



Lecture 27: what comes next?

CSE 373: Data Structures and Algorithms

Announcements

ALL MATERIAL YOU WANT REFLECTED IN YOUR FINAL GPA DUE BY WEDNESDAY JUNE 7th at 11:59PM

- Please fill out the course survey they send to your email (helps Kasey and the TAs)
- Please nominate your TAs for the Bob Bandes Award
- Kasey will be sending a survey about your course experiences and your goals/background as part of a data collection goal to share with other students
- You can always email kasey at champk@cs.washington.edu or sign up for a 1:1 conversation via bit.ly/kasey1on1s



A 10000ft look back at 373

toolbox

What is a data structure?

- Array
- LinkedNodes
- Binary Tree
- Binary Search Tree
- ADT
- Red Black Tree
- Left Leaning Red Black Tree
- Heap
- Graph (kinda)

What is an ADT?

- List
- Stack
- Queue
- Priority Queue
- Map/Dictionary
- Set
- Disjoint Set

Ways to organize information to optimize for specific functionality

- how we are actually storing the pieces of information

Specific functionality definitions

- often expressed as interfaces

Your cs education so far

CSE 121 - vocab

- learning a foreign language, how do you first start to speak to the computer

CSE 122 - sentence structure

- objects are the things computers use, how do you tell them to use them

CSE 123 - writing your first essay

- how to structure your code between objects and clients

CSE 373 - creative writing

- learn how others organize data and solve problems so you can adapt those methods to your own needs

Next - explore more genres!

- all other courses are just different applications of these basic skills

Other UW Courses to take

CSE 154 - Web Programming

- survey of all how to build web applications from front to back end

CSE 163 - Intermediate Data Programming

- pick up Python for data science uses

CSE 375 - Intermediate Programming Concepts and Tools

- tools and techniques for professional engineers like: terminal, bash scripting, C programming, git development and testing practices

Non-Majors CSE Core Classes

- CSE 413 - Programming Languages & Their Implementation
- CSE 414 - Introduction to Database Systems
- CSE 415 - Introduction to Artificial Intelligence
- CSE 416 - Introduction to Machine Learning
- CSE 417 - Algorithms and Computational Complexity
 - officially the “next” class after 373

CSE 492J - How to pass the technical interview

- Kasey’s how to get a tech job 1cr seminar, offered whenever she’s teaching

CSE 492e - Computers, Ethics and Society

- 1cr ethics seminar

CSE 590e - Computer Science Education Seminar

- 1cr seminar exploring techniques and effect of teaching computer science with a focus on improving tech inclusivity

SOC 225 - Data and Society

- Social implications of the digital revolution including ethical issues associated with algorithmic design and privacy

DXARTS 200 - Digital Art and New Media: History Theory and Practice

- Examines the paradigm shifts in the expansion of digital art and media in the early 21st century

Applications of programming

or “What can I do with what I learned?”

- Detect and prevent toxicity online
- Digitize basketball players
- Help DHH people identify sounds
- Figure out how to best distribute relief funds
- Recognize disinformation online
- Make movies
- Improve digital collaboration
- Fix Olympic badminton
- And so much more!

How can I stay involved?

- Join an RSO
 - [Husky Coding Project](#)
 - Kasey is the advisor
 - Form teams to build software projects
 - [Ability](#)
 - spreading accessibility awareness and helping build more accessible software
 - [ACE \(Association for Computing Education\)](#)
 - building student interest in the field of computer science education
 - [Minorities in Tech \(MiT\)](#)
 - Working to foster a more inclusive tech community
 - [Q++](#)
 - LGBTQIA+ community within Allen school
 - [Women in Computing \(WiC\)](#)
 - [Impact++](#)
 - Computing for social good
- Participate in a hackathon
 - [Dubhacks in October](#)
- Apply to be a TA
 - [Apply to be a CSE TA](#)
- Get into research
- Find an internship
 - [Careers in Humane Tech](#)
- Volunteer!
 - Code for a non profit
 - [Taproot Plus](#)
 - [Data Kind](#)
 - [Catch a Fire](#)
 - [Hashtag Charity](#)
 - [Develop For Good](#)
 - [Code for America](#)
 - Be a mentor
 - [Girls who Code](#)
 - [Black Girls Code](#)
 - [Code 2040](#)
 - Teach
 - [TEALS](#)

FAQs

How can I get better at programming?

- Practice!

How can I learn to X?

- Search online, read books, look at examples
- Kasey is an edx.org instructor

What should I work on next?

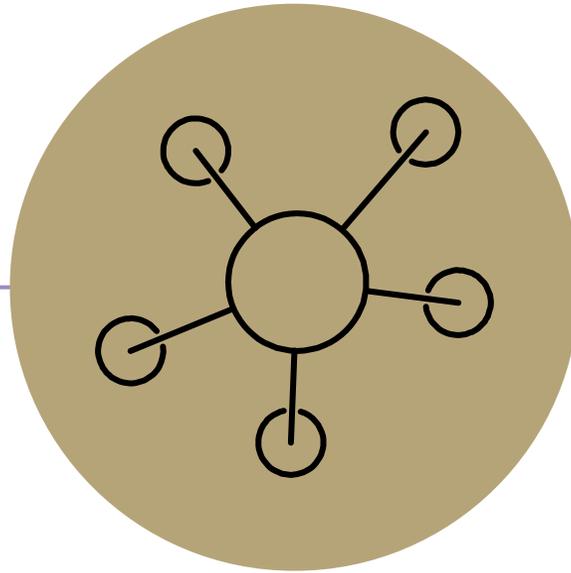
- [Here are some ideas](#)
- [Beware](#): it's hard to tell what's easy and what's hard
- Contribute to open source projects <https://www.firsttimersonly.com/>
- Recreate your favorite app but add a personal spin
- Digitize something you or someone you know well does manually/on paper

Should I learn another language? Which one?

- That depends—what do you want to do?

What's the best programming language?

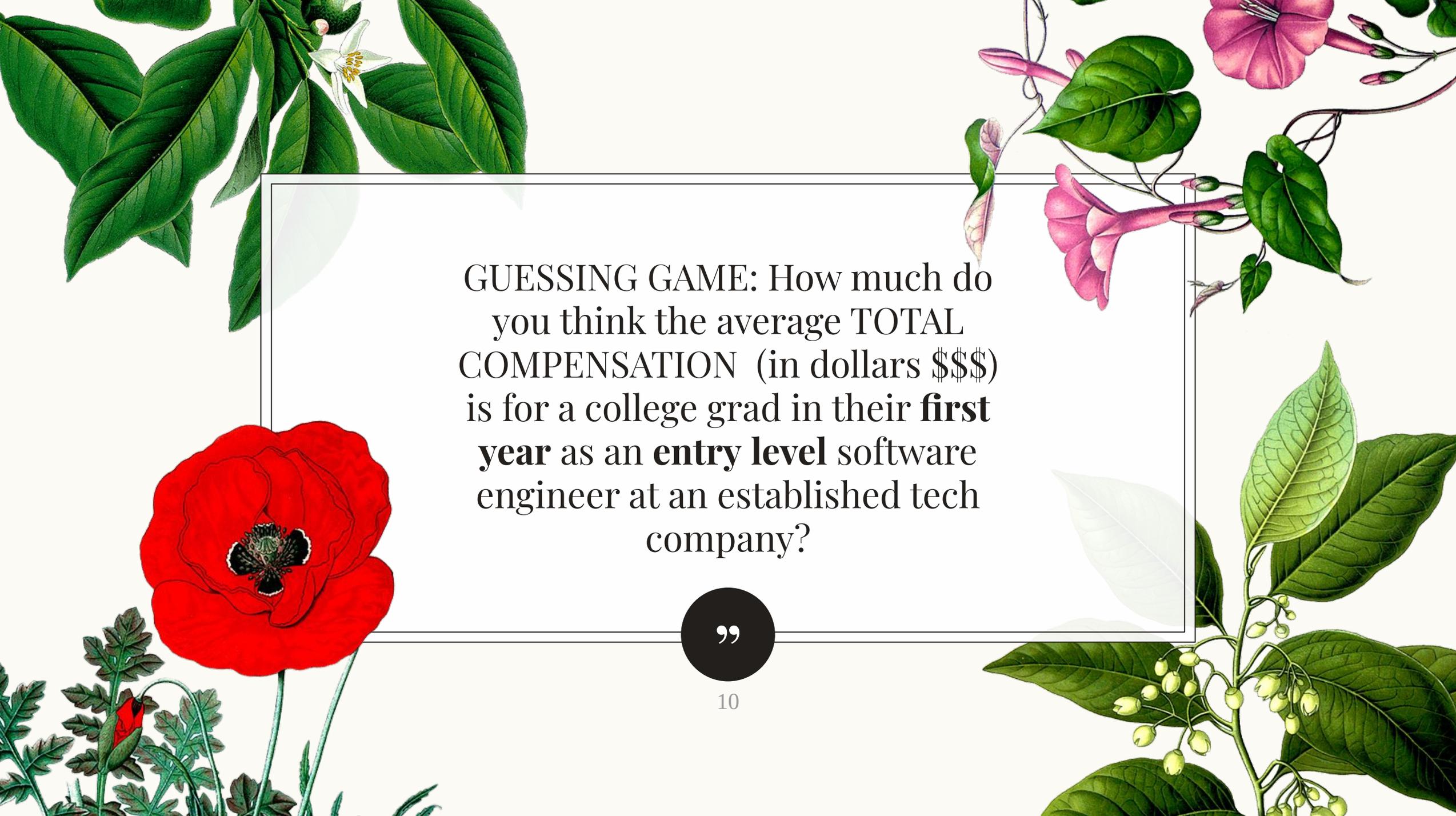
- 😡 (take CSE 341/CSE 413)



Tech Recruiting 101

Taken from CSE 492J Seminar

Kim Nguyen's (tech recruiter and former Allen school career counselor)
Ultimate Guide to Building Your Resume: <http://bit.ly/cseresumeguide>



GUESSING GAME: How much do you think the average TOTAL COMPENSATION (in dollars \$\$\$) is for a college grad in their **first year** as an **entry level** software engineer at an established tech company?

”



\$100k – \$120k

Self-reported starting salary range from 2019 UW CSE class

\$75k – \$120k

Equity packages from large, publicly traded companies
(4 year vesting schedule)

\$15k – \$75k

Signing bonus range from
competitive compensation packages



Besides \$\$\$, what else is there to consider?

How would you prioritize this list?

- Pay & Benefits
- Work/Life Balance
- Work Culture
- Company Values
- Job Content
- Growth Potential
- Your Direct Manager
- Your Teammates
- Your Ownership/Impact
- **Crisis Management**
- Location

Large	Medium/ Established Startup	Small/Startup
ie. Microsoft, Amazon, Google, Facebook...	ie. Snapchat, Lyft, Tableau, Airbnb, Redfin...	ie. You + Your Buddies, UW Startup Hall companies...
More established engineering systems	← Somewhere in between →	Fewer engineering resources
Large company resources (ie. Help w/ Visas)		Fewer company resources (double check for visa support)
Typically start out with smaller scope and smaller impact		More opportunity to have high impact/ownership of product
Day-to-day culture highly dependent on team and product		Community and culture are carefully cultivated with so few people

Okay what **jobs** are available?

Roles

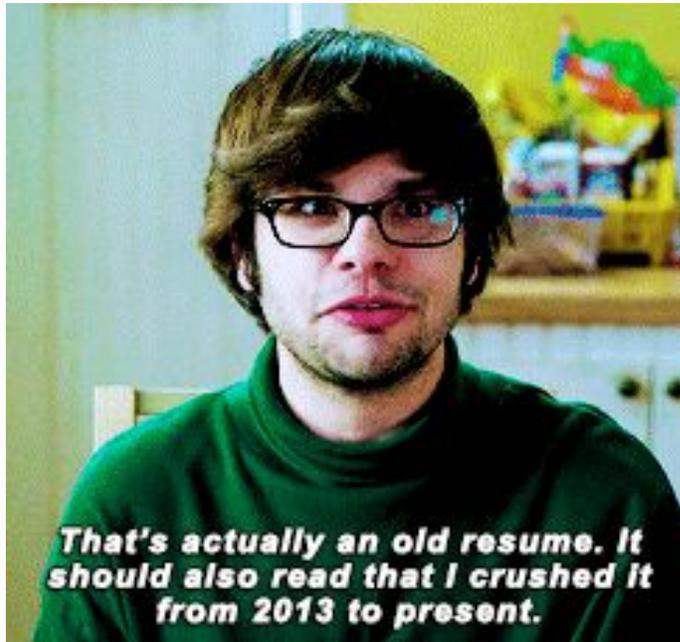
- Software Engineering***
- Program/Product Manager
- Quality/Test Engineering
- Data Scientist
- Hardware Engineer
- Field Engineer
- Technical Account Managers
- Consulting

Technology Areas

- Applications
- Web Development
- Enterprise Software
- Artificial Intelligence
- Machine Learning
- AR/VR
- Gaming
- Operating Systems

Think of **recruiting** in two phases.

Getting the Interview



Crushing the Interview



Fall (August – November) is the **most important** time for recruitment.

- ◉ Internships and jobs are recruited for until filled
- ◉ In Winter (aka January), there are still some jobs available, but not as many.
- ◉ Use Spring to start relationships with recruiters for NEXT Fall.





LEVERAGE NETWORK

INTERVIEW

- Research Companies
- Submit Applications
- Reach Out / Network
- Interview Preparation



- Attend Recruiting Events
- Follow Up
- Interview



August

October



September

November



APPLY

- Identify Recruiting Events
- Use Friend & School Network
- Email Recruiters
- Submit Updated Resumes
- Interview Preparation



EVENTS & EMAILS





LEVERAGE NETWORK

YOLO

- Update your resume
- Application Inventory
- Interview Preparation

December



- Attend Recruiting Events
- Follow Up
- Interview

February



January



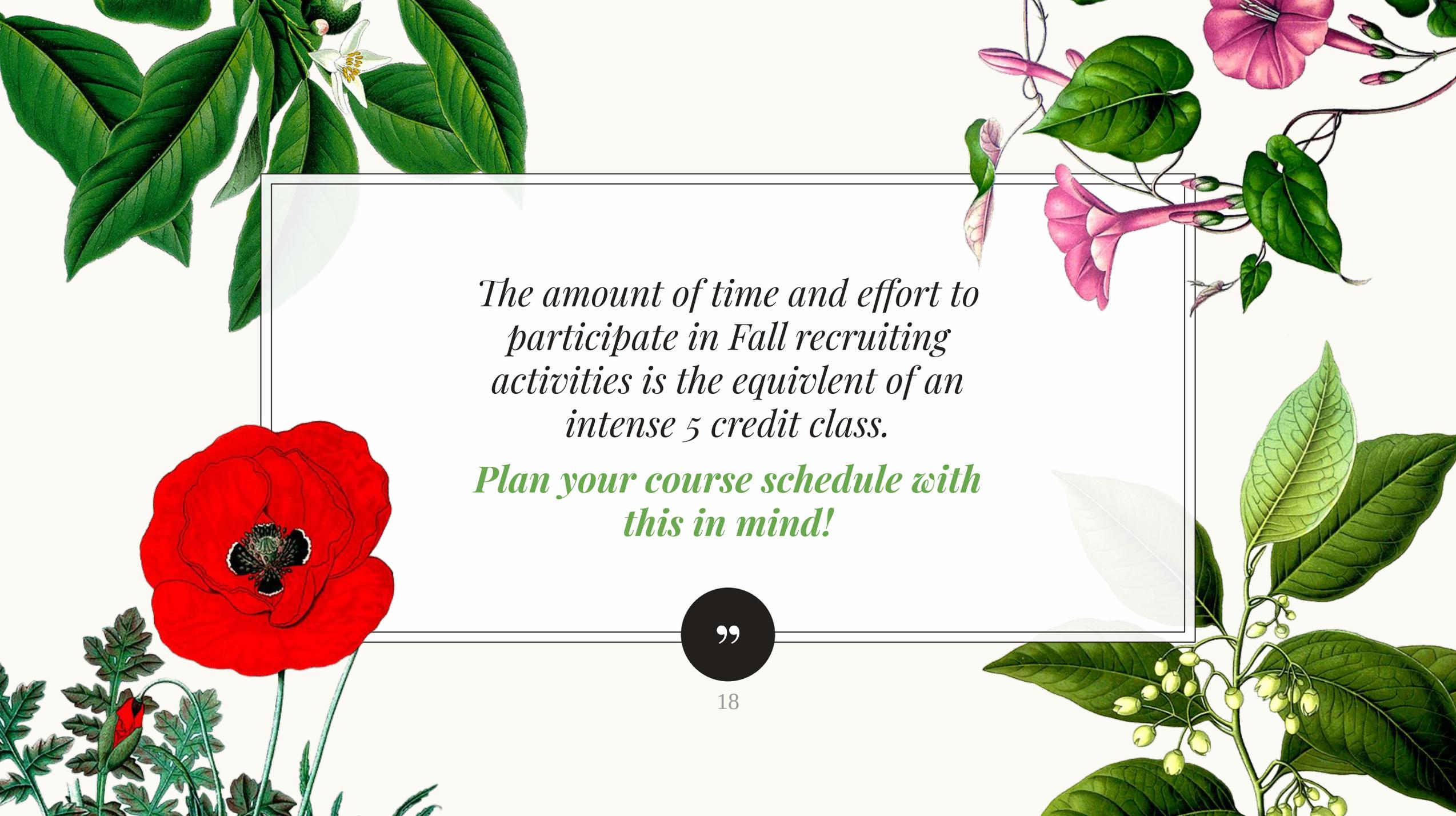
REORGANIZE

- Identify Recruiting Events
- Use Friend & School Network
- Email Recruiters
- Reapply to Dead Ends



INTERVIEW

March



The amount of time and effort to participate in Fall recruiting activities is the equivalent of an intense 5 credit class.

Plan your course schedule with this in mind!

”

A detailed botanical illustration featuring various plant species. The top left shows a branch with large, dark green, serrated leaves and a single white flower with yellow stamens. The top right shows a branch with similar green leaves and several white flowers. The bottom left features a branch with smaller, lighter green leaves and a prominent red flower. The bottom right shows a branch with large green leaves and clusters of small, yellowish-green buds or fruits. A central white rectangular box with a thin black border contains the text.

**What is it going to take
to get an interview?**



Roadmap to the **Interview** invite

- **Build** a Resume
- **Submit** your Applications
- **Attend** Company Events
- **Ask** Friends & Classmates for Referrals
- **Follow-Up** with Recruiters
- **Hustle** until you get those Interviews!

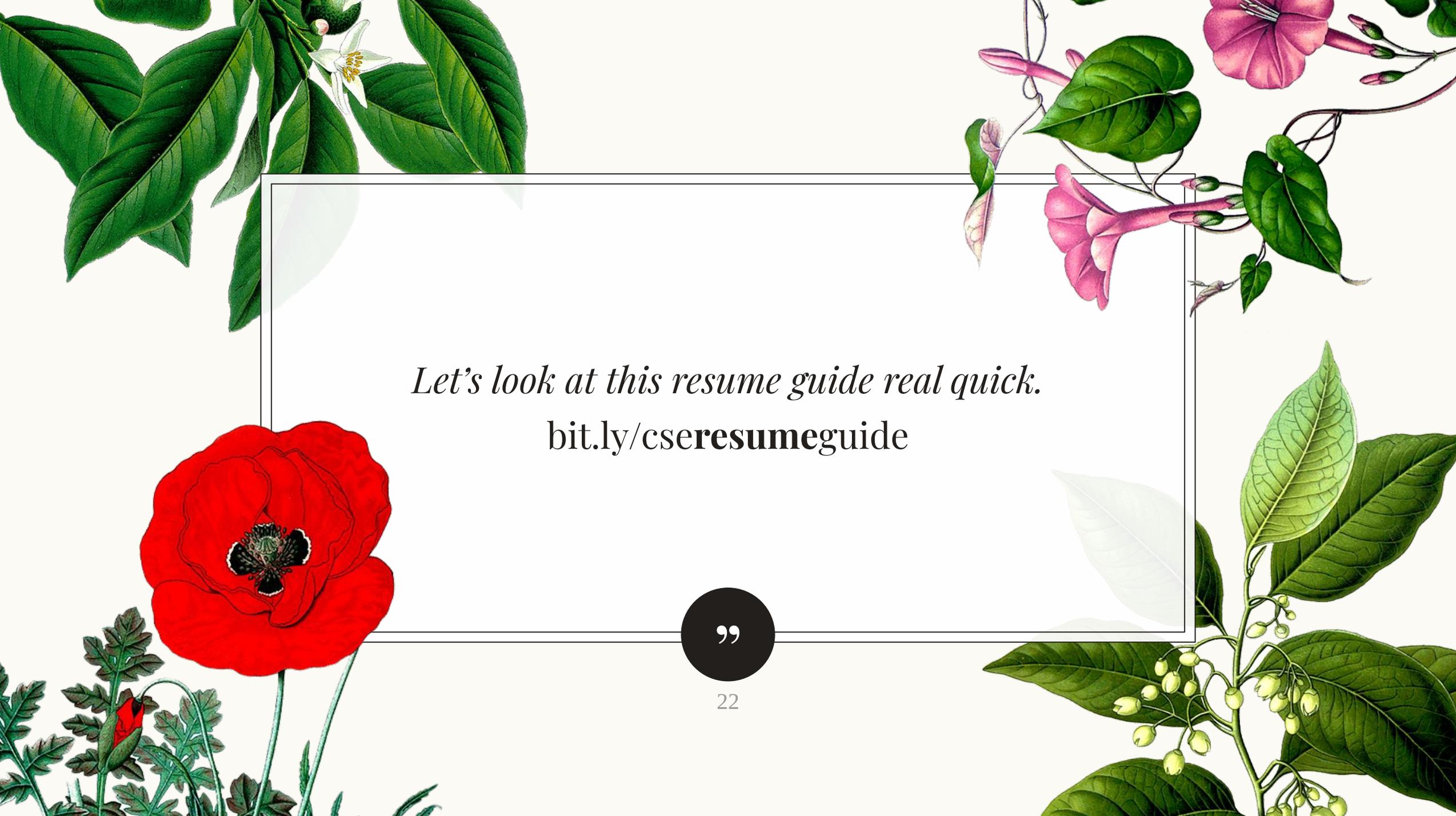


First, you need a **resume!**

- ◉ Your resume should be a reflection of how you are using your time outside of class* and highlight skills and experiences relevant to the job.
- ◉ 1 Page. Clean, straightforward, nicely formatted and no typos.
- ◉ Include multiple contacts (email and phone, leave off physical address)
- ◉ Must list educational institution, major, expected graduation year
- ◉ Check out my resume guide: <http://bit.ly/cseresumeguide>

*How you use your time should be thoughtful and intentional and an indication of what you care about.





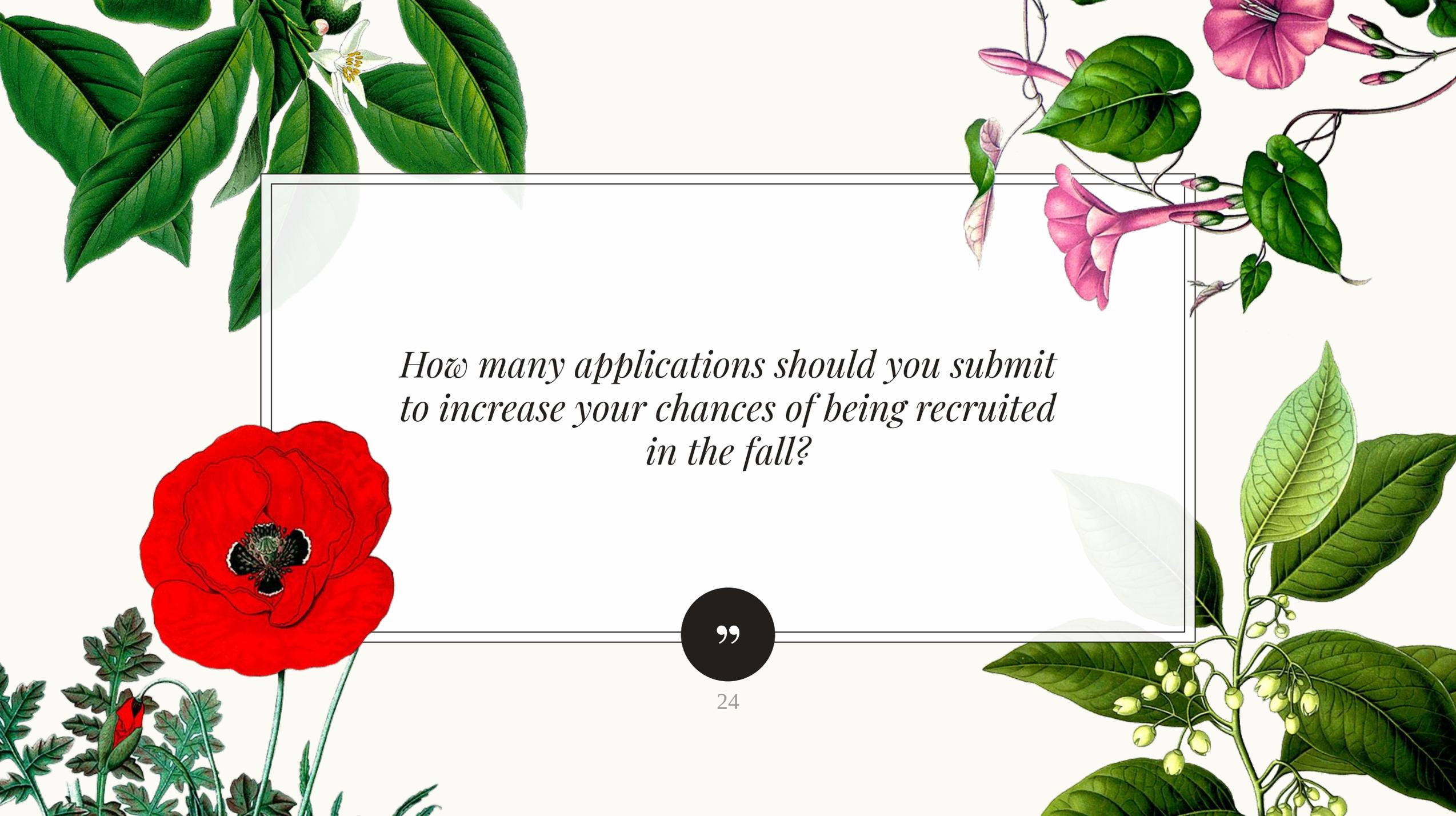
Let's look at this resume guide real quick.
bit.ly/cseresumeguide

”



Then, you need to **apply!**

- ◉ Apply directly to company's early-in-careers / university careers web portal
- ◉ Google search variations of "2024 software engineer internship"
- ◉ Use platforms like Handshake, LinkedIn, WayUp and Piazza
- ◉ Participate in Resume Books (ie. Student Groups, Conferences, Career Centers)
- ◉ Apply as early as possible.
- ◉ Submit an updated resume at the beginning of each month.



*How many applications should you submit
to increase your chances of being recruited
in the fall?*

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How does my class standing affect my chances of **recruiting**?

- Seniors (graduating before June 2023): GO TIME for fulltime jobs.
- Juniors (one summer left before graduation): GO TIME for internships.
- Sophomores (two summers left before graduation): PURSUE but understand you might not be top priority.
- Freshman (three summers left before graduation): PURSUE but understand you will not be top priority.



**For underclassmen,
check out programs like:
Microsoft Explorer
Google STEP
Facebook University**

*It's not about your number of credits earned,
it's about when you're graduating.





Meeting Companies

- ◉ Why is it important? Opportunity to meet a decision maker that can help you shoot your shot!
- ◉ Recruiting events are a mix of Virtual and in-person this year
- ◉ Use the Allen School Affiliates Calendar AND the UW Career Center calendar to see what events are happening this fall





Get those **referrals**, fam

- ◉ Who might you know that is working at these companies?
 - ◉ Friends
 - ◉ Classmates
 - ◉ Project Partners
 - ◉ Teaching Assistants
 - ◉ Student Club Members (ie. ACM, SHPE, NSBE, SWE)
 - ◉ Alumni within your LinkedIn network

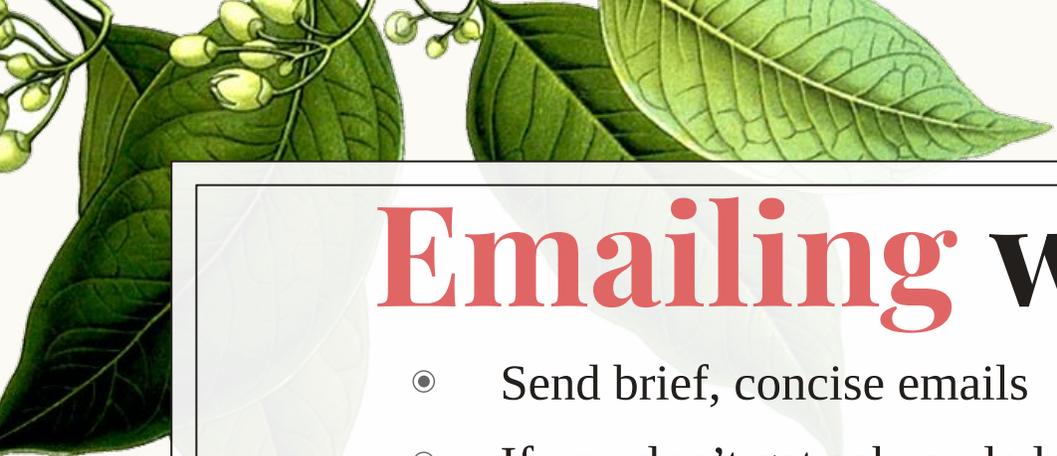
Real talk, every job I have EVER gotten has been because of a personal connection.



How-To for Referrals!

- If you are the person who is giving a referral
 - ◎ Send your recruiter/contact the resumes of your referrals and be clear on what roles those referrals are interested in.
 - ◎ Before introducing your referral to your recruiter over email, ask your recruiter what their preference is. Sometimes, recruiters just want to receive the resume and then follow up on their own timeline.
- If you are the person who is asking for a referral
 - ◎ Make it as easy as possible for your friend/contact. Send your resume and the roles you are interested in.
 - ◎ Return the favor.





Emailing with recruiters!

- ◉ Send brief, concise emails
 - ◉ If you don't get acknowledgement or a response, it's appropriate to follow up after two weeks. If you follow up any shorter than that, it can feel annoying. Follow ups are most effective when you have a pertinent update (ie. I've started the interview process with Google! I'd love to still be considered for <your company>.)
 - ◉ **Do not** directly ask for an interview or to move forward in the next step. Avoid sounding entitled.
 - ◉ Instead, ask for their consideration. **The goal here is to get an eye on your resume to increase your chances of getting to the next stage.**
 - ◉ Plus points if you are able to offer them something. Ie. You're a student leader in SWE/ACM and are happy to assist in arranging a recruiting event if they'd like.
 - ◉ Stop emailing the recruiter after they've acknowledged your email. Unless they ask you, or signal to you, that they'd like to hear more from you.
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Emailing with recruiters!

Hi Niki!

My name is Kim Nguyen and I am a rising senior at the University of Washington studying Computer Science and Electrical Engineering graduating in June 2024. I just finished a Software Engineering internship at F5 Networks working on cloud infrastructure. I've received a fulltime return offer (October 1st deadline) and although I had a great experience, I am eager to explore other companies and roles.

I have heard great things about starting a career at <Company Name> and found an opening for a new grad software engineering role. I've already applied and I've attached my resume here. I know you are busy and hear from a lot of folks, but I wanted to reach out to introduce myself. Please let me know if there is any additional information that would be helpful to have on me.

Thank you for your consideration! Kim





Follow Up Example – Interview Progress

Reply to the email you originally sent so it is included in your follow up response.

Hi Niki!

I wanted to provide you an update on my job search this fall. I've just finished final round interviews with <Company A> and <Company B> and it looks like I will have a decision from both of them around September 15th. I'm still very keen on the opportunity to join <YOUR COMPANY>. If you are still in need of candidates for your interviews this season, I'd love to be considered.

Thank you! Kim



Follow Up Example – Offers

Reply to the email you originally sent (or the most recent one you sent) so it is included in your follow up response.

Hi Niki!

I know this is a busy time for recruiters and I'm sure your company has probably received many applications from great candidates. I wanted to take one last shot at providing you an update on my candidacy this season. I have received an offer from <Company A> with a deadline of October 15th. I also have my offer from my previous internship, which has an extended deadline of October 20th. I'm still very interested in <YOUR COMPANY>. If your team thinks I'm qualified and there's availability for me to interview within the timelines of my deadlines, please know that I am still eager to be considered.

Thank you! Kim



Let's Recap

- ◉ Make a Resume
- ◉ Apply Online & Get on all Recruiting Platforms
- ◉ Meet Companies on Campus and at Virtual Events
- ◉ Ask Friends & Classmates for Referrals
- ◉ Follow-Up with Recruiters
- ◉ Rinse and Repeat Until You Get Those Interviews!

Keep a **balance** between these two mindsets.



It is absolutely okay
to take time for self care.



you can't do things well
if you don't feel well.