

HCI/Design Overview and 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.

Lots of HCI/Design Faculty and Research Staff at UC San Diego: [Design Lab people page](#)

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](#)



Sheldon Brown
Visual Arts



Nate Delson
Mechanical Engineering



Steven Dow
Cognitive Science



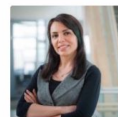
Christine (Teenah) Eco
Administrative Project Coordinator



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



Colleen Emmenegger
Researcher



Clint Evangelista
A/V Producer-Director (Contingent)



William Griswold
Computer Science Engineering



Philip Guo
Cognitive Science, Computer Science Engineering



Olga McConnell
Executive Assistant to Don Norman



Michael W. Meyer
Rady School of Management



Michèle Morris
Associate Director



Lars Müeller
Design Lab Postdoctoral Researcher

Faculty, Staff, & Researchers



Morana Alac
Communications



Eliah Aronoff-Spencer
Infectious Diseases, Medical School



Ben Bergen
Cognitive Science



Benjamin Bratton
Visual Arts



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



Kevin Patrick
Family and Preventative Medicine



Rahul Ramath
Researcher (Contingent)



Laurel Rick
Computer Science Engineering



Ali Sarvaghad
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 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

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

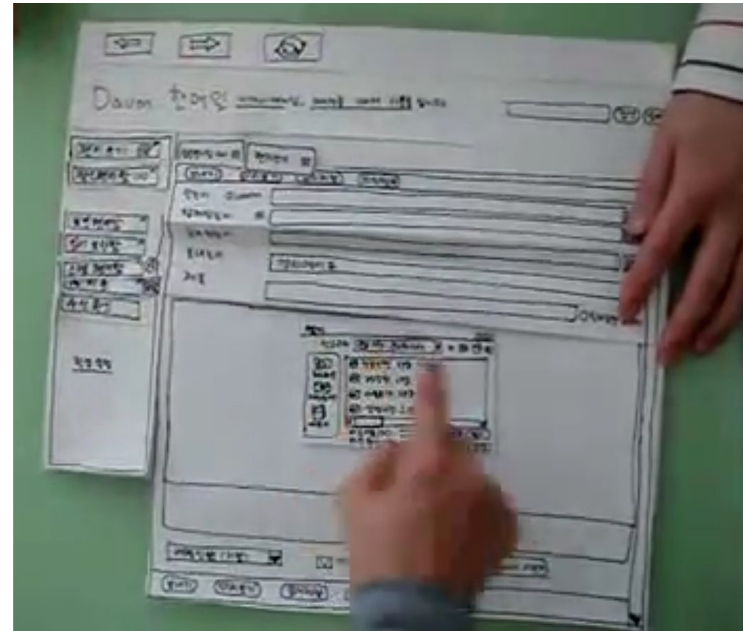
Interactive Prototypes

User Testing

Online Experiments

Final Web/Mobile App

Make sketches on paper and get early feedback from users.



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

Needfinding

Storyboarding

Paper Prototyping

Mockups: Visual Design

Interactive Prototypes

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Online Experiments

Final Web/Mobile App

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



\$60 million more in campaign donations

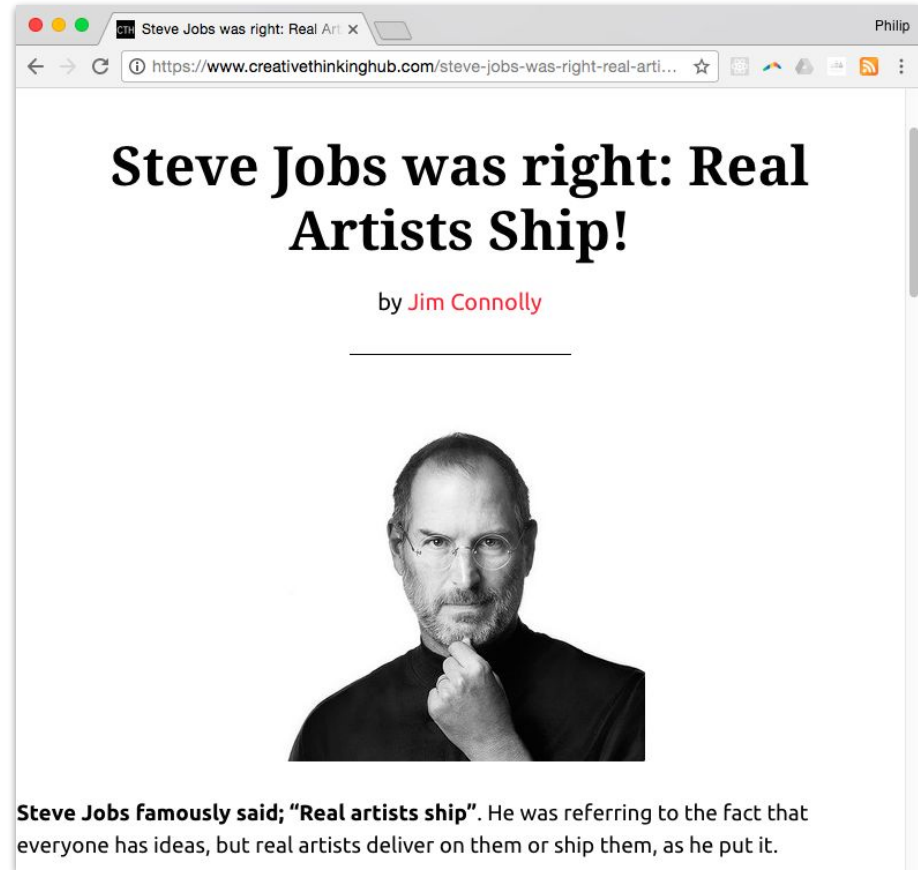
Source: <https://blog.optimizely.com/2010/11/29/how-obama-raised-60-million-by-running-a-simple-experiment/>

User Testing Online Experiments

Do science! Get users into the lab to gauge their reactions, or deploy experiments online & analyze data.

Final Web/Mobile App

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



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

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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



Amy 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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(COGS120/CSE170):

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How can we ship a finished product?

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

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Storyboarding

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Online Experiments

Final Web/Mobile App

What jobs allow you to do this:

UX (**U**ser **eX**perience) 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/>

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)
 - Source: [John Maeda, https://designintechreport.wordpress.com/2015/03/15/design-in-tech-report-2015/](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 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!

Summary of HCI/Design jobs -- time for questions!

Needfinding	UX (U ser eX perience) Researcher
Storyboarding	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 Software engineer

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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