HCI project: Weaving the Threads within the Social Fabric

You will apply techniques in Human–Centered Design on a project under the theme "Weaving the Threads within the Social Fabric". You will choose your user group, observe and interview them, determine design problems, and tackle the problems by iterative prototyping and testing. During this process, parts of your deliverables will be ready to submit to CHI 2019 student design competitions. We will encourage a few promising projects to be submitted into the competition. If they are accepted, we will sponsor a trip to present your project at CHI 2019 conference in Glasgow.

CHI 2019 Design Brief: Weaving the Threads within the Social Fabric

Technology has provided numerous means through which people can connect and create new networks, practices, and cultures. It has also provided new channels for people to make their voices heard and shape the future. We have seen this phenomenon accelerate over the last decade; in societies with serious political crises, local people have been able to communicate with the world and influence opinion and politics. Social technologies, crowdsourcing platforms, and digital fabrication have created new opportunities for invention, business, and manufacturing to be democratized and sharing economies to emerge. Technologies enable different communities of interest or practice to come together to share experiences, support one another, and to address some of the wicked problems faced by humanity.

The theme of CHI 2019 is 'Weaving the threads'. In the Student Design Competition, we encourage you to contribute to this theme by considering the ways that technology might be used to strengthen our social fabric. Social fabric is a metaphor for how individuals interact with each other within a community. Frequent and positive interactions create a tight weave to create a strong 'social fabric' that can withstand the weight of a challenge. The looser the connections a community has, the looser the weave and the greater the likelihood that the fabric will break. The fabric can also fray if key threads are lost, or develop loose threads if some members of the society choose a different path (e.g. differing opinions on key politics, criminal actions). We challenge you to consider how technology can enhance how people weave together within communities and wider society as a whole.

The scope of this brief is broad: for example, you could focus on healthcare, aging, education, policy, public service, business development, charity, sustainable living, food, energy consumption, art, or indigenous culture, just to name a few. You can either work with an existing community, or you could aim to create a new community. The scale and definition of a community can vary depending on your design aim, for example, people in the same region, a group of people with the same interests, a network of people who pursue new social or economic value, communities of practice in professional fields and so on. You may adopt design strategies that allow community engagement, including participatory design, co-creation and co-design, service design, design for social innovation, inclusive design and open innovation. You may come up with a participatory design and co-creation approach using existing technologies or you may find opportunity in contemporary developments in technology, such as 3D printing, digital fabrication, citizen sensing, the maker movement, the sharing economy, big data, social networks, IoT, gamification, new sensors and actuators, and Augmented Reality, to name just a few.

Remember, though, that sometimes the best interventions may flow from a simple yet sharp insight gleaned from research, and might require only minimal technology – what is important is that your choice of technology and design intervention should be appropriate for the particular community and context you are focusing on.

For this year's design challenge, we particularly encourage that the following criteria be considered:

- Does the design intervention address a real population and/or situation?
- Does the intervention use technology in an appropriate and novel way?
- Was relevant prior work properly identified and cited?
- Were analysis, synthesis, design and evaluation both systematic and sufficient?
- Was the intervention developed far enough to demonstrate the key ideas?
- Were genuine stakeholders involved in the process of research, development and evaluation?
- Were the research process and the involvement of stakeholders ethically appropriate (e.g., were institutional guidelines followed)? Please note that we will check submissions to ensure that ethics has been mentioned, and we will look for confirmation that appropriate ethical approvals have been gained where necessary (e.g. if working with children or vulnerable communities).
- Did the team explore the entire ecosystem of stakeholders, conditions, and contexts?
- Was the intervention well-crafted and effectively presented?

Tasks overview

1. **Form a team** of 5 or 6 members and setup an IT infrastructure
2. **Identify potential user and stakeholders** that you plan to interview
3. Collect data by **interviewing and observing** potential users and stakeholders.
4. Apply techniques in **qualitative data analysis** to make sense of your data and narrow down the scope of design problems that are interesting to address
5. Present your findings in the **mid-term report and presentation**
6. **Brainstorm design ideas and create prototypes**
7. Validate your prototypes by **testing with users**
8. Iteratively test and refine your prototypes
9. **Present** your prototypes, write-up **a final report,** prepare a **video** and a **poster**

Schedule

Deliverable	Location	Due date (time: 18:00)
List potential user groups for interview	email	September 19
Mid-term presentation of the stakeholders and design problems	class	October 16–17
Mid-term report	OLAT	October 17
Initial prototype presentation	wiki	October 31
Check-in meetings during the coaching slots	class	At least once every two weeks
Final presentation	class	December 11–12
Final report	OLAT	December 12
A video showing the final prototype	OLAT	December 12
A poster showing your design process and product	OLAT	December 12

For the promising projects, we will encourage you to revise your deliverables and submit to CHI 2019 Student Design Competition. The deadline is 7 January 2019, 8pm GMT. See submission details on CHI 2019 website.

Grading

This project contributes to 50% of your final grade. The grading is divided into two parts: mid-term (15%) and final (35%). Your project will be evaluated holistically based on your reports, video, poster, presentations, and your interim reports in the coaching sessions. We will use the criteria described in the design brief (see above) to assess your work:

Depending on the user group and the problem that you address in the project, your result may be stronger in one aspect and weaker in the others. For example, consider the following projects from HS 2016:

> *Pregnessentials:* This group developed a working prototype of a mobile application that helps pregnant women to be aware of issues in each step of the pregnancy. They spent several weeks implementing a working application.
>
> *Firefighter Navigation Aid:* This group conducted in-depth interviews and observations with firefighters. They identified a problem that can be addressed by technology: way-finding inside the building with fire incidents. Their final prototype is an interactive PowerPoint slide deployed on a tablet PC to show a specific interaction scenario.

The *Pregnessential* group reached a clear the problem statement early in the project. This allows them to spend more time and energy on prototyping and refinement and populate the app with actual information. The *Firefighter* group, however, took on a more challenging user group. They conducted several rounds of interviews with real stakeholders and identified five different problems before narrowing down to the one above. Both groups achieved very good grade in the project despite their different design activities.

We encourage you to explore novel design ideas beyond existing applications. (*What we do not wish to see another calendar, scheduling, email, or todo list app.*) Think of what could be possible in the next five years with the advent of technologies such as augmented and virtual reality, artificial intelligence, wearable computing, and big data.

Team coordination

One challenge of this project is to coordinate a team with different expertise and availability. You may find it easier to arrange yourselves into two sub-teams and work in parallel. On the next page, you will find an example project schedule. We strongly suggest you to select one person who will lead each sub-team and constantly communicate and coordinate with each other.

You are responsible for a fair distribution of workload among team members. Any issues regarding the fairness of work distribution should be raised according to the process below.

Teamwork Complaint Process

By default, every member will receive the same grade. But when some team members are slacking (*defendants*), the rest of the team (*plaintives*) may file a complaint using the following process. If the complaint is justified, we will lower the grade of defendant between 0.25–1.5 grading steps depending on the severity.

1. When the slacking occurs, you should warn the slackers (preferably, **in-person**) and devise a plan to make the workload fair. Make sure to document this meeting and the agreements.
2. When the warning is unsuccessful, **all other members (*plaintives*)** can file a complaint by emailing the following to `yang@ifi.uzh.ch`
   2.1. Subject: **HCI Teamwork Complaint**
   2.2. CC: **all members of the team,** including the *defendants*
   2.3. Body:
      I. Describe the reason of your complaint and the measure. Ensure that all necessary details are elaborated.
      II. Attach the meeting notes from step 1
      III. Describe the incidents following the meeting (including dates)
      IV. Describe what the plaintives prefer the defendents to do to make-up
      V. The names of all plaintives who agree with filing the complaint
3. The teaching assistant will acknowledge the receipt of the complaint by email.
4. *Defendants* have three days (72 hours) to **file a rebuttal** by replying-all to the complaint email.
5. The teaching assistant will acknowledge the receipt of the rebuttal by email.
6. At the project deliverable check-points (mid-term presentation or final presentation), the *plaintives* must **send a brief update** by replying to the same email thread. The update can be one of the following:
   6.1. The complaint had been addressed by the defendant and no grade adjustment is requested.
   6.2. The complaint had not been resolved. Add any information necessary to judge the case (e.g., event logs or meeting notes)
7. The teaching assistant will acknowledge the receipt of the update by email.
8. We will judge the case before releasing the mid-term grade and the final grade of the project based on the complaint email thread.

The email thread above is **a formal complaint** will consist of **maximum three emails from the group** (the complaint, the rebuttal, and the update). It should not be used as a back-and-forth communication among the members of the group.

First steps

1. Setup IT infrastructure
   1.1. Setup an **instant messaging** system for a more real-time coordination. (E.g., WhatsApp)
   1.2. Setup **a wiki on UZH connect** for documenting the project process (see below)
   1.3. Setup **a shared folder** on SWITCH Drive. This is the place to put large files, including data you collected from participants.
2. In the first meeting, you will **determine three potential user groups to propose**.
   2.1. Read the design brief
   2.2. Brainstorm about the potential users that you are interested in. According to the design brief, such users should be part of a specific community. You should ensure that you have access to at least three of them for

observation and testing prototypes. To encourage you to put the observation skill in practice, **it is prohibited to having students as the user group.**

Promising potential users:

- ✔ Retirees seeking engagement in social activities
- ✔ Members of an association that wish to rally people to a cause
- ✔ Team members of a sports who wishes to strengthen team spirits.
- ✔ Employee in a company who wishes to improve communication in the team

Users that are not suitable for this project work:

- ✗ Farmers in rural India *(It's unlikely that you will be able to observe or interview them directly.)*
- ✗ Everyone *(Too generic)*
- ✗ Everyone who do grocery shopping *(Too generic)*
- ✗ Students *(This user group is prohibited)*

2.3. Shortlist *at least three* potential user groups, and order them by your preference. For each user group, write one-sentence describing inclusion criteria, i.e., how would you determine if a person is in your user group.

2.4. Email the proposal of your user groups to `yang@ifi.uzh.ch` and cc: all members of your group. See submission deadline in the table above. The sooner you submit, the earlier you'll get feedback to proceed with your project.

Wiki setup

Setup a wiki for your group on UZH Connect (https://connect.uzh.ch/wikis/home). You will use this platform to collaborate and document your project. On this link, we provide a template for organizing your wiki. There are hints in blue text. You should ensure that all team members can access the wiki by having each of the member upload his/her photo on the front page. When you create a wiki, use the following configuration:

- Read access: All users. (We use this option instead of requiring you to add all 70+ participants in our class.)
- Edit access: Wiki editors and owners only.
- Members: Add all your team members as "Owner" (use full search by the UZH email address of each of your team member.) Also, add "Chia-Kai Yang" and "Chatchavan Wacharamanotham" as "Owner" (we need this for grading.)

Note: We choose UZH Connect over OLAT wiki or Google Docs for a few reasons:

- It is easier to setup group collaboration than OLAT
- The wiki editor is more user-friendly and is closer to WYSIWYG.
- All of your project data are safe inside the servers at UZH, and only accessible by UZH students and staff.

Nevertheless, there are a few things that you should consider when using the wiki:

- Never put identifiable information to your interviewee/users online. Always anonymize them, e.g., "P1".
- Never put your student ID online.

Next steps

You will determine the next steps of your work according to the knowledge about design process you will learn in lecture 1–4. We will release additional guides for each deliverable (reports, presentations, video, poster) on OLAT in the upcoming weeks.