

Technical Interview Preparation in Summer (TIPS)

Lecture 1: Course Introduction & Landscape

What is TIPS?

- 10-week programme
- Student-run, advised by Prof Ben and Yangshun
- Outline:
 - Week 1 - 2: Big Picture & Resume Preparation
 - Week 3 - 5: Technical Interviews
 - Week 6: Interview soft skills
 - Week 7 - 8: Sharing by senior students & alumni

Objectives

- Help you understand why you should apply for internships, how you can do it, and what's out there.
- Build technical interview confidence and communication skills.
- Help you to prepare your resume for interviews.
- Broaden your knowledge regarding the CS job landscape

Why do we have this course?

- Bridge the gap between what SoC teaches vs skills needed to get internships
- Increase number of SoC alumni working in top tech companies
- Increase the appeal of hiring SoC students
- We want you to have a fulfilling career, achieved by making well-informed career decisions 😊

Highlights of Course

- Peer-learning activities
 - Mock interviews with a classmate
 - Resume reviews
- Expert sharing panels
 - Recruiters
 - Students who have interned
 - Alumni
 - Tech leaders of companies

What we will not cover

- System design interviews
 - Usually only relevant to candidates with industry experience
 - Fresh graduates usually do not get asked system design
- Domain-specific interviews
 - e.g. Front End interviews, Mobile interviews, Data Science/analytics interviews)
 - Not relevant to everyone and insufficient time to cover
 - For Front End interviews, check out [Yangshun's Front End Interview Handbook](#)

Teaching Team - Advisors



A/P Ben Leong



Yangshun Tay

Teaching Team - TAs



Christopher Goh

- Year 3 CS
- Currently: Jump Trading
- Previously: Indeed, Carousell, DSO National Laboratories



Zhu Hanming

- Year 3 CS
- Currently: Meta (in a few months)
- Previously: Meta, CVWO, Joni.AI

Teaching Team - TAs



Kevin

- Year 4 CS
- Currently: Google (in a few months)
- Previously: Google, DBS Bank



Xinyue

- Year 3 CS
- Currently: Jane Street
- Previously: AlphaLab Capital, Shopee, CVWO

Teaching Team - TAs



Ziqing

- Year 2 CS
- Currently: ByteDance
- Previously: CVWO



Rohit

- Year 2 CS
- Currently: Stripe
- Previously: Asana, Ascenda

Confession

We are making it up as we go along...

**Content from some of the slides are adapted from NUS
Hacker's Project Intern talk, with permission.**

Today's Philosophy

High level idea of how to prepare for internships

We're not going to go into the nitty gritty. Lots of resources here, come back and revisit those hyperlinks when you have the time.

**Why do an
internship?**

Graduation Requirement

Real world experience: Theory → Practice

Find out what you like

Meet new people & mentors

Explore the world

\$ and other perks

Graduation Requirement

Industrial Experience Requirement

Students will be required to satisfy 12 MCs of Industrial Experience Requirement by doing:

- A 6-month internship through CP3880 *Advanced Technology Attachment Programme* (12 MCs);
- Two 3-month internships through two of the followings:
 - CP3200 Internship (6 MCs);
 - CP3202 Internship II (6 MCs);
 - CP3107 Computing for Voluntary Welfare Organisations (6 MCs);
 - CP3110 Computing for Voluntary Welfare Organisations II (6 MCs).
- IS4010 *Industry Internship Programme* (12 MCs) from the Department of Information Systems and Analytics;
- TR3202 *Start-up Internship Programme* (12 MCs) from NUS Overseas Colleges;
- Other forms of industry experience approved by the Department of Computer Science.




Students who aim for Honours (Highest Distinction) must pass the CP4101 BComp Dissertation. Students with CAP of 4.00 or higher after completing at least 70% (i.e. 112 MCs) of the MC requirement for the degree programme may opt to replace the Industry Experience Requirement by CP4101 B.Comp Dissertation (12 MCs). Note that the CP4101 project selection process takes place one semester ahead of the semester in which the students commence CP4101. Thus the students can tentatively select CP4101 projects; but the condition "CAP of 4.00 or higher after completing at least 70% (112 MCs) of the MC requirement for the degree programme" must be satisfied before they can commence CP4101 in lieu of Industry Experience Requirement.


Industry Experience Requirement

The industry experience modules are as follows:

1. A 6-month internship through CP3880 *Advanced Technology Attachment Programme* (12 MCs), IS4010 *Industry Internship Programme* (12 MCs), or TR3202 *Start-up Internship Programme* (12 MCs);
2. A 3-month internships through one of the followings: CP3200 Internship (6 MCs), CP3202 Internship II (6 MCs), CP3107 Computing for Voluntary Welfare Organisations (6 MCs), CP3110 Computing for Voluntary Welfare Organisations II (6 MCs);
3. Other forms of industry experience approved by the Department of Computer Science. Certain NOC internships are not CP-coded, but also can be used to satisfy Breadth-and-Depth requirements as if they were CP-coded.






Real world experience: Theory → Practice






Layout Explorer

34,904 views



2.1K 17 Share Save Report



Flutter

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Published on Aug 17, 2020

The Layout Explorer visualizes how Flex widgets and their children are laid out. Albertus Angga, Flutter Software Engineering Intern, shares the top 3 ways you can use Layout Explorer to debug layout issues while building your app.

Using the Layout Explorer → <https://goo.gle/30VsQlw>

Learn everything about Flutter at → <https://flutter.dev>

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What our interns built this summer: Meet our 2019 intern class


By [Steven Rybicki](#) Oct 11, 2019 0



Every summer, we have a class of interns join our engineering team. They work on important and impactful projects, contribute to feature launches, site stability and making the codebase a more pleasant place to develop in. This year we had our largest class yet: 25 interns across engineering, data engineering, and data science teams.

As is our now [yearly tradition](#), I caught up with some of our





facebook / [react](#)

Code Issues 459 Pull requests 111 Action


[Jump to bottom](#)

Import React Concurrent Mode Profiler #19634

bvaughn merged 131 commits into [facebook:master](#) from [MLH-Fellowship:scheduling-profil...](#) Aug 20, 2020

Merged

Conversation 60 Commits 131 Files changed

 [taneliang](#) opened this pull request 9 days ago • edited 9 days ago

Labels

CLA Signed

Linked issues

Import this project into React repo packages

Summary

This PR imports the concurrent mode profiler [project](#) into `packages/react-devtools-scheduling-profiler`, with history 🌈

Find out what you like

Company scale: Startup vs Big Tech

Company purpose: Product vs Consultancy vs Quant

Company culture: What are their values and how do they align with yours?

Nature of role: Frontend? Backend? Product Engineering?
Product Management? Data Engineering? Infra?

Meet new people

Meet mentors

Meet other interns

Learn vicariously through the experiences of others

What's the process?

Step 1: Know the process

Step 2: Prepare to apply

Resume

Interview

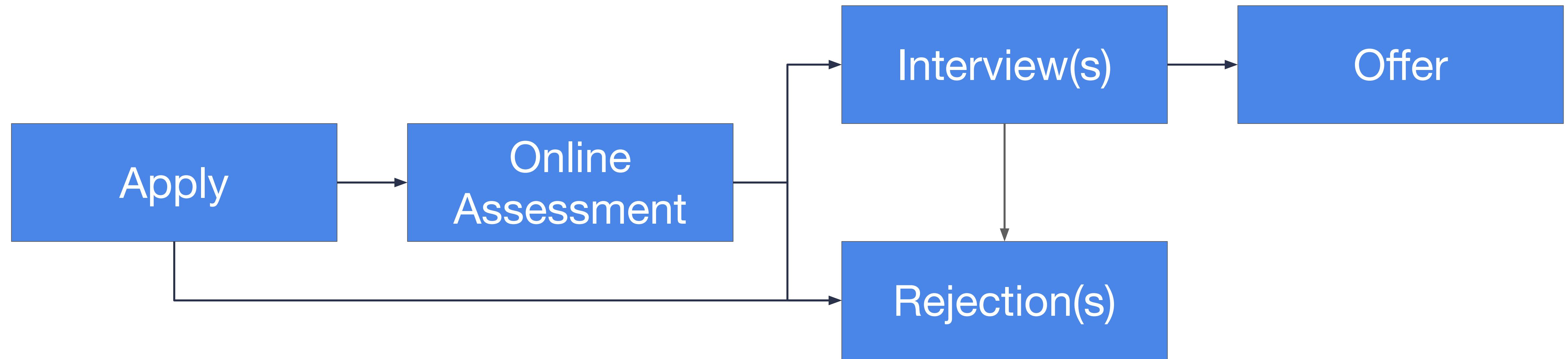
Step 3: Apply

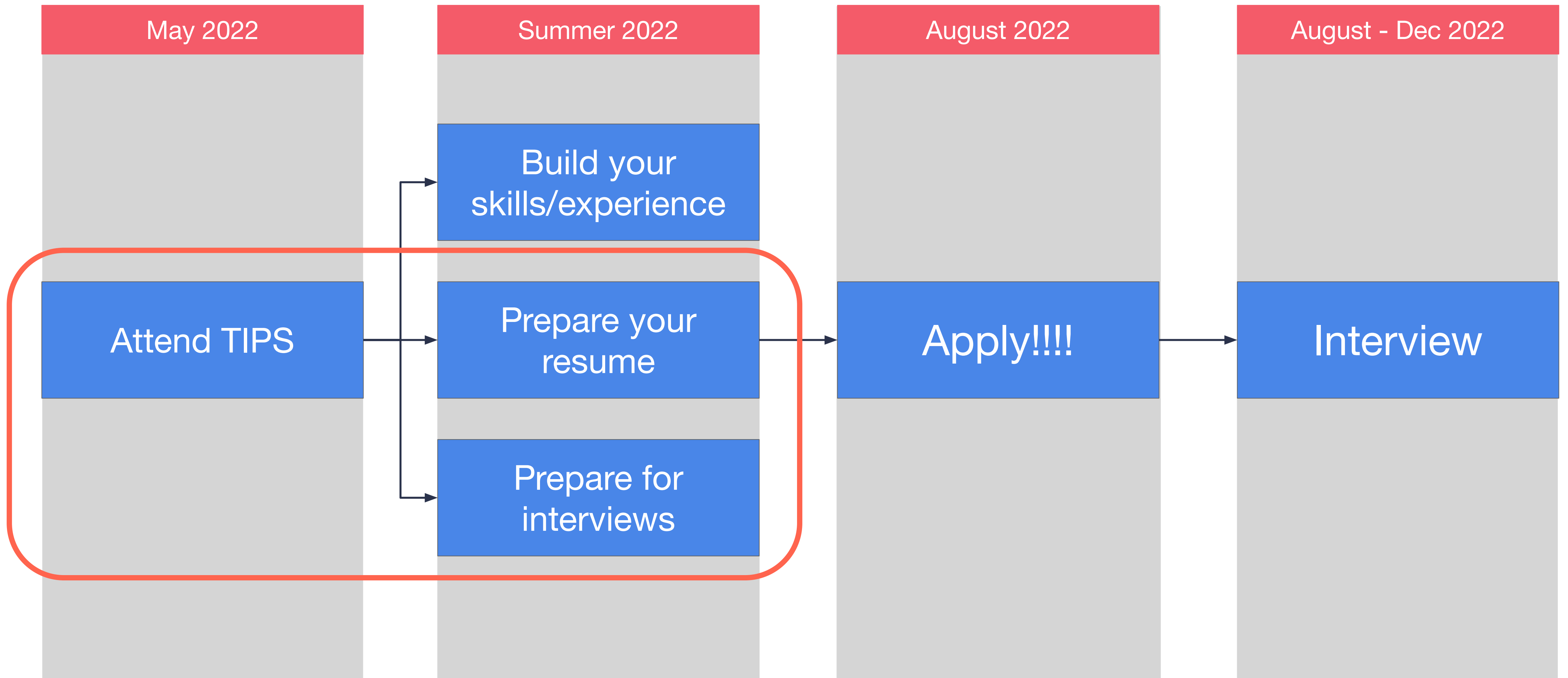
Where to find
internships

Referrals

Rejections

Step 4: Go through the interview
process







Prepare your resume

Resume

Resume writing resources

- <https://www.techinterviewhandbook.org/resume/>
- <https://luyangkenneth.github.io/evolution-of-resumes/>

Resume Templates

- <https://github.com/posquit0/Awesome-CV>
- <https://github.com/deedy/Deedy-Resume>
- Not necessary to do it in LaTeX, you can just absorb ideas

A more detailed sharing about resume writing will happen next week.



Prepare for interviews

Interview Prep

Programming Language

- We highly recommend (typed) Python for coding interviews
 - Standard library is powerful
- If you are aiming to work at high-frequency trading firms, use C++ instead
- Most people use: Python, C++, Java, JavaScript

Interview Prep

Programming Language

Python:

```
a = [1, 1, 2, 2, 2, 3]
b = Counter(a)
```

Java:

```
int[] a = new int[]{ 1, 1, 2, 2, 2, 3 };
HashMap<Integer, Integer> b = new HashMap<>();
for (int i: a) {
    if (!b.containsKey(i)) {
        b.put(i, 1);
    } else {
        b.put(i, b.get(i) + 1);
    }
}
```

Interview Prep

Guides on how to prepare

- <https://www.techinterviewhandbook.org/coding-interview-prep/>
- [Asana Technical Interview Guide](#)
- [Pitt Computer Science Club: Zero to Offer](#)

**Sessions about interview preparation will happen in
Week 3 - 5.**

Interview Prep

General Philosophy

- Practice, practice, practice!!!
- Do LeetCode questions **consistently** to get yourself into the mental space of interviewing
- Do mock interviews
- Don't avoid difficult questions. If you get stuck, look at the solution to learn quickly and then move on. Don't waste time being stuck.

Interview Prep

It gets easier...

- This entire process is...exhausting. But it's important if you want to go into this field. It is a "necessary evil".
- It also gets easier as you do more

That's a lot of stuff.

**Take it one step at a
time.**

**The best time to
start is now.**





Career Landscape

	Early-stage Startup	Late-stage Startup	Big Company
Company Size	<100	100-1000	>1000
Compensation	Base salary a bit higher than big companies. More equity ownership but not worth money yet	Base salary a bit higher than big companies, stocks have higher chance of being worth money	Depends on company, usually market standard or better. Stocks are worth money if IPO-ed
Types of Work	Mainly product development. Engineers have to wear multiple hats	Product development and some infra	Diverse roles and specialized work (both product and infra). More opportunities for internal transfers. Dedicated people for each role
Career Ladders	Unstructured. No engineering levels. No formal mentorship	Somewhat structured	Very structured. Well-defined levels
Iteration Speed	Extremely fast. Struggling to find product market fit	Moderate. Found product market fit, trying to grow user base	Stable product, have to roll out changes incrementally and run experiments

Working in SG vs US

	SG	US (Silicon Valley/NY)
Starting Pay	Gross Monthly \$6000 (Median), \$6900 (75th percentile)	Annual >USD100,000 (pre-tax) but tax rate is equally eye-popping.
Talent Access	Usually regional, mostly Asians	Global talent, extremely diverse
Types of Companies	Branch offices of large companies, Startups	HQ of large companies, Startups
Types of Engineering Work	Mainly product development	Both product and infra (building new programming languages, frameworks and tools)



Finding Internships

Where to find internships?

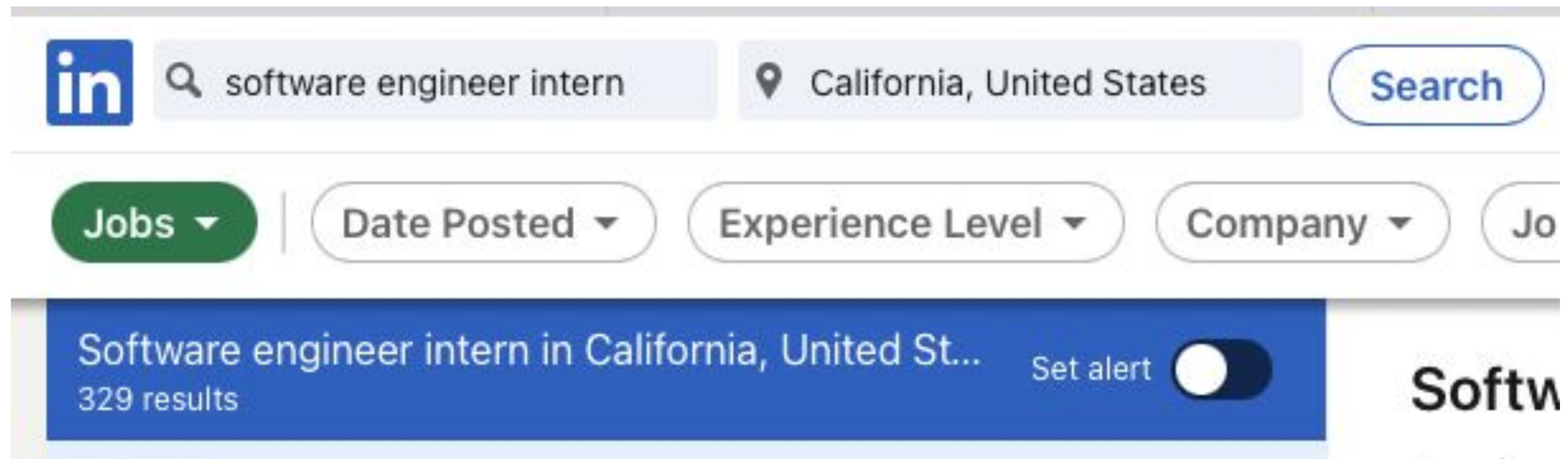
Your life

- Unlock your phone
- Look at every app you have. Every email you receive. Every service you use.
- Google `f"{appname} internship"`
 - e.g: spotify internship

Where to find internships?

Job Aggregators

- LinkedIn Job Alerts: Search for “Software engineer intern”, set a location, save as job alert
- [Untapped](#) formerly known as Canvas formerly known as Jumpstart



robinhood internship



All News Images Videos Maps More Tools

About 1,200,000 results (0.47 seconds)

https://careers.robinhood.com

Robinhood Careers - Transform the Future of Finance

At **Robinhood**, we believe that our financial markets should be accessible to everyone. We're leveling the playing field by making trading more intuitive, ...

https://earlytalent.robinhood.com

Robinhood Careers - Fresh Perspectives, Fresh Ideas

We host **internships** during the Winter (January - April), Summer (May - September), and Fall (September - December), and we hire new grads throughout the year.

Join Our Team

Filter by:

EARLY TALENT

All locations

Search

EARLY TALENT

Android Engineer (Intern)

Menlo Park, CA

External Affairs - Part-Time Fall Intern (2022)

Remote

Apply for this Job

* Required

First Name *

Xiao

Last Name *

Ming

Email *

xiaoming@u.nus.edu

Phone *

99998888

Location (City) *

Singapore

Locate me

Resume/CV * Application form expired. Please refresh the page and try again.

Cover Letter Attach, Dropbox, Google Drive, Paste

School *

National University of Singapore (NUS)

Degree *

Bachelor's Degree

Start Date *

08

2020

End Date *

06

2024

+ Add Another Education

LinkedIn Profile *

https://www.linkedin.com/in/xiao-ming/

Referrals






- Referrals help, but they're not a must
- Don't be shy to ask seniors, at most they say no
- Usually gets you through the resume screen, so *at least* you get an OA or interview

Agencies

- Companies which help their clients do the initial screening
- Candidates only do 1 phone screen for N companies, vs N phone screens
- **More relevant for full-time roles and less for internships**
- E.g. Triplebyte, interviewing.io

Rejections

Important information about your application to [redacted] - Software Engineering Intern - Summer 2022 (USA)  

to me   Sun, Oct 31, 2021, 1:51 AM   

Hi Christopher,

We appreciate your interest in [redacted] and the time that you've invested in applying for the **Software Engineering Intern - Summer 2022 (USA)** opening.

We received a large number of applications, and after carefully reviewing your application, we've decided to move forward with other candidates at this time. Thank you for your interest and the time that you took in applying.

We hope that you'll keep us in mind and apply again in the future should you see a job opening for which you qualify.

Best,
The Campus Team

  [redacted] 1 Oct 2021 at 9:19 am [Details](#)
To: chris@christopher.sg

Thanks from [redacted]

Hi Christopher,

Thank you for your interest in the Software Engineer Intern (Singapore), [redacted] role to join our growing team at [redacted].

Unfortunately, we have decided not to move forward with your candidacy. The volume of interviews we have conducted combined with the quality of candidates whom we have talked to often forces us to make difficult decisions as such.

The [redacted] means that new roles come up every now and then, so please check back on our careers page for future opportunities which aligns with your interests.

We value your time and interest in finding out more about careers with [redacted], and we hope you will continue to consider a career at [redacted].

We wish you all the best in your current search.

Best Regards,

 [redacted] 6 Nov 2021 at 9:47 pm [Details](#)
To: chris@christopher.sg

 **Software Engineering Internship Application Status - Christopher**

Hi Christopher,

We want to thank you very much for your interest in [redacted] and for taking the time to complete our Codility test. Right now, however, we have decided not to move forward with your Software Engineering Internship application based on our current needs.

We would encourage you to stay in touch with us, because as [redacted] grows, it's possible our hiring needs will change. We're always eager to network with smart candidates with an interest in our industry.

Thanks again for your interest and time, and good luck with your job search.

Regards,

 7 Oct 2021 at 1:30 pm [Details](#)

Your candidacy for our role at

Hi Christopher, Zhen Fung,





Thank you so much for taking the time to thoughtfully prepare and meet with members of our team – I know we've very much enjoyed getting to know you.


I have had a chance to speak with the team and, while we were impressed with your work, we have made the difficult decision to not move forward with your candidacy at this time.

Although we didn't find a strong fit right now, we would love to keep in touch – Stripe is growing and changing quickly, and there may be additional opportunities in the future.

We wish you the best of luck in your search and hope our paths cross again soon.

All the best,

 [redacted] Tue, Oct 19, 2021, 2:17 AM   

to me 

Hi Christopher,

Thank you for your interest. [redacted] submitted you for the opportunities outlined below. After careful review of your experience : these opportunities, we have decided to not move forward with your application at this time.

[redacted] Engineer Intern

Please know we are always on the lookout for the best talent and would like to encourage you to keep in touch with your referrer for c opportunities that are of interest by following our careers page. Should a recruiter reach out to you for a future opportunity, we hope y continue to consider [redacted].

Regards,

Thank you for interviewing with [redacted]  

 [redacted] Mon, Sep 20, 2021, 11:29 AM   
to me 
Christopher Zhen Fung,

We would like to thank you for taking the time to interview with [redacted].

Unfortunately, we are unable to offer you a position at this time. We will keep your resume and information on file, and should the firm's needs change, we will contact you.

Good luck and best wishes in your future endeavors.

Applying

Rejections

**Everyone struggles.
A lot.**

**You only need 1
offer.**

Skill + Luck = Offer

A rejection is not reflective of your worth as an engineer.

All it means is that things didn't go right for that interview/company.

**“I don’t feel ready. I will
apply when I am ready to
interview.”**



Update from [redacted]

1 recipient

13/11/20

[Details](#)



This message is from a mailing list.

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Hi Christopher,

I wanted to follow up with you regarding your recent coding challenge for [redacted]. The team found your submission impressive, so I wanted to reach out to provide some transparency around next steps. As you may know, [redacted]'s internship program is strategically small, and we do our best to pace our recruiting efforts based on the needs of the business. Given the current number of outstanding offers and pipeline of candidates, we will be holding on any next steps in your interview process until we have a clearer picture of offer acceptances.

I understand that this may be disappointing news, and that it means you will likely need to prioritize recruiting processes and offer deadlines outside of [redacted]. If you do need to withdraw your candidacy based on timing, please do let me know. Otherwise, I'll be in touch in the coming weeks with additional updates.

You will fail. A lot.

**It's a marathon, not
a race.**

The mental model?

A problem solving mindset.

https://advaypal.com/writes/relentlessly_resourceful_beyond_startups/

An offer!



Alternatives

Your own project/startup

Undergraduate Research

CCSGP Public Service Fellowship

Take some time to relax and breathe

Final thoughts

Parting thoughts

- This process is extremely emotionally exhausting and tiring
- Your friends are going through it with you. Talk to them. Help each other out. 😊
- Remember: You only need one offer
- There's no such thing as "not being prepared enough". Every position you don't apply to is a definite rejection. Preparation involves accumulating learnings, and every failed interview is a learning experience
- Luck favours those who are prepared



Homework

LeetCode Demo

TIPS Portal Demo

<https://soc-tips.com>