# 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)

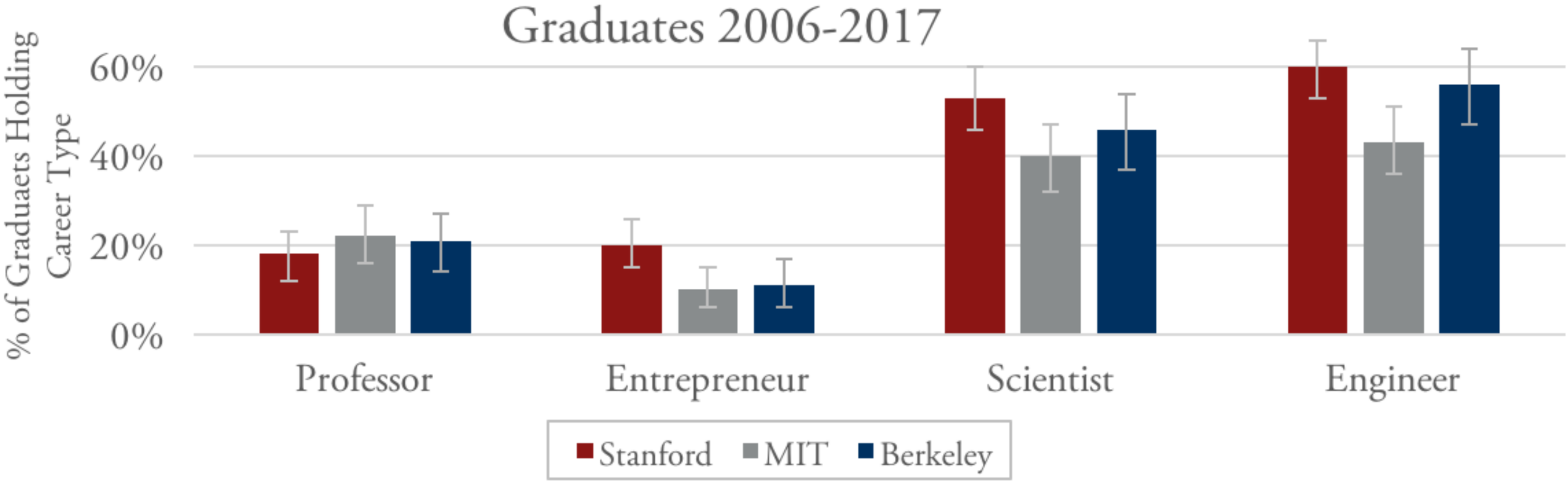
Tag their jobs on their LinkedIn:

**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"




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.

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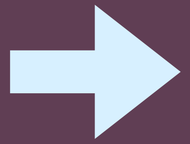
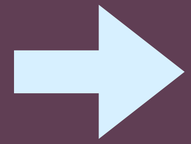


Academic year research

Summer CURIS internship

BS with honors



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# 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 CS197 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

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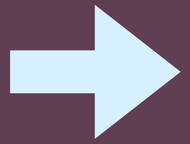

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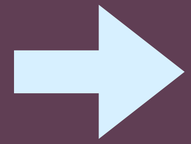

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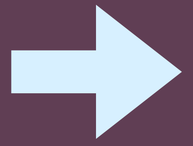

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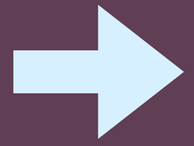
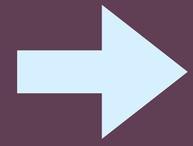


Ph.D.



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# 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