HCI/Design Jobs for New College Grads

Philip Guo
http://pgbovine.net/hci-design-jobs.htm
Assistant Professor of Cognitive Science
UC San Diego Design Lab
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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.

We're going to go very fast and there's a lot of dense text packed into these slides.

Don't worry, you can find them online:
http://pgbovine.net/hci-design-jobs.htm

Lots of HCI/Design Faculty and Research Staff at UC San Diego: Design Lab people page

The Design Lab — RESEARCH EDUCATION COMMUNITY NEWS & EVENTS ABOUT US JOIN US

People

Don Norman
Director

Don Norman is Founder and Director of the Design Lab at the University of California, San Diego. He was one of the first founding faculty of UCSD, originally in the Department of psychology, where he also served as chair. He was a co-founder and first chair of the Cognitive Science Department.

Read More

Faculty, Staff, & Researchers

Morana Alac — Communications

Eliah Aronoff-Spencer — Infectious Diseases, Medical School

Ben Bergen — Cognitive Science

Benjamin Bratton — Visual Arts

Sheldon Brown — Visual Arts

Nate Delson — Mechanical Engineering

Steven Dow — Cognitive Science

Christine (Teenah) Eco — Administrative Project Coordinator

Colleen Emmenegger — Researcher

Clint Evangelista — A/V Producer-Director (Contingent)

William Griswold — Computer Science Engineering

Philip Guo — Cognitive Science, Computer Science Engineering

Eric Hekler — Family and Preventative Medicine

Jim Hollan — Co-Director of Design Lab, Cognitive Science, Computer Science Engineering

Lilly Irani — Communications, Science Studies, Critical Gender Studies

David Kirsh — Cognitive Science

Scott Klemmer — Co-Director of Design Lab, Cognitive Science, Computer Science Engineering

Albert Lin — Qualcomm Institute

Narges Mahyar — Design Lab Postdoctoral Researcher
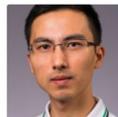
Melanie McComsey — Design Lab Postdoctoral Researcher

Olga McConnell — Executive Assistant to Don Norman

Michael W. Meyer — Rady School of Management

Michèle Morris — Associate Director

Lars Müeller — Design Lab Postdoctoral Researcher

Kevin Patrick — Family and Preventative Medicine

Rahul Ramath — Researcher (Contingent)

Laurel Riek — Computer Science Engineering

Ali Sarvghad — Postdoc Researcher, Computer Science Engineering

Ian Strelsky — Operations Manager and Communications Lead

Nadir Weibel — Computer Science Engineering

+ 27 graduate students and 43 undergraduate students working on research in the lab
(as of December 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

What should we even build?

Storyboarding

Paper Prototyping

How should we *start* to build it?

Mockups: Visual Design

What should it look and feel like?

Interactive Prototypes

User Testing

How can we measure how
well it works for real users?

Online Experiments

Final Web/Mobile App

How can we ship a finished product?

Needfinding

Storyboarding

Paper Prototyping

Mockups: Visual Design

Interactive Prototypes

User Testing

Online Experiments

Final Web/Mobile App

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

Needfinding

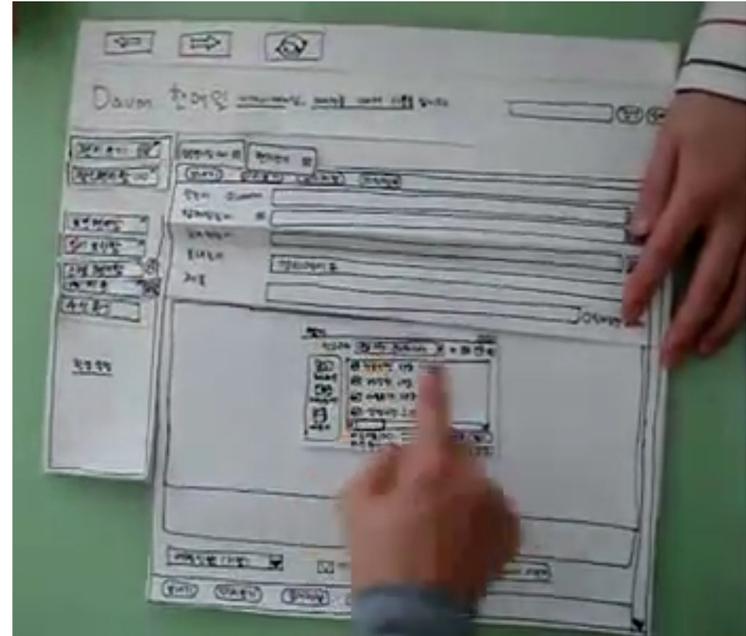Storyboarding

Paper Prototyping

Mockups: Visual Design

Interactive Prototypes

User Testing

Online Experiments

Final Web/Mobile App

Make low-fidelity sketches on paper and get early user feedback

Video: https://www.youtube.com/watch?v=GrV2SZuRPv0

Needfinding

Storyboarding

Paper Prototyping

Mockups: Visual Design

Interactive Prototypes

User Testing

Online Experiments

Final Web/Mobile App

Use computer tools to make higher quality prototypes. Write code to make it into a working app.
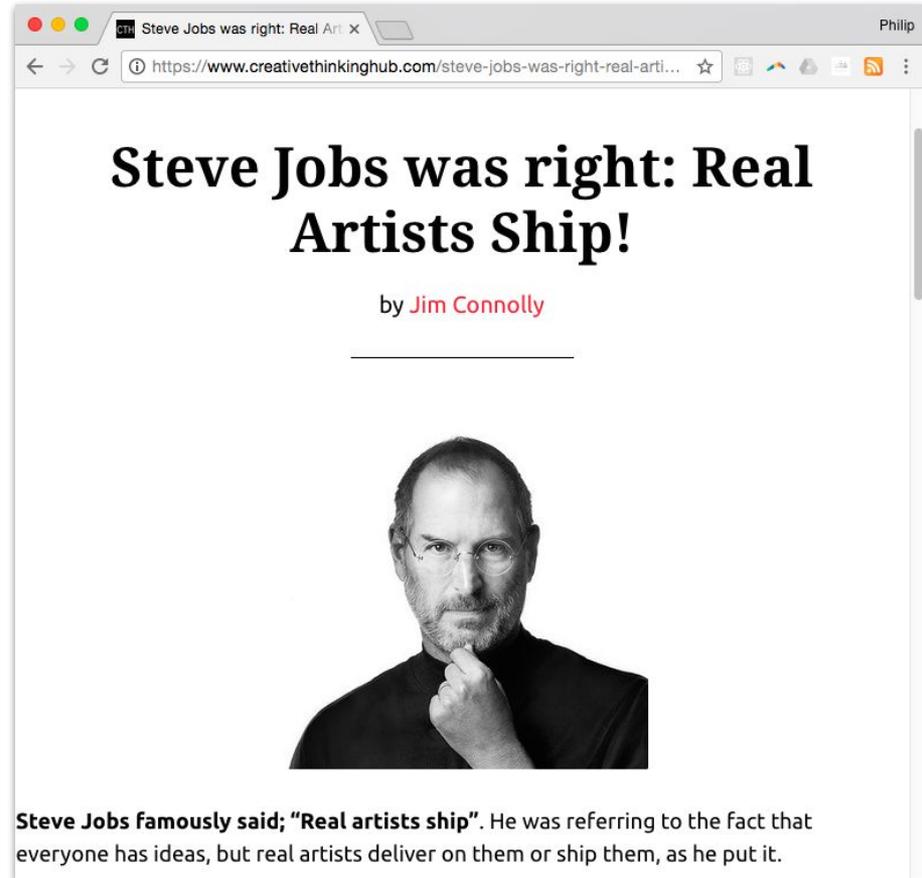
Media

Button

$60 million more in campaign donations

Source: https://blog.optimizely.com/2010/11/29/how-obama-raised-60-million-by-running-a-simple-experiment/

Interactive Prototypes

User Testing

Online Experiments

Final Web/Mobile App

Do science! Test on real people in their natural habitats, get users into your lab, deploy experiments online & analyze collected data.

Needfinding

Storyboarding

Paper Prototyping

Mockups: Visual Design

Interactive Prototypes

User Testing

Online Experiments

Final Web/Mobile App

Steve Jobs was right: Real Artists Ship!

by Jim Connolly

Steve Jobs famously said; "Real artists ship". He was referring to the fact that everyone has ideas, but real artists deliver on them or ship them, as he put it.

Source: https://www.creativethinkinghub.com/steve-jobs-was-right-real-artists-ship/

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?

Needfinding

Observe potential users in their natural habitat, interview them, find their actual problems/needs.

Storyboarding

Paper Prototyping

Mockups: Visual Design

Interactive Prototypes

User Testing

Online Experiments

Final Web/Mobile App

Needfinding (find-needing?)
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

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

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

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 add your insights.

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.

(This will maximize your chances of getting interviews. You still need to pass them!)

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!

What you learn in Intro. HCI course
(COGS120/CSE170):

Needfinding

What should we even build?

Storyboarding

Paper Prototyping

How should we *start* to build it?

Mockups: Visual Design

What should it look and feel like?

Interactive Prototypes

User Testing

How can we measure how
well it works for real users?

Online Experiments

Final Web/Mobile App

How can we ship a finished product?

What you learn in Intro. HCI course (COGS120/CSE170):	What jobs allow you to do this:
Needfinding	
Storyboarding	UX (**U**ser e**X**perience) Researcher PM (Product/Project) Manager
Paper Prototyping	UX Designer
Mockups: Visual Design	Visual Designer
Interactive Prototypes	Interaction Designer, UX Designer, UX Architect, UX Prototyper
User Testing	UX Researcher
Online Experiments	UX Researcher Data Scientist
Final Web/Mobile App	Front-end developer, Product engineer, Software engineer

A disclaimer on design *job titles*:

They're confusing since different companies call similar jobs by different names, and names change fast. Read *job descriptions* and ask companies for what they really want from candidates.

Simplified overview of design job titles
Disclaimer: you may do multiple roles in one job and "wear many hats"

- **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/

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 for friends

Portfolio (basics)

- 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
- Look at friends' and alumnis' portfolios/resumes as examples of how to make yours

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*!
  - Justify what you did, how you did it, and why it matters
  - Very important for dispelling the myth that design is only about visual aesthetics or "making stuff look good". It's about making stuff that's ultimately beneficial to real users.

Portfolio (advanced)

- It's OK to show how you *improved* an existing real product rather than creating your own entirely from scratch
    - More authentic and with real-world constraints
    - 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 your desired job 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*
- Also use personal connections to critique your portfolio, resume, and cover letters

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
  - …but if you can't, still talk thru your design process at a high level
- 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!

Design job descriptions can be vague and not exactly what hiring managers are looking for, so it's worthwhile to still apply in case someone is looking for your skills.

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.

Keep track of applications using a spreadsheet, and take the time to customize your resumes/cover letters.

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
    - (Except when they don't have much experience with design yet. Then you'll probably have to do a bit of everything.)

Looking beyond the usual tech companies …

Retail / logistics / e-commerce companies

Government I.T. agencies

Government contractors

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)
    - Source: John Maeda, https://designintechreport.wordpress.com/2015/03/15/design-in-tech-report-2015/
- 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 or contract 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.

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!

Appendix A: 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)

Christi's suggestion: "I'd also suggest people set up passive job post search digests on Linked-In, Glassdoor, Indeed, etc. Once you set one up for your search terms, i.e. 'UX Designer,' then every day (or whatever frequency you set) a digest will land in your inbox so you can see what's out there."

Appendix B: PM (Product Manager) jobs, from Anvisha

- Most companies **don't** hire new grad PMs. The few that do tend to be larger - Google, Facebook, Uber, Dropbox & Yelp have Associate PM (APM) programs.
  - If you want to do PM at a smaller company, you probably need a personal connection with the company or to join a startup in an engineering/operations role and try to get promoted within 2-3 years.
  - IMO, the best route is to do the big company gig to start! Being a PM at a startup is very hit or miss as a first job.
- Similarly, there are very few PM internships. The notable one is Google APM, but it's very competitive so a software or design internship would be a good alternative.
- Given the lack of internships, good ways to tee up yourself for a PM role are...
  - Technical / coding skills. Bunch of places will have a technical / algorithm interview
  - Leadership roles or projects on campus that show initiative and creativity
- If you want to start a startup or be a CEO someday, PM is a good path to go down. Though by no means the only way!

Relevant link: https://medium.com/@jackiebo/college-students-product-manager-is-the-best-job-you-never-heard-of-5d4b7ca41ab7

Summary of HCI/Design jobs

Needfinding	
Storyboarding	UX (**U**ser e**X**perience) Researcher PM (Product/Project) Manager
Paper Prototyping	UX Designer
Mockups: Visual Design	Visual Designer
Interactive Prototypes	Interaction Designer, UX Designer, UX Architect, UX Prototyper
User Testing	UX Researcher
Online Experiments	UX Researcher Data Scientist
Final Web/Mobile App	Front-end developer, Product engineer, Software engineer

Presentation history and credits

2018-03-07: v3, given in UCSD COGS1

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

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

Thanks to: Carolyn Zhang, Carrie Cai, Emily Danchik, Emy Lin (original 2017 panel)

Marcos Ojeda, Sean Kross, Don Norman, Thi Dang, Kandarp Khandwala, Christi Hagen, Anvisha Pai