HCI/Design Overview and Jobs for New College Grads

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The goal of this talk is to give college students an *overview* of Human-Computer Interaction (HCI) and Design, then show what *jobs* you can get with an HCI/Design degree.
Lots of HCI/Design Faculty and Research Staff at UC San Diego: Design Lab people page

+ 27 graduate students and 43 undergraduate students working on research in the lab (as of Dec. 2017)
Human-Computer Interaction (HCI) and Design is a super diverse field, so everyone you meet will have their own take on it ... I’ll try to cover the very basics.
One starting point is to give an overview of **COGS120/CSE170**: Introduction to HCI/Design

(a course currently taught each year by Professor Scott Klemmer and me)
In COGS120/CSE170, you will learn about a human-centered design process by building a web/mobile application for a target user population.
What you learn in Intro. HCI course (COGS120/CSE170):

Needfinding
Storyboarding
Paper Prototyping
Mockups: Visual Design
Interactive Prototypes
User Testing
Online Experiments
Final Web/Mobile App

What should we even build?
How should we start to build it?
What should it look and feel like?
How can we measure how well it works for real users?
How can we ship a finished product?
Needfinding
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Observe potential users in their natural habitats, interview them, find their actual problems/needs.

“Make something people need!!”
Photo by Kai-Fu Lee, motto by Y Combinator
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Make sketches on paper and get early feedback from users.

Video: https://www.youtube.com/watch?v=GrV2SZuRPv0
Use computer tools to make higher quality prototypes. Write code to make it into a working app.
Do science! Get users into the lab to gauge their reactions, or deploy experiments online & analyze data.

$60 million more in campaign donations

Interactive Prototypes
User Testing
Online Experiments
Final Web/Mobile App
Product is never “done”, just shipped!
Outline for rest of talk:

Kinds of design jobs
How to get one out of college
What about grad school?
Observe potential users in their natural habitat, interview them, find their actual problems/needs.

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Needfinding (find-need-ing?)
this time the need found me

Question I frequently get in office hours or after class:

“What kinds of jobs can I get if I’m an HCI/Design student?”
I’m not the best person to answer this question. But I’m here right now!

I graduated from college in 2005 with a degree in Electrical Engineering & Computer Science.

I’ve never worked as a designer.
The greatest thing about being a professor is having access to students and alumni who are experts on this topic ...
My impromptu panel of HCI/Design job experts

**Carolyn Zhang**
MIT computer science 2014
Designer @ small-ish design agency

**Emily Danchik**
U. Rochester computer science & linguistics
Carnegie Mellon master’s in HCI 2014
UX Architect @ large I.T. consulting firm
Former UX/Interaction Designer @ Microsoft

**Carrie Cai**
Stanford human biology / education master’s
MIT Ph.D. in computer science (HCI) 2017
Research Scientist @ Google

**Emy Lin**
U. Rochester computer science & linguistics 2016
Software Developer @ Intel
All of the insights are theirs; all of the mistakes are mine.

I created this talk itself using a human-centered design process!

Hopefully in the future I can call on you to be part of this panel.
One-slide summary: if you want an HCI/Design job ...

Build up a design portfolio, lean hard on personal and alumni connections, and get a design internship while in college.
Many students & alumni wished they had learned what’s in this talk at the beginning of college. Because all of this takes lots of time to prepare. Start early!
What jobs are available?

Conveniently, jobs correspond to what you learn in a typical Intro. to HCI/Design class!
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What jobs allow you to do this:

- UX (User eXperience) Researcher
- PM (Product/Project) Manager
- UX Designer
- Visual Designer
- Interaction Designer, UX Designer, UX Architect, UX Prototyper
- UX Researcher
- UX Researcher
- Data Scientist
- Front-end developer
- Software engineer
A disclaimer on *job titles*:

They’re confusing since different companies call similar jobs by different names, and names change fast. My head was spinning as I was researching this online.
Simplified overview of design job titles

- **UX Researcher** - needfinding, user testing/experiments
  - (often are master’s or Ph.D. grads)
- **Product Manager (PM)** - needfinding, team coordination
- **UX/Interaction/Product Designer** - non-code prototypes
  - *(most common* type of job for new college grads)*
- **UX Architect/UX Prototyper** - design + some coding
- **Visual Designer** - art/graphics
- **Data Scientist** - write lots of code to analyze data; Ph.D.-focused
- **Front-end Developer** - write lots of production code

Sometimes the term “product designer” refers to a person who takes on multiple design roles
To learn more: [https://www.invisionapp.com/blog/building-an-enterprise-ux-team/](https://www.invisionapp.com/blog/building-an-enterprise-ux-team/)
How do you get an HCI/Design job out of college?

Build up a design *portfolio*, lean hard on personal and alumni *connections*, and get a design *internship* while in college.
Portfolio + connections -> internship -> full-time job
Portfolio (basics)

- Start by making a personal website as your portfolio
- Class projects with design components (many at UCSD!)
- Volunteer to help on-campus groups or friends with projects; be resourceful about finding work
  - Look beyond web/mobile apps: create posters, art pieces, event flyers, business/marketing slide decks
- Work part-time as a freelance designer for local companies or friends’ startups while in school
- Once you get a design internship, put in portfolio too
Portfolio (advanced)

- Have a compelling and fresh **point-of-view** that frames your work and makes you stand out
  - Avoid cliches like “I’m passionate about making innovative progress at scale.”
- Be able to justify and critique your own process
  - **Very important:** it’s all about PROCESS PROCESS PROCESS!
- It’s OK to show how you *improved* an existing product rather than creating your own from scratch
  - In fact, that’s a much, much, much more realistic approximation of what you will do in your future job
- Emphasize most relevant projects to desired roles
Portfolio + **connections**

- Cold-email alumni, especially *recent* alumni who put themselves on career advising lists
- Cold-email alumni regardless; people are nice!
- Friends, family, dormmates, instructors ...
  - Portfolio is key! Show them you do good work
- Your bosses from prior jobs/internships
- *Most good jobs obtained via personal connections*
Portfolio + connections -> **internships**

- Prepare for interviews: critique your portfolio
- Lots of interview prep resources
  - e.g.,: [A Guide to Interviewing for Product Design Internships](#)
- Mainly target design-oriented internships
  - Maybe front-end developer (more on that later)
- Ideally you can put internship work in your portfolio
- If you can’t get internships, *spend your summers building your portfolio in any way you can*
Looking for a full-time job *is* a full-time job.

Apply broadly, and don’t worry if you don’t exactly match the job description. It’s free to apply!
Looking for a full-time job is a full-time job.

Don’t have your heart set on any one specific place; successful applicants apply to dozens of jobs.
Company size:

In general, smaller company -> more varied roles
(e.g., designer at startup may do needfinding, front-end coding, even marketing)

- N=1 (freelancer): ++flexibility, --uncertainty
- N=tiny (startup): +variety, +growth, -uncertainty
- Small-ish design agency: work directly with clients
- In-house designer at big company: more fixed roles
Looking beyond the usual tech companies ...

Government I.T. agencies

Government contractors

Defense industry

Federal science labs

Nonprofits

(HCI/Design skills often in demand but these sectors can’t easily attract the most experienced designers. You can make a big impact here!)
Looking beyond pure design jobs ...

- In 2015, 93% of surveyed designers said *coding was important* (in 2005, ~5% would say so)
- Ideal ratio: 1 designer for every 5 programmers
- Reality: 1 designer every 10-30 programmers
- Reality: *far more* programming than design jobs
- A good adjacent role is *front-end developer*
  - Build up your design portfolio on the side while working and learn from designers on your team; transition to design later
  - Many places still don’t value design but do value programming; it’s your chance to sneak design thinking into your workplace!
What if you can’t find a full-time job right away?

One idea: do freelance design jobs ...

- to make some money from part-time work
- to most importantly, build up your *portfolio* and *connections*
  - ... which will improve your odds of landing a full-time job in the future
  - Employers tend to value real-world work experiences more than class/school projects
- (find these via personal connections or online postings)
Should you go to graduate school ...

to get a master’s degree in HCI/Design?

- NO - if you already have good portfolio/internships
- NO - if you can already get a design job from college
- MAYBE - if your major is far away from HCI/Design
- MAYBE - if you want to be a design teacher
- YES - if you don’t have a strong portfolio yet
- YES - if you can afford the tuition and time
- YES - if you want to be a UX Researcher
Should you go to graduate school ...

... to get a Ph.D. degree in HCI/Design?

- NO - if you’re aiming for *most* design-related jobs
  - (hired at same or slightly-higher level than bachelors/masters)
- MAYBE - if you want to be a UX Researcher
- YES - if you want to be a university professor
- YES - if you want to be a research scientist
  - (despite the similar-sounding job title, research scientists do more open-ended and exploratory work than UX Researchers)
- YES - if you want to be a data scientist
Recap: how do you get an HCI/Design job out of college?

Build up a design portfolio, lean hard on personal and alumni connections, and get a design internship while in college.
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Summary of HCI/Design jobs -- time for questions!

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Appendix: Suggested Job-Related Resources

How To Find a Job or Graduate School in Human-Computer Interaction, Interaction, or Industrial Design, by Don Norman

Use Human-Centered Design for your Resume, by Don Norman

Cracking the PM Interview: How to Land a Product Manager Job in Technology

College Students, Product Manager is the Best Job You Never Heard Of (blog post)
Presentation history and credits

2017-12-05: v2, given in UCSD COGS1

2017-11-27: v1 - first prototype, given in UCSD COGS120/CSE170

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