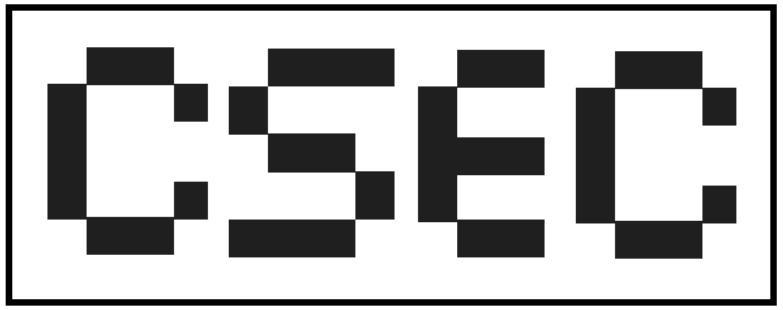
Welcome to



A little housekeeping…

Class Splitting

- **Enriched Class**
  - Learn material at faster pace
  - ACM-ICPC team selection
  - Harder problems to prepare for actual contest
- **Regular Class**
  - Slower pace of teaching and material coverage
  - Easier problems, emphasis on in-class collaboration

Casual Class

- Cover the same content
- Slower pace, easier problems
- Work through problem sets in-class
- Non-competitive
- Still has homework

Enriched Class

- Cover the same content
- Faster pace, more challenging problems
- Problems are assigned, do them individually
- Competitive (ACM-ICPC, etc)
  - Time commitment!
- Still has homework

The ACM-ICPC

- Regional contest October 28-29th, fast approaching!
- Qualification contests
  - Contest on this Saturday and Sunday
  - Different problems, 5 hours long, do what you can
- Choosing a team of 6 eligible* people
- Problem solving skills, algorithms, data structures REQUIRED

CSEC

Seminar 1 – The World of Work

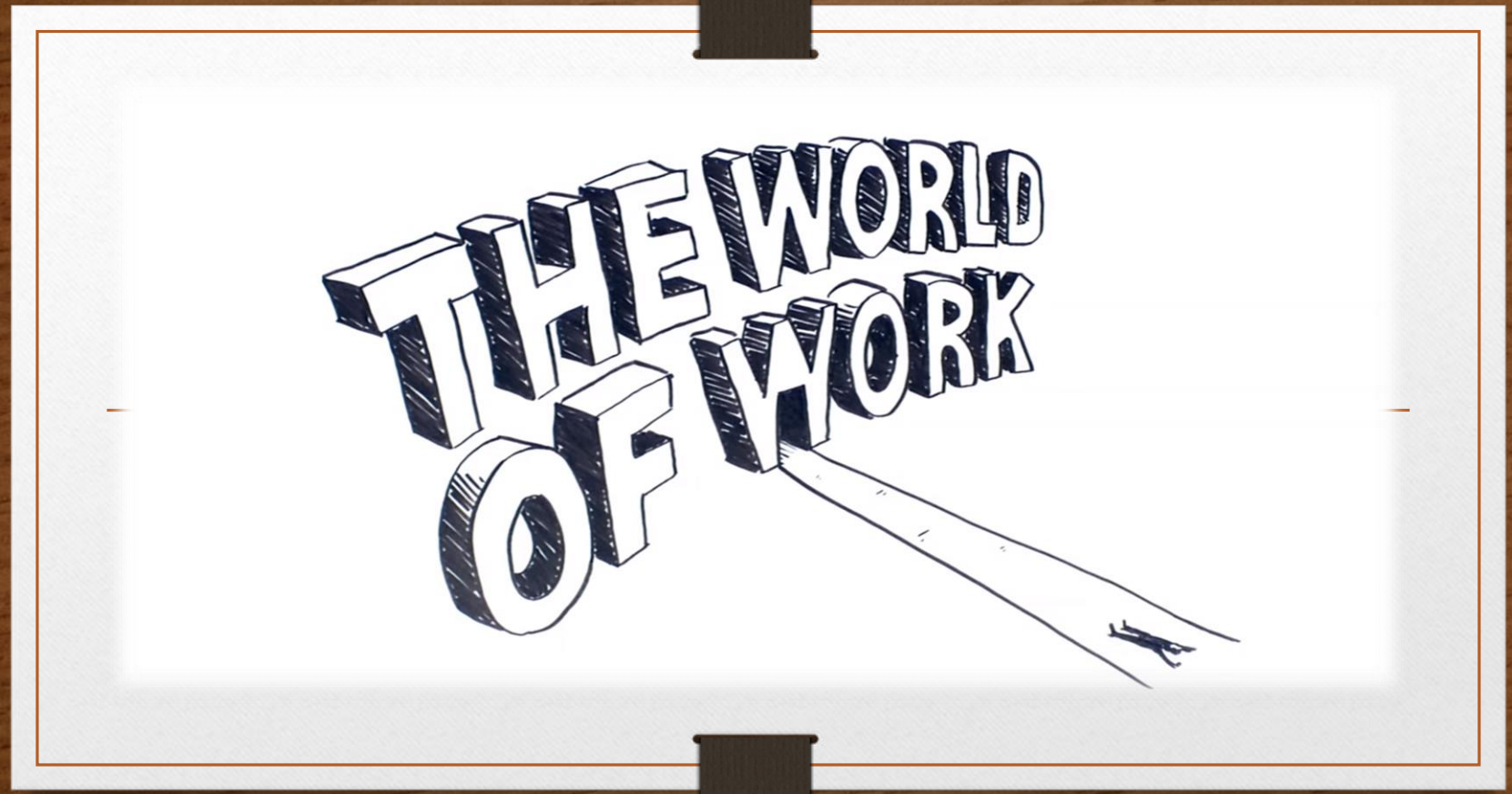


Table of Contents

What are internships

- Paid training experience
- Paid about $15-30/hour CAN
- Given an intern project
- Team of mentors and senior engineers
- Don't need to be in co-op


Snack


KORG

Why do companies do them?

- Recruiting
  - Get their hands on young talent
  - Offer them full time positions
- Do menial jobs
  - Quality Assurance Tests
  - JIRA board bug fixes
- Create a culture

How/Where do I apply?

- List of internships will be posted
- Hidden internship opportunities
- Careers Website
  - University Relations
  - **Target Universities**
  - Co-op specific hiring

PEY · Co-op · Summer

Personal Experience Year	Co-op Placements	Summer Internships
12 month internships	4 – 12 month internships	4 month internships
Most major companies	Select companies	Most major companies
Year round	Summer/Fall/Winter	Summer
+ More depth - Less breadth and diversity	+ More diversity + Less competition	+ More diversity - More competition

The smaller companies

- Don't expect to land a brilliant job straight away
- Smaller companies fill out your resume
  - Still a very rewarding experience
- Applications open later and close later
- Less qualifications needed
- Closer to home – no relocation needed

Step 1 – Foot in the door

- Active Searching
  - Online
  - On-Campus
  - Career Fairs
- Passive Searching
  - Referrals
  - Recruiter Outreach

Step 2 – Resume Screening

- Resume Formatting
- Readability and margins
- Passing ATS (Automated Tracking Software)
- 30 second scan
- Skills, experience, numbers

Step 3.0 – Phone Interviews

- Skype / Phone / Hangouts / etc.
- Technical problems
  - One **simple** (e.g. find absolute difference between two integers)
  - One **difficult** (e.g. create a function that recursively reverses a linked list)
- Ideation and communication
- Clarification and elaboration

Step 3.5 – Phone Interviews

- Skype / Phone / Hangouts / etc.
- Behavioral questions
  - Greatest weakness?
  - Time you resolved a conflict?
- Campus involvement and initiatives
- Cultural fit and values

Step 3.75 – On Site Interviews

- Fly you out to their main campus (Palo Alto, Mountain View, etc.)
- Meet with teams of Engineers
  - Software Design problems
  - Scalability concerns
  - Optimization
- Lunch with recruiter or senior engineer
- Expect up to 3-6 rounds of interviews

Step 4 – The Decision

- Collective agreement between interviewers
- Recruiter will push for you
- Contractual Negotiations
- Acceptance / Rejection / Renege
- Housing stipend(s) and travel reimbursement

How to get internships 101

- **Networking**
  - Why should I care?
  - With who?
- **Resumes**
  - What's wrong with mine?
  - How can I improve?
  - What are they looking for?
- **Cover Letters**
  - Are they a relic of the past?
  - What should I include?
- **Technical Interview**
  - What should I expect?
  - I'm nervous about this
  - Resources and examples?

Networking

- Find the People
- Introduce Yourself
- Make small talk
- Exchange Contact Information
- **KEEP IN TOUCH / FOLLOW UP**

Finding Opportunities

- Hackathons
- Conferences
- Career Fairs
- Meetups
- LinkedIn / Tech Forums

Resumes

- **ENLARGE** your name
- Single Page
  - Remove that Objective
  - Education First
  - Have clear headers/divisions
- Use of White Space / Fill up the Resume
- Applicant Tracking Software / Keyword Search

Resumes

- Quantify Your Work
  - Helped to increase server uptime → Increased server uptime by over 3%
  - Solved many support tickets → Resolved over twenty support tickets daily
- Don't use low-effort or ugly fonts
  - Calibri → Open Sans
  - Arial → Roboto
- Consider not listing your GPA
- Consider creating a "Master" Resume

Take a Break

Up Next: Interviews and Resources

Interviews 0.0 - Screening

- **"Fizz-Buzz" test**
- **Competence Tests**
  - HackerRank
  - TopCoder
- **CSCA08** Material, for the most part

Interviews 0.0 - Screening

The Famous Fizz Buzz

"Write a program that prints the numbers from 1 to 100. But for multiples of three print “Fizz” instead of the number and for the multiples of five print “Buzz”. For numbers which are multiples of both three and five print “FizzBuzz”

Interviews 0.0 - Screening

A Theory Question

What would a Set Look Like if:

- We inserted 1, 1, 1, 2, 5, 3, 2, 4, 4, 1, 2
- We sorted the Set using a standard sort

Interviews 1.0 - Technical

- Asking about previous experiences
  - Personal projects
  - Coding competitions
  - Initiatives
- Asking a few technical questions – on average
- Creating a take-home software design project

Interviews 1.0 - Technical

Example Question – Technical

What is an abstract function in Java?

What is the concept of polymorphism?

How would we find the median in a stream of integers?

How do we remove duplicate values from a list?

Interviews 1.0 - Technical

Example Project – Technical

Implement an synchronized education platform

Create a JavaScript parser of answers matched using Regex

Create a user registration page for a large company

Interviews 2.0 - Behavioral

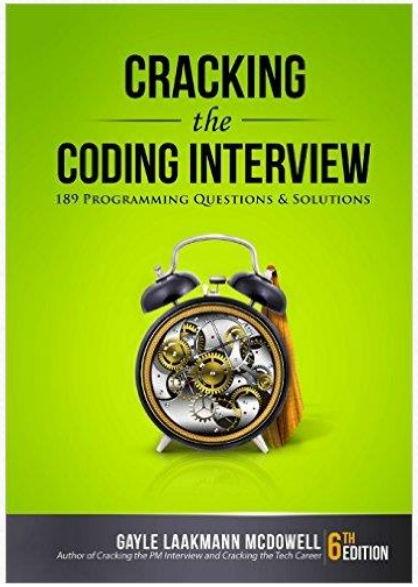
- Usually on-site
- Common behavioral interview questions
  - Tell me about yourself
  - Greatest weakness?
  - Time when you showed leadership?
- Be personable, you want to make a good impression

Tech Interview Checklist

- **Data Structures**
  - Arrays
  - Linked Lists
  - Stacks and Queues
  - Heaps (Priority Queues)
  - Binary Search Trees
  - Hash Maps
- **Graph and Graph Theory**
  - Weight / Direction
  - Algorithms (Dijkstra's, Prim's, etc.)
- **Tree Traversals**
  - BFS, DFS, Pre/In/Postorder
- **Sorting Algorithms**
- **Space / Time Complexities**

You Have Help

- [CTCI] Cracking the Coding Interview
- [Algorithms] Algorithms 4th Edition
- [EPI] Elements of Programming Interviews
- [Questions] LeetCode
- [Questions] HackerRank
- [Questions] CodeForces
- [Inteviews] Pramp



Special Guest

Alex Li

Software Engineering Intern, Google

- Started programming in high school
- Was leader of high school Programming Enrichment Club
  - That's the inspiration for CSEC!
- Studied algorithms and did programming competitions
- Currently 2nd year student at UofT St. George Campus