Administrativia
Administrativia

Final Exam

queues and stacks, BSTs, AVL trees, max/min heaps, sorting, hashing
open book (can bring annotations)
3 hrs
Jobs/Internships

Send Application (CV, letters)
Jobs/Internships

Send Application (CV, letters)

Phone Interview (recruiter)
Jobs/Internships

Send Application (CV, letters)

Phone Interview (recruiter)

Technical Interview
Jobs/Internships

Send Application (CV, letters)

Phone Interview (recruiter)

Technical Interview

On-Site Interviews
Getting a Job

Entirely up to you!

preparation + opportunity == success
Getting a Job

 Entirely up to you!

 preparation + opportunity == success

 What are companies looking for?

 skilled and talented people
 can get things done individually
 can work as part of teams
Getting a Job

Entirely up to you!

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What are companies looking for?

skilled and talented people

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can work as part of teams
Technical Interview

About 30-60 minutes

remotely (google docs, contest style software)
on-site (whiteboard, can use paper)
Technical Interview

About 30-60 minutes
  remotely (google docs, contest style software)
  on-site (whiteboard, can use paper)

Not about school, resume, grades
  it is about what you can do!
Types of questions

Programming Language

Algorithms and data structures

System design (memory, i/o, performance)
Frequent Topics

Arrays, Linked Lists, Stacks, Queues, BSTs, Balanced Trees, Hash Tables, Priority Queues
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Binary Search, String Search, Sorting
Frequent Topics

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Binary Search, String Search, Sorting

Object Orientation, Problem Solving Techniques
  recursion, backtracking, dynamic programming, greedy algorithms
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Regular Expressions
Frequent Topics

Arrays, Linked Lists, Stacks, Queues, BSTs, Balanced Trees, Hash Tables, Priority Queues

Binary Search, String Search, Sorting

Object Orientation, Problem Solving Techniques
  recursion, backtracking, dynamic programming, greedy algorithms

Regular Expressions

Graph Algorithms
  DFS, BFS, Shortest Paths
How to Prepare?
How to Prepare?

Practice, Practice, ...
How to Prepare?

Practice, Practice, ...

Books, online references, video lectures, etc.
How to Prepare?

Practice, Practice, ...

Books, online references, video lectures, etc.

Learning is your goal!
CS9: Problem-Solving for the CS Technical Interview

Autumn 2015 | Tuesday 1:30-2:50pm in Lathrop 282

Recent Announcements

- BRING YOUR RESUME (2 copies) to class in week 2! We will peer review them and talk about getting ready for the Career Fair the next day (Wed 9/30).
- Welcome to Autumn 2015 CS9! Class starts 9/22.

Course Summary

This course will prepare students to interview for software engineering and related internships and full-time positions in industry. Drawing on multiple sources of actual interview questions, students will learn key problem-solving strategies specific to the technical/coding interview. Students will be encouraged to synthesize information they have learned across different courses in the major. Emphasis will be on the oral and combination written-oral modes of communication common in coding interviews, but which are an unfamiliar setting for problem solving for many students.

Details

<table>
<thead>
<tr>
<th>Location</th>
<th>Lathrop 282</th>
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</thead>
<tbody>
<tr>
<td>Credits</td>
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<td>Grades</td>
<td>Satisfactory/No Credit</td>
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<tr>
<td>Prerequisites</td>
<td>CS105P, CS106P</td>
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</table>
Sample Questions
Given an integer x and an unsorted array of integers, describe an algorithm to determine whether two of the numbers add up to x. (say that the interviewer hates hash tables.)
Write a function to determine whether a given binary tree of distinct integers is a valid BST.

Assume that each node contains a pointer to its left and right children, and an integer.
Given an unsorted array of integers where every integer appears exactly twice, except for one integer which appears only once.

Write an algorithm that finds the integer that appears only once.
Given an $n \times n$ grid with a person and obstacles, how would you find a path for the person to a particular destination? The person is permitted to move left, right, up, and down.
Describe an algorithm that takes an unsorted array of rectangles and returns any pair of rectangles that overlaps, if there is such a pair.

Assume all rectangle sides are either parallel or perpendicular to the x– and y–axis.

Assume that each rectangle has the x–y coordinates of the upper–left corner and the bottom–right corner.
The TwitterU program unites talented and passionate graduates with experienced Twitter employees.
The chance to move fast, be bold and build products and services with impact has never been greater. At Facebook, we have a saying that the journey is only 1% finished — join us as you begin yours. We have tons of exciting opportunities available for new grads and interns who want to help us in our mission to make the world more open and connected.
Internships for Undergrads and Grad Students

At Apple, interns are an important part of the team. Whether you sign on for a summer internship or a co-op during the academic year, you can work on critical projects, in the U.S. and around the world. As part of the Apple community, you’ll get a unique perspective on our process and those who lead it. See individual listings to learn about specific internships.

Find internships >

AppleCare College Program

Working from your home as an AppleCare College Advisor, you’ll be part of a team that helps our customers by providing world-class technical support. We’ll train you to troubleshoot, give you an iMac, and let you work a schedule designed around your classes. And if you need more training, we’ll provide that, too.

Watch the video about At Home Advisors 😊

Learn more about the AppleCare College Program >
Finally ...
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Thank you for a great semester
Finally …

Thank you for a great semester.

went through a wide range of topics including a new language and basic data structures.
Finally ...

Thank you for a great semester

went through a wide range of topics including a new language and basic data structures

yet you are still alive!