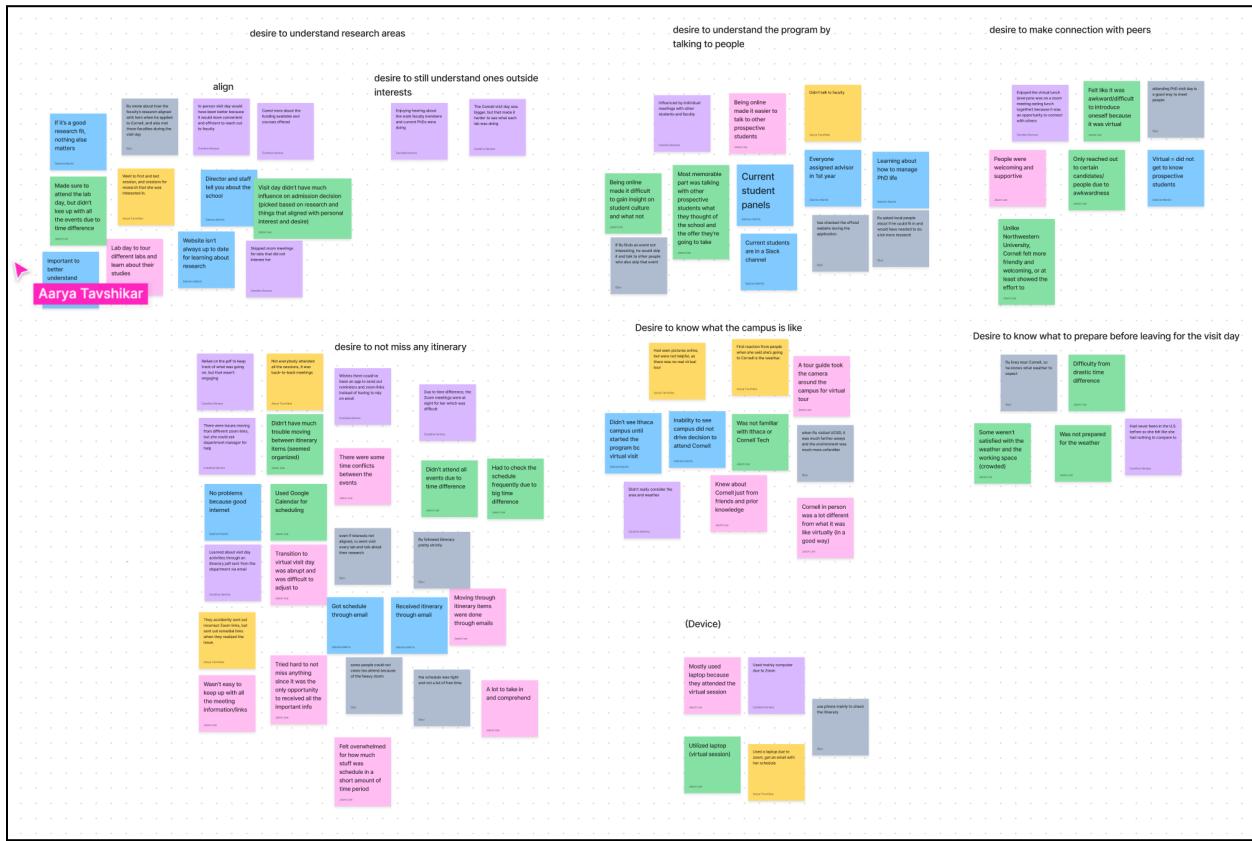
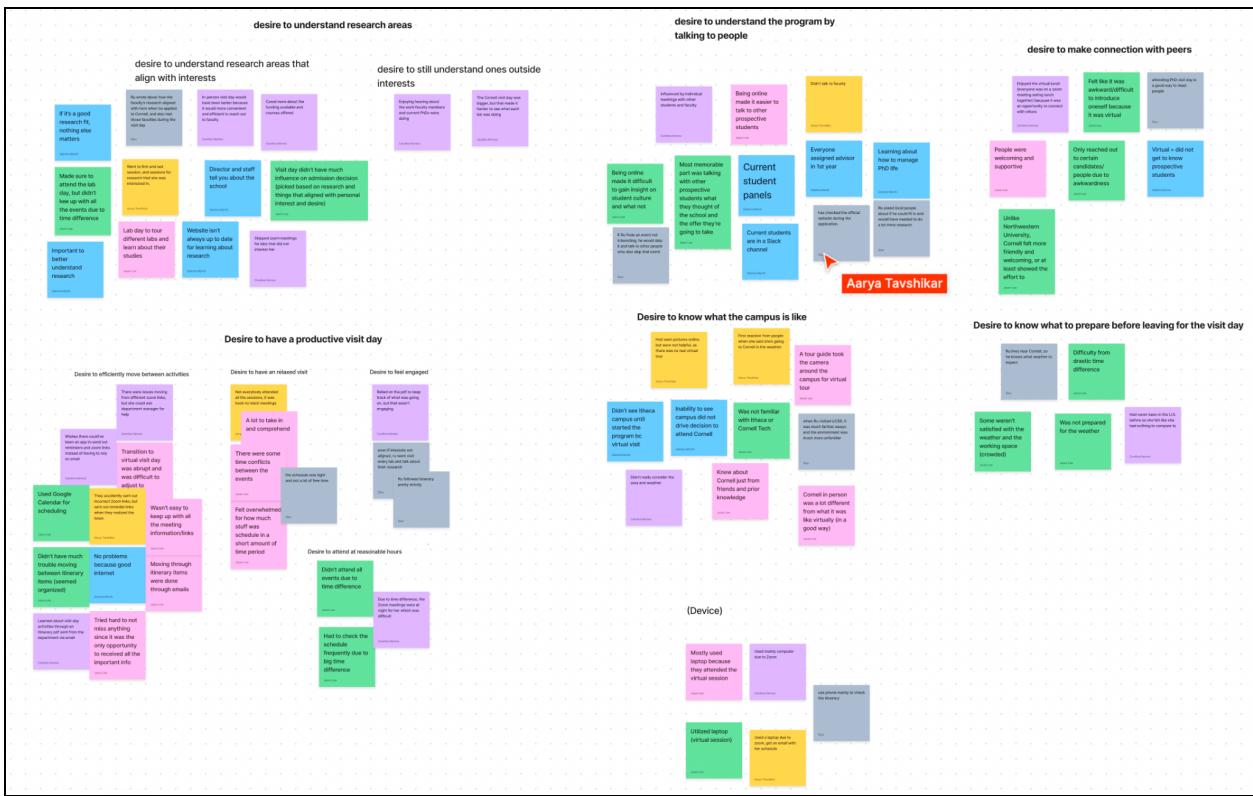


Figure C2. Affinity Diagramming Round #2

In this round we further broke down the ‘desire to not miss any itinerary.’ The overall grouping was renamed to ‘desire to have a productive visit day.’ The group was distilled into 4 subgroupings: ‘desire to move efficiently between activities,’ ‘desire to have a relaxed visit,’ ‘desire to feel engaged,’ and ‘desire to attend the [virtual] visit day at reasonable hours.’

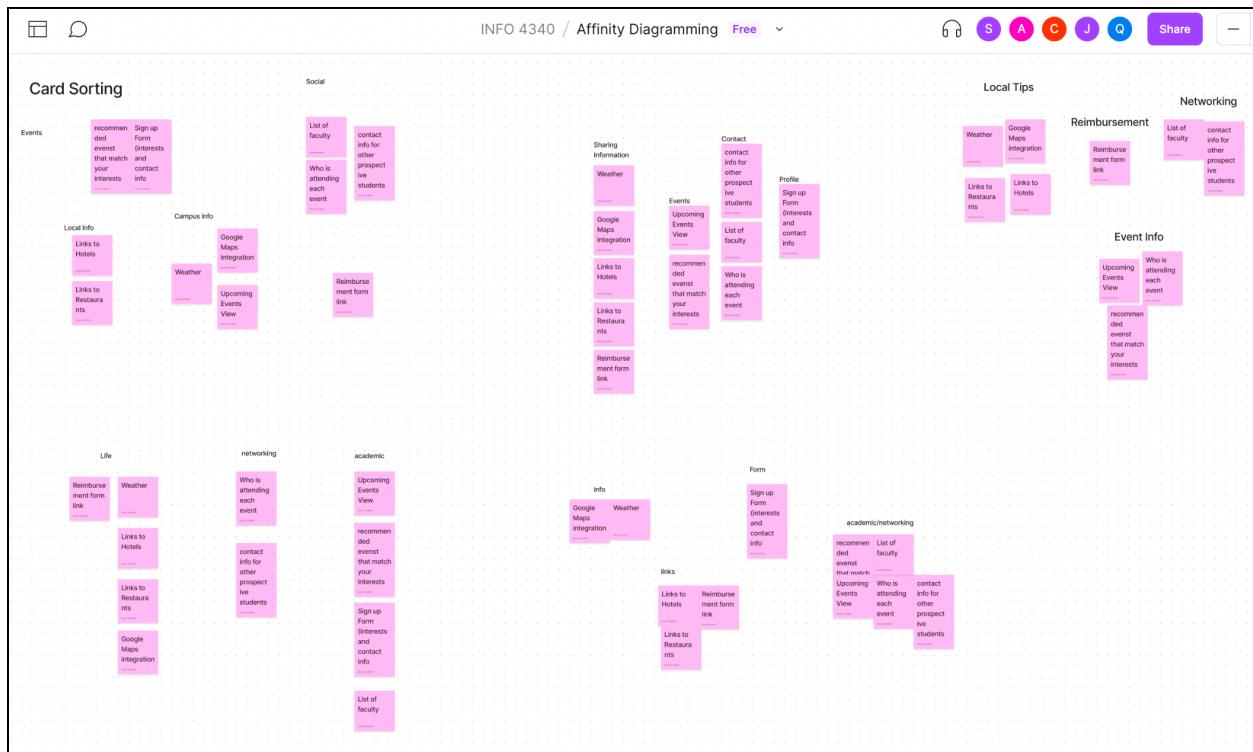


Appendix D

Design

Figure D1. Cardsorting

Our group conducted various rounds of card sorting to determine how to group features on our app. We originally did this on a physical whiteboard with sticky notes, but for the sake of documentation, we also recreated the groups on a digital whiteboard for easy access in the future.



Images D2. Group Collaboration

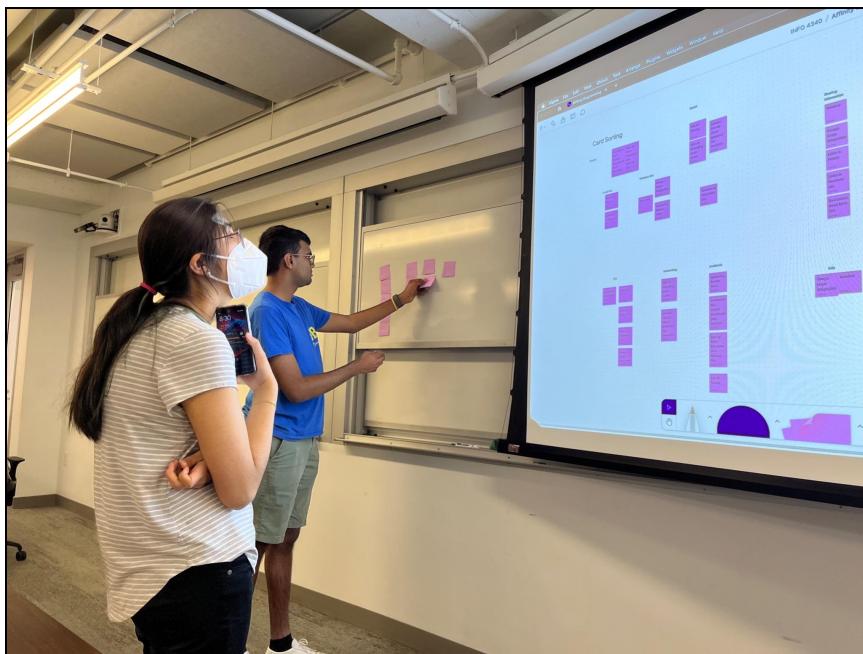


Image D4. Jason and Sabrina's Initial Designs

Jason's design (left) implemented the use of widgets on a home screen. Each widget has its own category such as contact list, map, important links, weather, and upcoming events.

Jason's design was unique in that it used a horizontal carousel for displaying different profiles.

Sabrina's design (right) utilizes a horizontal menu at the bottom of the screen. The default screen when the app is opened is the Event Schedule tab. The user can toggle between recommended events or all events. From there the user can click on different events and see their details such as who is attending and other basic logistics. There is also a tab for information that pertains to the locale such as weather, hotels, and restaurants. The third tab is a directory of faculty and prospective students. Lastly, the My Profile tab allows the user to see their own information, research interests, and faculty interests, as well as to be able to edit it.

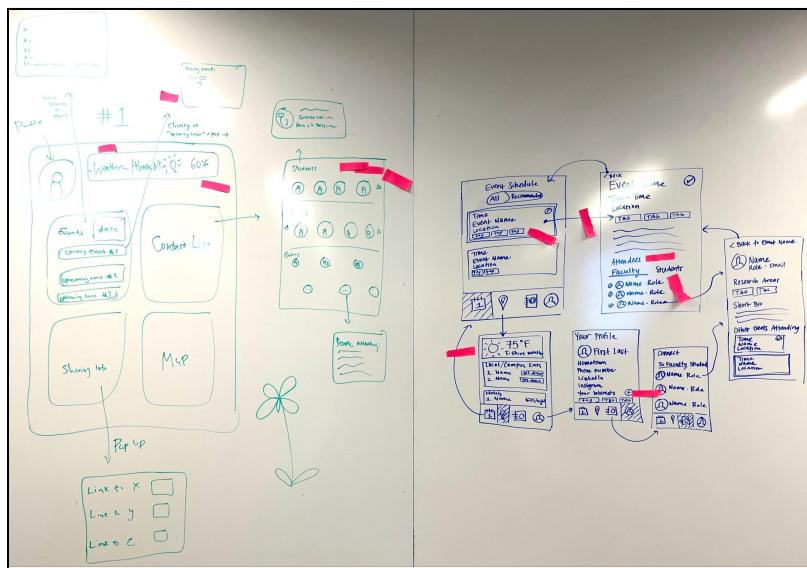


Image D5. Aarya's Initial Design

Aarya's design was unique in that it integrated Google Maps into the app. The main page would allow users to see local Ithaca weather, access maps easily, see rates for local hotels, and receive local eatery recommendations. Everything was on a continuously scrolling view.

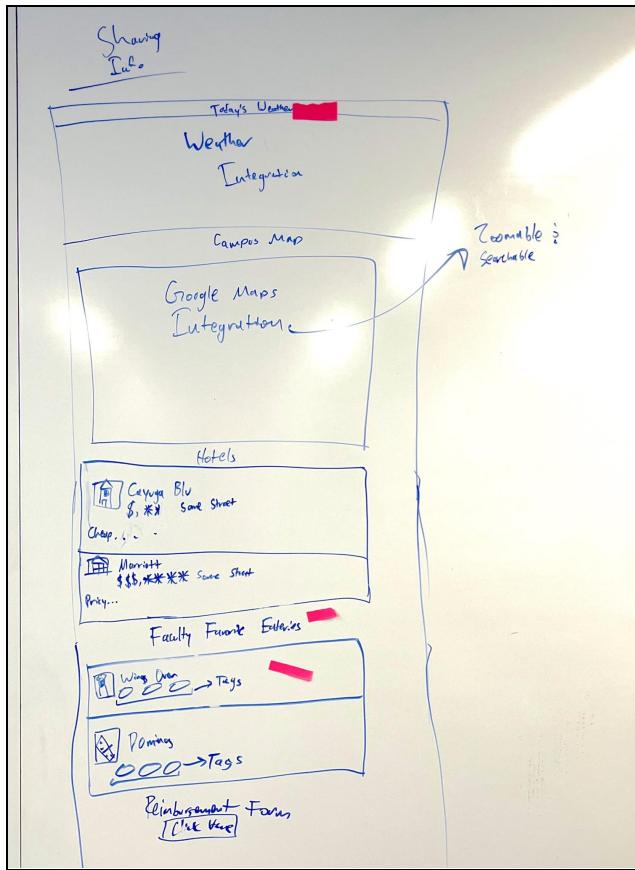


Image D6. Carolina's Initial Designs

Carolina's Home view is a dashboard that shows snippets of information such as weather and upcoming events. The screen pertaining to local information allows users to tab between hotels and restaurants so they do not need to scroll as much. The Contact view has a grid of prospective students and faculty which you can click on to see more details about them. Carolina also made a more comprehensive Upcoming Events view which includes a filter—something that other designs did not have.

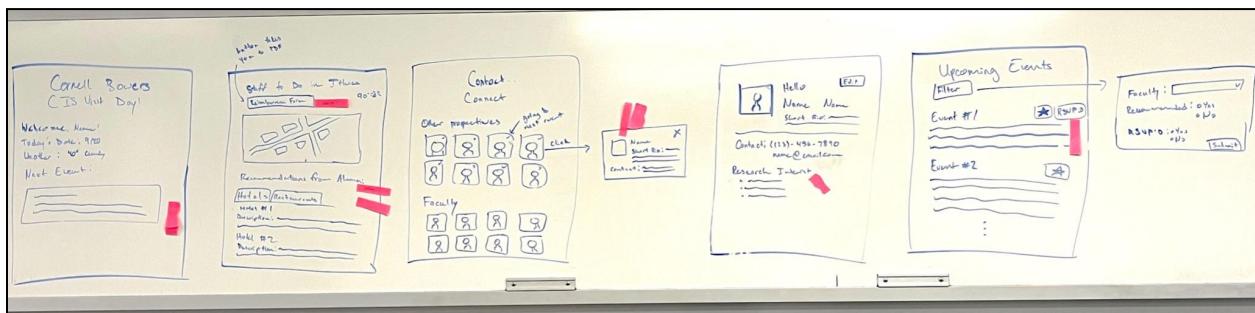
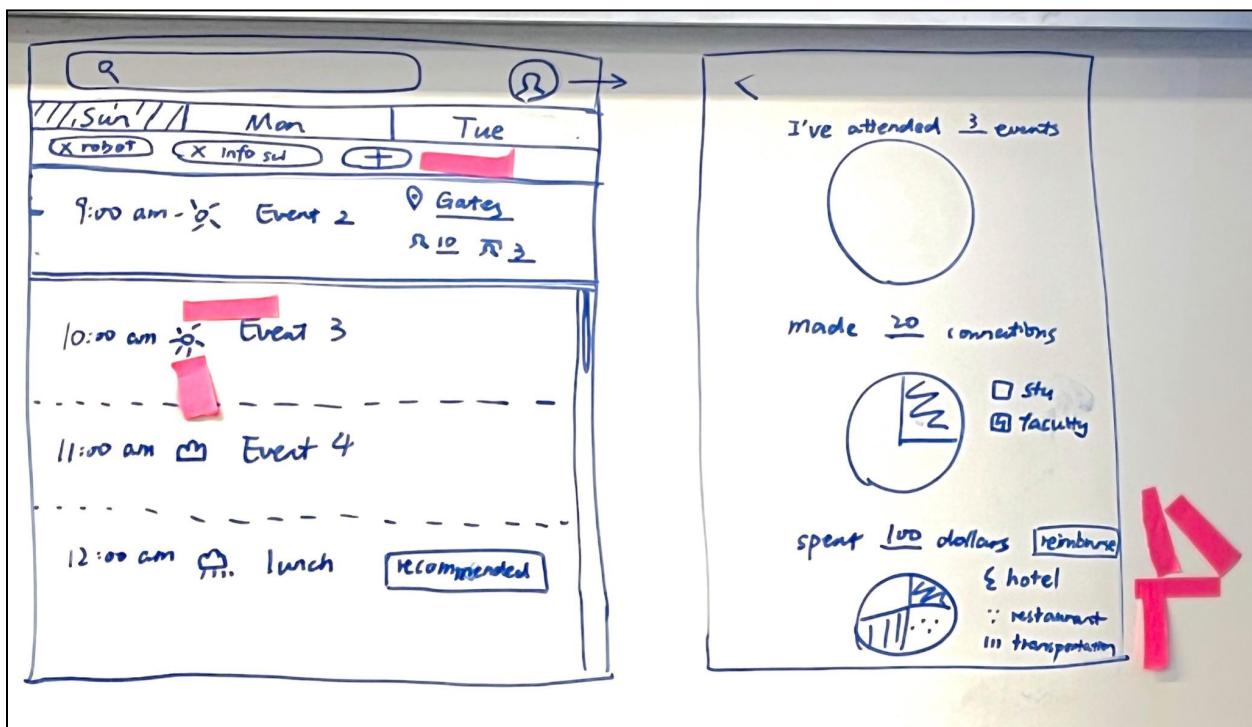


Image D7. Kelly's Initial Design

Kelly's design was made up of a home screen that divided upcoming events by each day of the visit. For each event, there is a symbol to represent the hourly weather since it could change abruptly and it would help users prepare their day better. Each event card also previews the number of faculty and prospective students who would tentatively be attending the given event. Kelly also included a feature that highlighted certain events as 'recommended' just like some other group members. Lastly, Kelly came up with various data visualizations such as the number of connections made, money spent on the trip, and number of events attended.



Appendix E

User Testing Notes

E1. User Test #1 Notes

- Looked at tags in events to look for AI keywords. Completed this task successfully and with ease.
- When clicking on a event, wondered out loud why there was a checkmark next to the event
- When trying to find a student to have coffee with, thought he should look for someone from the same town as Jack
- First clicked on faculty members and didn't realize they weren't students because the tab headers did not stand out. Clicked on Shiri to decide to have lunch with her but she is actually a professor.
- Easily found a lunch event in the calendar, just scrolled down until he found lunch.

E2. User Test #2 Notes

User Test #1

- Upon entering the app, the user first notices the landing page is the Event Schedule page
- The user notices the tags on each event
- The user scrolls through to any that might be relevant to artificial intelligence
- Professor Mimno's office hours has a tag with 'artificial intelligence'
- The user comes across the tentative attendees list of professors after clicking on the event
- The user finds Professor Mimno in the list and clicks on his profile to learn more about his research in artificial intelligence

User Test #2

- Upon entering the app, the user first notices the landing page is the Event Schedule page
- Notices there are events/activities listed
- The user notices it is displaying "All" events rather than "Recommended"
- The user is looking out for any event name that might be relevant to lunch and the appropriate time for lunch
- Comes across the relevant card and finds more information for where it's taking place, the time, etc..

User Test #3

- Upon entering the app, the user notices there are events/activities listed
- The user notices that the landing page doesn't have what the user is looking for

- Notices the navigation bar at the bottom of the app
- The user notices a book-like icon in the navigation bar and clicks on it
- The user notices the directory is divided into two: the faculty and the students
- The user browses the students directory and clicks on one of the students who seemed fitting for a coffee

E3. User Test #3 Notes

Task one

- Scrolled down the events page
- Unsure about which one was lunch; thought it was happening too late
- She looked through a few seconds longer and returned to the broadening participation lunch, clicking on its details page
- Indicated towards where it said gates atrium

Task two

- Looked through the events details page
- Quickly found artificial intelligence tag on Professor Mimno's Office Hours

Task three

- Unsure of where to look
- Mainly looks through the events page
- Did briefly click on the directory page but returned to events
- Said that Jack could find someone to grab coffee with at one of the events like the lunch and then head over to gimme coffee
- Tried to find gimme coffee on the local tips page; thought it should be there

E4. User Test #4 Notes

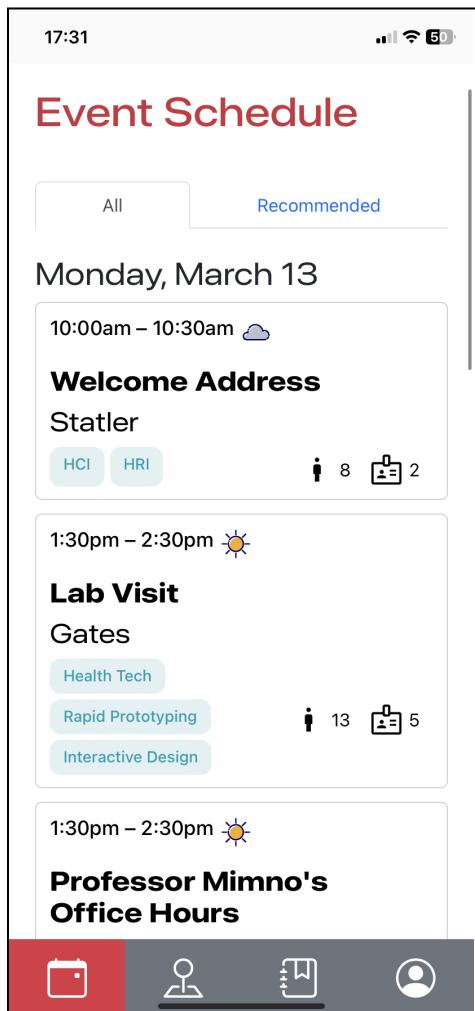
- Can see a tab under the events schedule that says all, and assumes that all the events would be on this page.
- Scrolls down to find the lunch event in the gates atrium
 - Does not click into the event page, stays on the event page while talking about how it's the lunch he's looking for.
- Tags in green specify which field the professor is in, sees professor mimno's office hours, which includes the AI tag, and sees that he has office hours in gates at 1:00 PM.
- down to see a networking opportunity with the PhD student panel, looks like there are 18 people there, chooses to attend to grab coffee with somebody from the panel later

E5. User Test #5 Notes

- The testing order followed scenario 1, 2, and 3.

- Task 1: the participant remained on the homepage and briefly skimmed through it by scrolling up and down twice. She used the cursor to highlight the word "lunch" in the event titled "broadening participation lunch."
- Task 2: the participant again stayed on the homepage and quickly scrolled while I read the task. Within 30 seconds, she found the "Artificial Intelligence" tab under the event "Professor Mimno's office hours".
- Task 3: the participant stayed on the homepage and found the "PhD student panel." She indicated that she wanted to attend this event to make connections, so I asked for other ways. Then, she paused for a few second and slowly moved the cursor to user profile icon on the navigation bar and clicked on it. In the user profile page, she scrolled through it quickly, then went back to the nav bar, clicked on the "contacts" icon, and navigated to the "students" tab. After browsing the student list, she first clicked on the first students, read out this student's research interests, and then read the last part of her "about" (starting from "previously.."). She then went back to the user profile page and moved the cursor to "Your research interests" (to compare their interests) and then went back to the student list (by clicking on "contact" on the nav bar → "student") and reach the student list. She did not click into any of them but scrolled down at first to browse, and randomly chose "Liam Albright" to check his "research interests" and found a match in the interests.

E6. Screenshot of the installed app

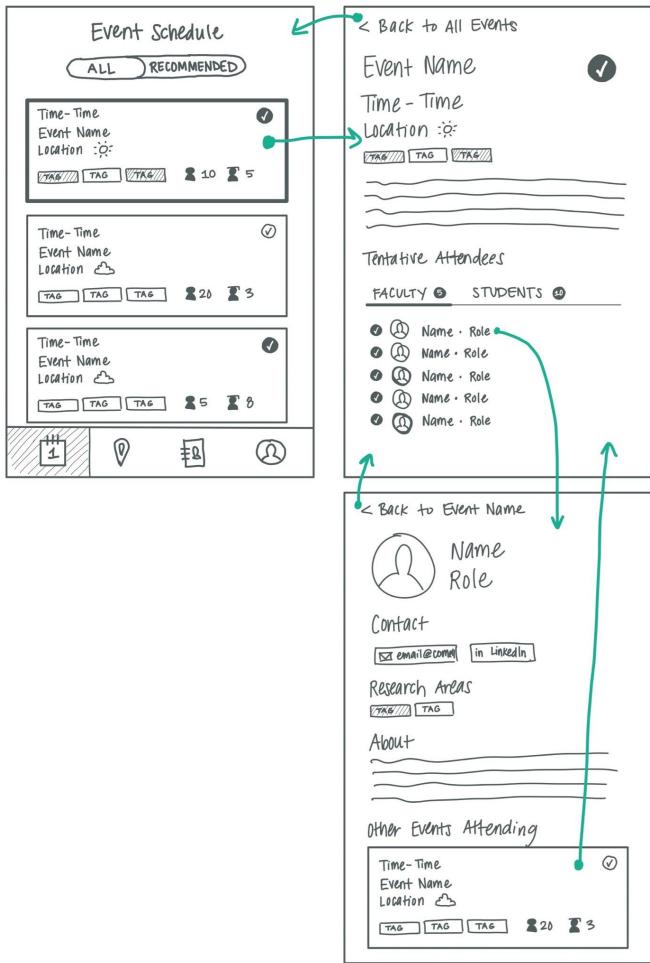


Appendix F

Early design and user flow iterations

E1. Flow #1

In this earlier design, we had check marks next to profile thumbnails, as can be seen in the top right screen, to denote that someone said they would attend an event. We deemed this to be redundant because we already know the person is attending since they are the tentative attendee list.



F2. Flow #2

In the ‘Local Tips’ tab, we originally planned for Google Maps integration but removed it from the design since it was out of implementation scope. We also changed the design of each ‘tip’ card so that it now has an image carousel to increase informativity, versus just a small logo.

* Google Map Integration *

Faculty Favorites

- Eatery Name TAG TAG TAG
- Restaurant Name TAG TAG TAG
- Campus Attraction TAG TAG TAG

First Last Hometown \$ Edit Profile

Contact Info (650) 222-4444 in LinkedIn Insta

Your Research Interests TAG TAG TAG

Your Faculty Interests

- Name • Role
- Name • Role
- Name • Role
- Name • Role

Directory

FACULTY	STUDENTS
Name • Role	

< Back to Directory

Name
Role

Contact email@example.com in LinkedIn

Research Areas TAG TAG

About

Other Events Attending

Time - Time	Event Name	Location	<input checked="" type="checkbox"/>
TAG	TAG	TAG	20 3