

Research Career Paths

CS 197 | Stanford University | Arpita Singhal
cs197.stanford.edu

(Adapted from Prof. Michael Bernstein's slides)

Administrivia

You're working on submitting your **project plan** through the end of the quarter. Time to get cracking!

In parallel, your **draft paper (A5)** is due soon

- Iterate on required or recommended revisions

- Write new sections as needed

Project reports through week 9, draft paper due in week 9, draft talk due in week 10, final paper and talk due during finals

Today's goals

What happens if I keep doing research at Stanford? And after?

“OK, so I took CS 197, now what?”

What can you do after Stanford?

What can you do at Stanford?

Pathways for research

Research
is interesting



(we'll unpack this part
in a moment)

Professor

Research scientist in industry

Entrepreneur

Engineer / Engineering Lead

Professor

Work on **research** that you and the field find interesting.

Recruit the best **rising talent** in the world and **mentor** them.

Teach in your area of expertise.

Typical goals:

- Do research and have impact (e.g., publications, software adoption)

- Graduate amazing students

- Inspire students to learn about your area

- Room for personalization: entrepreneurship, speaking, consulting, &etc.

Research scientist

Join a **company's research division** and work on research from within the company. Examples: Microsoft Research, Meta FAIR, NVIDIA Research, OpenAI

Typical goals:

- Do research and have impact (but more focus on translation to the company's products and less on publication)

- Create innovations that transform the company you're working for (e.g., Kinect, GPT-3, DALL-E, PaLM, TPUs)

Entrepreneur

Start your own **company**, often based on the research you're doing, and grow it.

Typical goals:

- Scale your ideas and make them available to millions of people

- Start a new industry: your start-up is not a “follow-the-crowd” startup. Typically, it's pitching a dramatically new angle.

- Little focus on doing research in the short term

Engineer / Engineering Lead

Join a company and apply your skills toward the **development of product**

Typical goals:

- Be the company's expert in an area, and potentially grow a team to drive product in that space

- Typically, these jobs are for types of levels of expertise and experience that cannot be acquired through a BS or MS

- Little focus on doing research in the short term

What's the distribution?

I looked into this! I scraped names of all **Ph.D. graduates in Computer Science** from Stanford, MIT, and UC Berkeley.

I then mapped the names onto **LinkedIn** pages (yes, LinkedIn availability adds bias, but we found about 75% of people)

Tag their jobs on their LinkedIn:

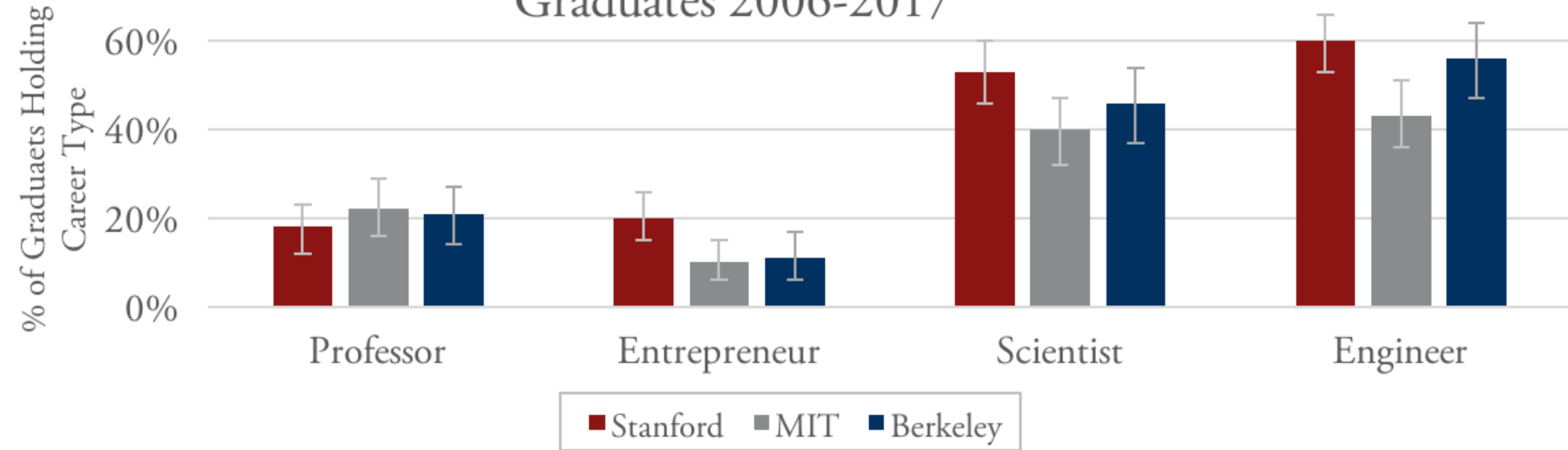
Faculty: job titles including words such as “faculty” or “professor”

Entrepreneurship: triggered by titles such as “founder” or “partner”

Research scientist: titles such as “researcher” or “scientist”

Engineer: titles such as “programmer” or “architect”

Graduates 2006-2017



No statistically significant difference

No statistically significant difference

No statistically significant difference

Percentages add up to more than 100% because people can hold more than one position. Entrepreneurs and research scientists are a common mix. Faculty, likewise, can sometimes jump into industry research or start a company.

Pathways for research

Research
is interesting



(we'll unpack this part
in a moment)

Professor

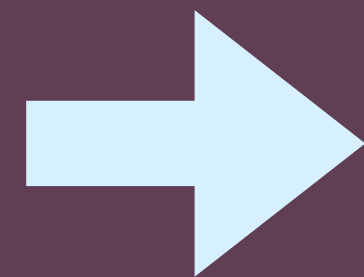
Research scientist in industry

Entrepreneur

Engineer / Engineering Lead

Pathways for research

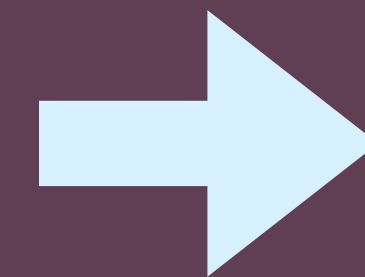
Research
is interesting



Academic year
research

Summer CURIS
internship

BS with honors



Professor

Research scientist in industry

Entrepreneur

Engineer / Engineering Lead

Academic year research

Get **units for doing research** with a faculty member

Generally, start with CS 195, which fulfills the CS Senior Project requirement, then go on to CS 199

How to get started? **Talk to your TA about possible faculty to approach**, and we can help facilitate an introduction.

Typically, you'll **get involved in a project ongoing in the lab**

Continuing CS 197 research

The TAs are happy to keep working with you! If you'd like, we can support similar independent study courses (e.g., **CS 195**) to continue your CS 197 project toward a workshop, work in progress, or paper

We, the staff, are also happy to help **facilitate introductions to faculty** you want to work with

Summer CURIS research

Apply your full effort toward a fun research project for the **summer**

- Get mentored by a faculty member and PhD student

- Get paid

- No need to balance the project against classes

- Live on campus

Typically, you **join a project that's ongoing** in the faculty member's lab

Apply early in winter quarter at curis.stanford.edu

BS with honors

Receive a special designation on your diploma (“**BS with honors**”)

Engage in a **yearlong research project** your senior year

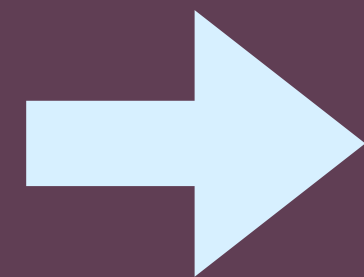
- Takes the place of the senior project

- Typically, you do this with faculty who you’ve already been working with

Apply in the spring of your junior year

Pathways for research

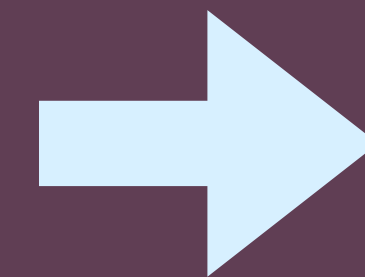
Research
is interesting



Academic year
research

Summer CURIS
internship

BS with honors



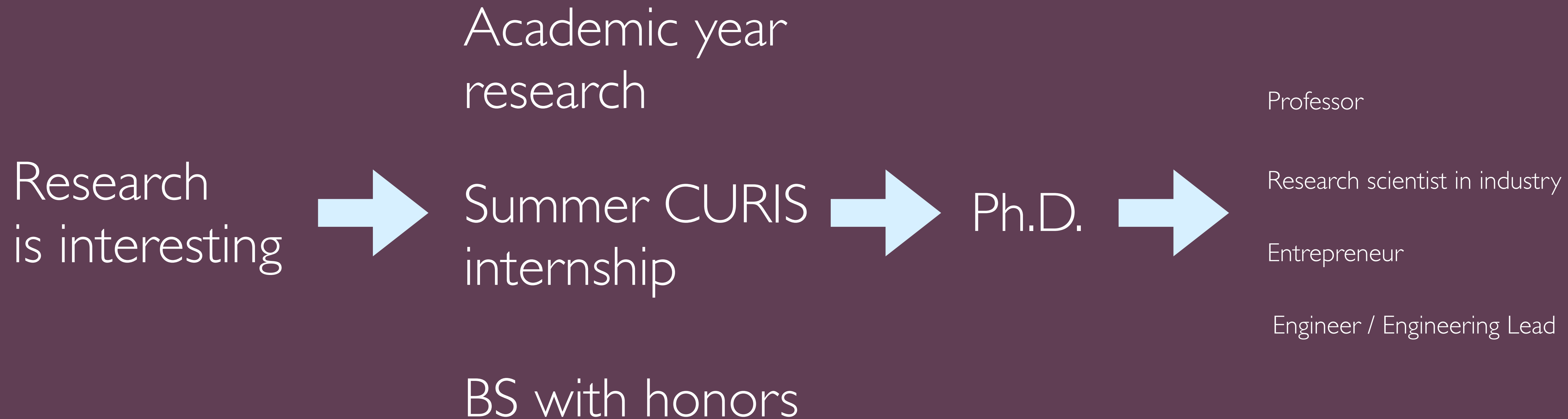
Professor

Research scientist in industry

Entrepreneur

Engineer / Engineering Lead

Pathways for research



All of you can succeed at a PhD!

A Ph.D. is a **grown-up version of the research you do** as an undergraduate or master's student. You get **much more control** over the projects you are working on, and become **first author** on the resulting publication.

It's **challenging** because we doubt ourselves constantly. But you also earn the ability to tackle any complex problem.

Cool side benefit: become Dr. [Lastname]

How do I get in to a Ph.D.?

The most important criteria for getting into a Ph.D. program is **demonstrated interest and ability** to do research.

“How do I demonstrate interest and ability?” **Do research!**

How do I get in to a Ph.D.?

In your statement, talk about **research you did** and the **impact you had on the project**. (You can include your CS 197 class project in it!)

You will want **three recommendation letters from people with Ph.D.s** to support your case.

Typically, one is the faculty you worked most closely with on research. The other two can be supporting letters, or other research mentors available.

**What questions
do you have?**

Panel on research careers

Research Career Paths

Slide content shareable under a Creative Commons Attribution-NonCommercial 4.0 International License.