Navigating the Internship Application Process

Stephen Wu, Alice Li

http://go.osu.edu/stemeeintern

About

Stephen Wu, STEM EE Scholars Secretary

★ 2nd year Computer Science Engineering major, General Design minor

Alice Li, STEM EE Trip and Research Coordinator

★ 2nd year Actuarial Science and Computer and Information Science major, Economics minor

Between the two of us, we've attended 5 career fairs, spoke to 70+ employers, applied to 70+ companies, interviewed at 10+, and developed 7+ recent side projects.

- And...we've consulted a lot of people about the internship application process
  - As should you!
  - Resources include: Engineering Career Services, Jorge Eduardo, upperclassmen, STEP faculty, employers, industry, professionals, co-workers, other faculty, etc.

1. Resume Building

Key elements:

Design hierarchy and **consistency**

- E.g. “Calibri, 12px bolded headers, 10px body, left-adjusted. 1-line spacing between sections; 1.0 line spacing throughout body”

Precise, **concise**, and **impact-focused** statements

- “I spent 3 months programming an Arduino-based advanced energy vehicle in my Fundamentals of Engineering class to navigate a certain path in air, stop at certain points, and documented the results.”

  “**Built, programmed, and documented** Arduino-based vehicle to traverse obstacles and apply precise braking; took 3rd in college competition”

Employer-**targeting**, **relevant** content

- Consider altering your resume for the specific employer and job description in mind
- If you have skills or side projects or involvements that are relevant, highlight them!
- Objective / summary statements are optional, good for writing targeted statements

1. Resume Building

Other things to keep in mind:

Automation software (ATS) probably isn't great at reading your resume

- Unless you use: standard fonts, less fancy styling, and a standardized format

You can include **coursework, volunteering, and activities**, just not too many

- S: STEM Tutoring, STEM EE Secretary, Running Club, and some other stuff are in my resume but they don't take up that much space; coursework is in there depending if company asked for it

Simple is good. Stand out by content, not by formatting

- Don't make fancy layouts unless you really know what you are doing. Exception is if you're applying to certain positions like: web design, graphic design, art, marketing
    - Color printing also costs a lot more money :(

Avoid fluff..

- Avoid soft skills that aren't quantifiable, Microsoft Word, Google Docs, "Attention to detail," etc.
    - You can definitely talk about some soft skills during your interview or cover letter though, when you can actually elaborate

1. Resume Building

Sections: *Objective/Summary*, Education, Projects, Employment/Experience, *Skills*, *Awards/Honors*, *Involvements/Activities/Volunteering*

- Keep it to **1 page**.
- High school stuff is optional, worth including if 1st/2nd year and you did really well
- Skills are technical skills, like programming, software (SolidWorks), not soft skills or Word
- Revise order based on which section is stronger and more relevant, combine sections if needed

Feel free to shoot us an email at wu.2719@osu.edu or li.5781@osu.edu
Other resources:

- Career Services (Schedule an appointment!)
  - **Read: Engineering Career Services Manual**
- Jorge Eduardo (mendoza.773@osu.edu)
- See: CareerCup.com/resume

Get a LinkedIn account!

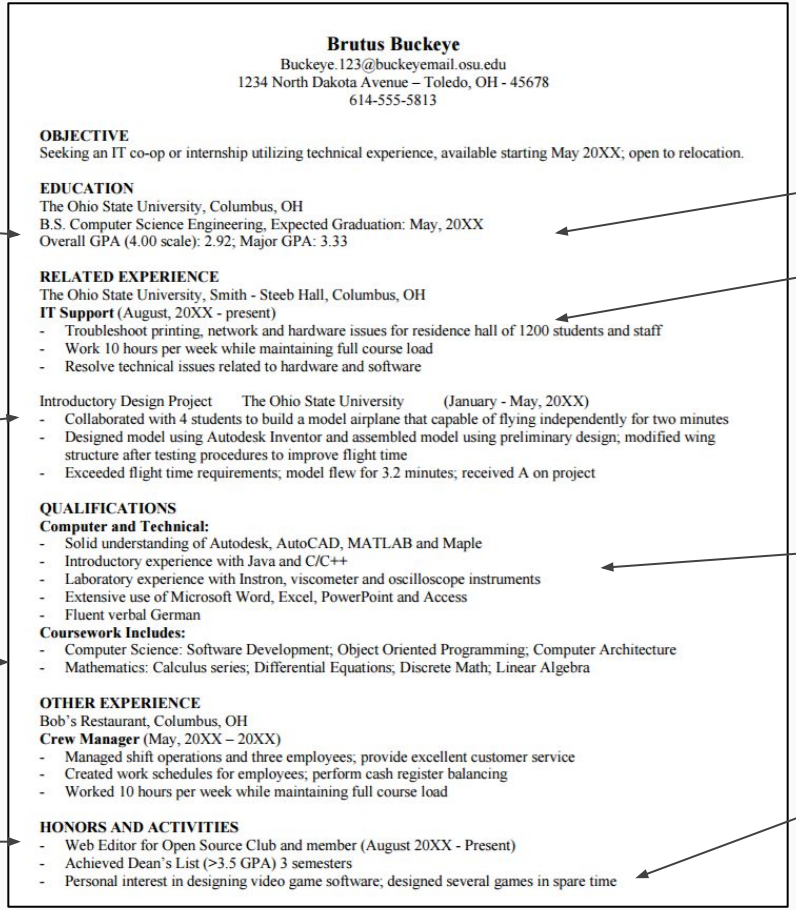
1. Resume example

Use overall or major GPA, either or both.
You will be expected to send transcripts for most places though.

School projects are okay to list. Ideally, replace these with out-of-school projects

Include coursework if you have room or employer asks

Relevant club experience



Brutus Buckeye
Buckeye.123@buckeyemail.osu.edu
1234 North Dakota Avenue – Toledo, OH - 45678
614-555-5813

OBJECTIVE
Seeking an IT co-op or internship utilizing technical experience, available starting May 20XX; open to relocation.

EDUCATION
The Ohio State University, Columbus, OH
B.S. Computer Science Engineering, Expected Graduation: May, 20XX
Overall GPA (4.00 scale): 2.92; Major GPA: 3.33

RELATED EXPERIENCE
The Ohio State University, Smith - Steeb Hall, Columbus, OH
IT Support (August, 20XX - present)
- Troubleshoot printing, network and hardware issues for residence hall of 1200 students and staff
- Work 10 hours per week while maintaining full course load
- Resolve technical issues related to hardware and software

Introductory Design Project The Ohio State University (January - May, 20XX)
- Collaborated with 4 students to build a model airplane that capable of flying independently for two minutes
- Designed model using Autodesk Inventor and assembled model using preliminary design; modified wing structure after testing procedures to improve flight time
- Exceeded flight time requirements; model flew for 3.2 minutes; received A on project

QUALIFICATIONS
Computer and Technical:
- Solid understanding of Autodesk, AutoCAD, MATLAB and Maple
- Introductory experience with Java and C/C++
- Laboratory experience with Instron, viscometer and oscilloscope instruments
- Extensive use of Microsoft Word, Excel, PowerPoint and Access
- Fluent verbal German

Coursework Includes:
- Computer Science: Software Development; Object Oriented Programming; Computer Architecture
- Mathematics: Calculus series; Differential Equations; Discrete Math; Linear Algebra

OTHER EXPERIENCE
Bob's Restaurant, Columbus, OH
Crew Manager (May, 20XX – 20XX)
- Managed shift operations and three employees; provide excellent customer service
- Created work schedules for employees; perform cash register balancing
- Worked 10 hours per week while maintaining full course load

HONORS AND ACTIVITIES
- Web Editor for Open Source Club and member (August 20XX - Present)
- Achieved Dean's List (>3.5 GPA) 3 semesters
- Personal interest in designing video game software; designed several games in spare time

Don't forget graduation date!

Quantify accomplishments, # of people, hours saved, volunteering hours, etc.

Languages, software, programming languages, real languages, laboratory experience, etc.

Personal interests are okay to list and you can talk about them during interviews as well

1.1 Side projects

Many engineering students have little on their resume other than their school projects and clubs.
Get ahead by getting involved.

- Stand out by having relevant projects and involvements *outside of class*.
  - **Engineering**: Robotics, hardware/software projects, hackathons
  - **CIS, CSE**: Anything coding-related on GitHub, open-source contributions, apps, hackathons
  - **ISE / Business**: Start-ups, Design competitions, Apps
  - **Sciences**: Undergraduate research (REUs), competitions
  - **Any**: Relevant employment, volunteering, research, conferences, publications, and clubs
- National Science Foundation (NSF), and National Institute of Health (NIH) are great resources for fellowships and research undergraduate experiences (REU)
- Have at least 1 major project/involvement (several months) and 2+ minor projects/involvements to talk about at interviews.
- High School stuff is okay to list, but definitely get recent projects as well.

1.2 Example experiences

Stephen (Computer Science):

- **DCD Generator**: Email Digest Generator
  - Uses TeamUp calendar API to fetch events and generate weekly email digest for STEM Scholars
  - Added functionality to efficiently sort, add, and delete events through UI (jQuery, jQueryUI)
  - Implemented, saves several hours each week and improves communication with cohort

Alice (Actuarial Science & CIS):

- **Dominion Dealer Specialties**: Accounting Intern
  - Supervised, organized and processed invoices, reports and other advertising data
  - Worked to make complex information more understandable
  - Maintained and analyzed company statistics through Excel

Kiersten Vala (Veterinarian):

- **Hidden Springs Veterinary Clinic**: Volunteering
  - Collected lab samples, ran microscope analyses, prepared blood samples, assisted in anesthesia
  - Observed in surgical procedures, exams, evaluations, and routine care of small animals
  - Job shadowed and assisted in housekeeping and paperwork duties related to the veterinary medicine field

1.3 Cover Letters

The majority of internships ask you to write a **cover letter**, which is like a sales pitch in a 1 page document or email

- Either pasted into text box or attached as .pdf/.doc or emailed to them

Cover letters highlight:

- **Intent** - Why do you want to work here? What do you hope to gain out of this internship?
- **Relevant experiences** - What makes you a good fit — education, projects, volunteering, employment, etc.?
- **Personality** - Are you professional, goal-oriented, and confident?

Look directly at the **job description** while writing

- Address any relevant skills, etc. Note that it might be HR or robots who read these and not actual workers, so addressing **keywords** both here and your resume is pretty important.

Follow **formats available on Career websites**, but feel free to personalize a little bit

1.3 Cover letters

Name, contact info

Date, company

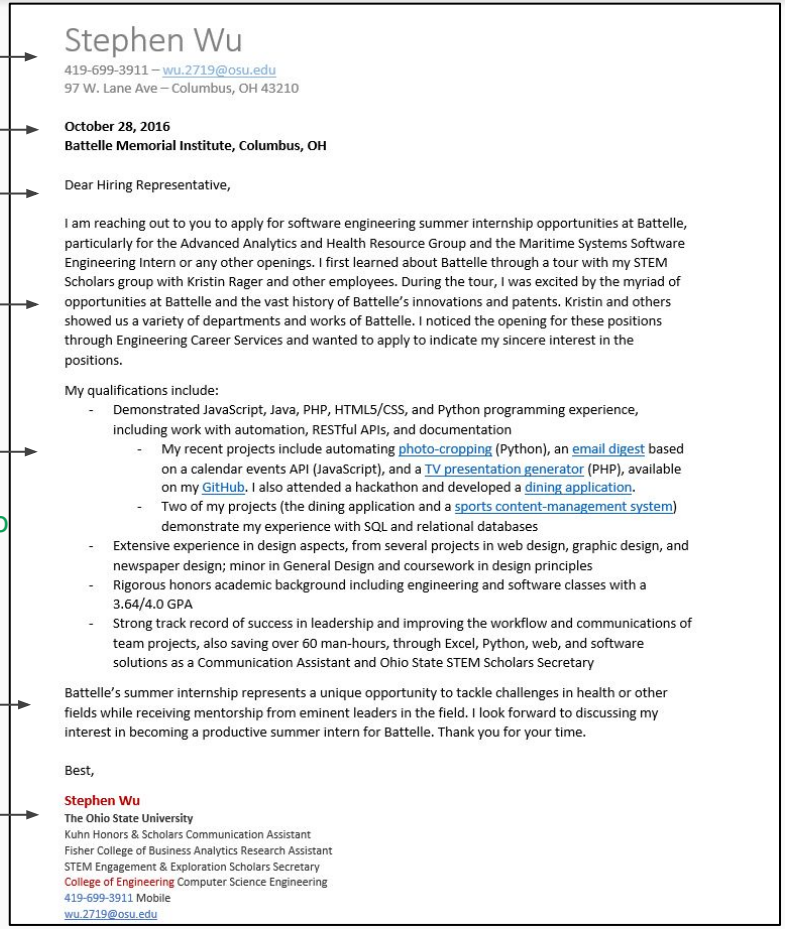
Greetings

Addressing role, references/contacts, how and why you applied

Qualifications
Links to projects, Employment, education info
Address job description

Closing

Signature



Stephen Wu
419-699-3911 – wu.2719@osu.edu
97 W. Lane Ave – Columbus, OH 43210

October 28, 2016
Battelle Memorial Institute, Columbus, OH

Dear Hiring Representative,

I am reaching out to you to apply for software engineering summer internship opportunities at Battelle, particularly for the Advanced Analytics and Health Resource Group and the Maritime Systems Software Engineering Intern or any other openings. I first learned about Battelle through a tour with my STEM Scholars group with Kristin Rager and other employees. During the tour, I was excited by the myriad of opportunities at Battelle and the vast history of Battelle's innovations and patents. Kristin and others showed us a variety of departments and works of Battelle. I noticed the opening for these positions through Engineering Career Services and wanted to apply to indicate my sincere interest in the positions.

My qualifications include:

- Demonstrated JavaScript, Java, PHP, HTML5/CSS, and Python programming experience, including work with automation, RESTful APIs, and documentation
  - My recent projects include automating photo-cropping (Python), an email digest based on a calendar events API (JavaScript), and a TV presentation generator (PHP), available on my GitHub. I also attended a hackathon and developed a dining application.
  - Two of my projects (the dining application and a sports content-management system) demonstrate my experience with SQL and relational databases
- Extensive experience in design aspects, from several projects in web design, graphic design, and newspaper design; minor in General Design and coursework in design principles
- Rigorous honors academic background including engineering and software classes with a 3.64/4.0 GPA
- Strong track record of success in leadership and improving the workflow and communications of team projects, also saving over 60 man-hours, through Excel, Python, web, and software solutions as a Communication Assistant and Ohio State STEM Scholars Secretary

Battelle's summer internship represents a unique opportunity to tackle challenges in health or other fields while receiving mentorship from eminent leaders in the field. I look forward to discussing my interest in becoming a productive summer intern for Battelle. Thank you for your time.

Best,

Stephen Wu
The Ohio State University
Kuhn Honors & Scholars Communication Assistant
Fisher College of Business Analytics Research Assistant
STEM Engagement & Exploration Scholars Secretary
College of Engineering Computer Science Engineering
419-699-3911 Mobile
wu.2719@osu.edu

2. Career Fairs

Engineering:

- ~~Engineering Expo (Sept 20-21)~~
- SWE Career Fair (Wed Feb 1)

Arts and Sciences:

- ~~Career and Internship Fair (Sept 13-14)~~
- Internship Fair (Tue Jan 24)
- Spring Career Fair (Tue Feb 21)

Fisher:

- ~~Fisher Fall Career Fair (Sept 7)~~
- Spring Internship and Job Fair (Tue Jan 31)

And many more! Download the **OSU Career Fair Plus** app (iOS / Android).

2. Career Fairs

Print enough resumes!

- Depending on how long the lines and conversations are, you should be talking to 1-5 companies per hour.
    - S: Last engineering expo, went for ~7 hours over 2 days and spoke to 21 companies

This is a sales pitch.

- You may be offered interviews on the spot if you do well and your resume looks good.
- Most companies want you to apply online or through Career Services, but they will take note of the fact that you talked to them at the Career Fair.
- Some companies will call or email you later to offer interviews.

Research, research, research!

- Have 3+ questions to ask them. If those questions are very specific to their company or job description, then you might get bonus points. You can always throw out the general questions, like “What do you like most about your job?”, “What is the work culture like?”
- Show interest in them and they’ll show interest in you. Consider applying before talking to them!

3. FutureLink, CareerEngine

Career services and their **career engines** are super important

- Interview prep, resume feedback, job boards, document libraries

Engineering/architecture freshmen cannot get access to ECS

- Unless you attend the **First Year Gear-Up** event held in December

Arts & Sciences majors use ASC FutureLink

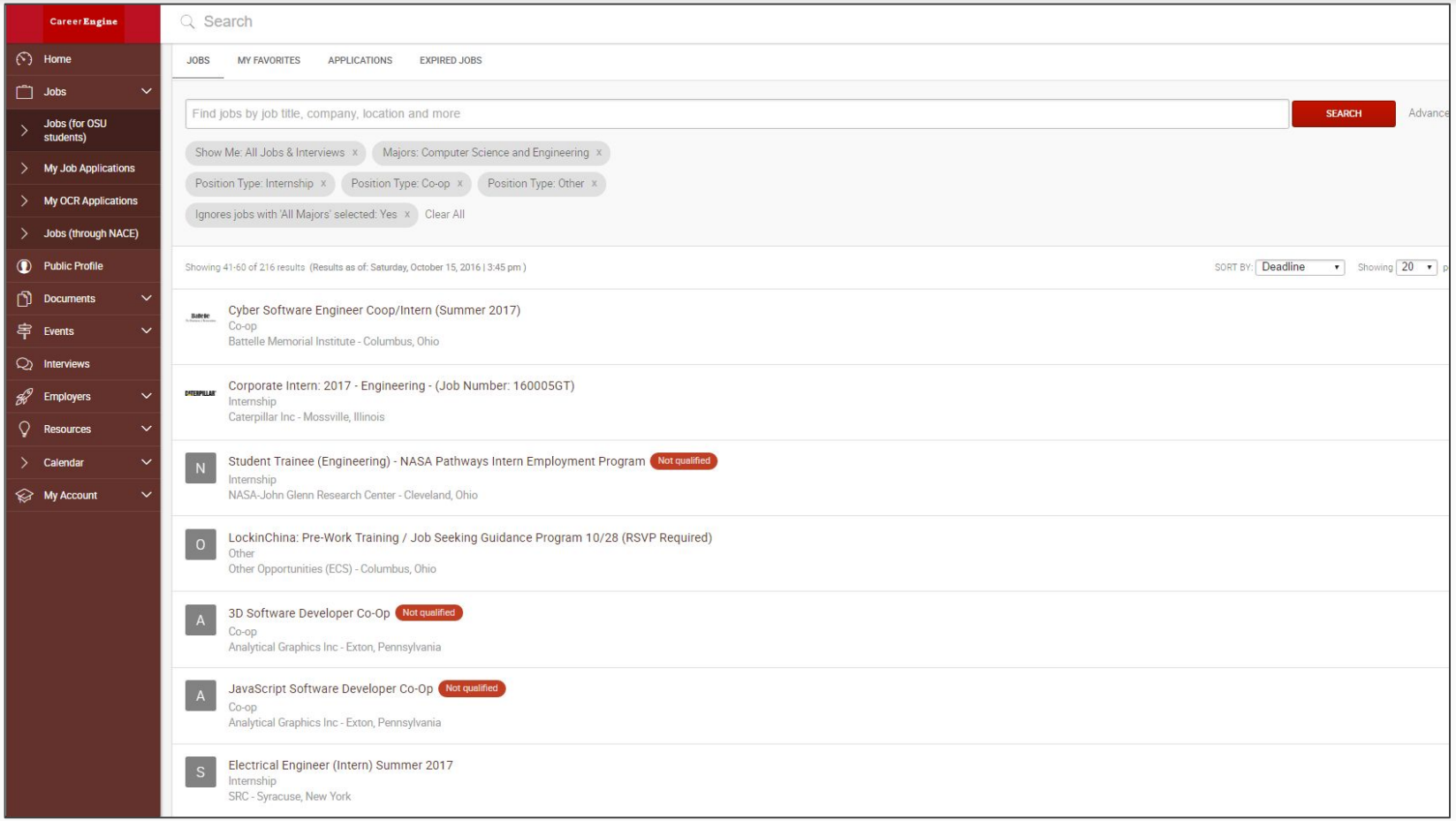
- Available to all years

See: Buckeye Careers Network

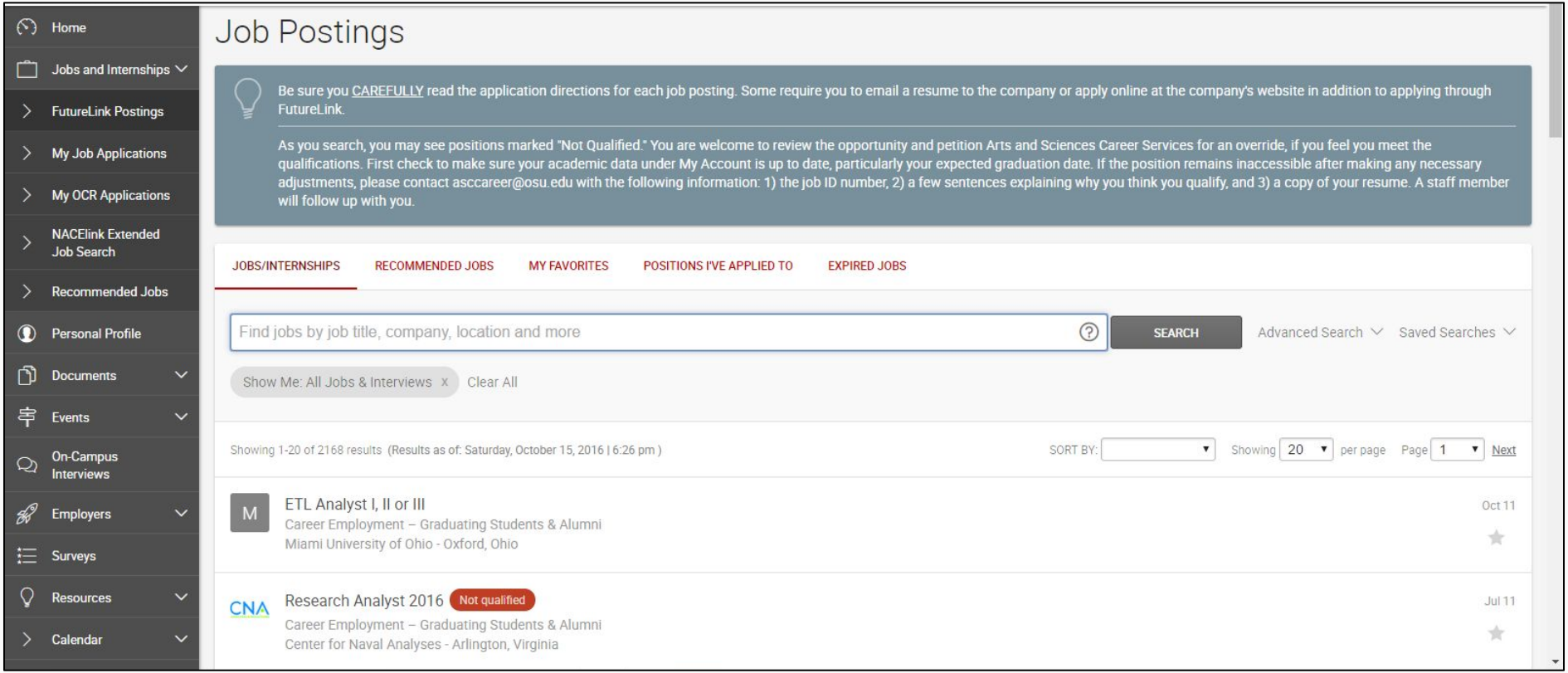
FUTURE LINK

BRANCH OUT ✱ DISCOVER ✱ CONNECT

3.1 Engineering Career Services: CareerEngine



3.2 College of Arts and Sciences Career Services: FutureLink



3.3 Application Process

In most cases, you'll **apply online** elsewhere for the jobs in question.

- Online forms differ a lot, they might require:
  - Cover Letters or CVs
  - Technical questions
  - Essays
- In many cases, you can link your LinkedIn account to automatically fill out most of the form
- Use Glassdoor for reviews, salary info, interview questions and process info!

Every company differs.

- It might take weeks or months to get a response, and they also might not say you were denied
  - It helps to follow up after applying or interviews, directly contacting recruiters for your application status.
- Apply → Email/call requesting interview → Interview (remote/on-site/at-school) → Job Offer
- Apply → Phone screening → Many interviews → Job Offer → Project Placement
- Speak at career fair → Email: "We'll assess our openings and keep in touch" → ...
- Speak at career fair → Interview offered → On-campus interview → On-Site interview → ...

4. The Interview Process

Interview processes vary

- Usually you start up talking to an HR rep for a little, and then talk to lead engineers or more recruiting-type people.
- Sometimes there are several stages: phone screening, online test, etc.
- End of the interview: always ask questions, both general and specific to the company
    - Send an email to thank them after!

Arrive on-time and dressed properly

- Take note of the dress code, usually it's business formal. Dressing up never hurts.
- Plan to arrive 15 minutes early with some updated resumes

Prepare a lot for:

- Technical Questions
- Behavioral Questions
- Talking about anything and everything on your resume without looking at it
- Asking them questions, while knowing about their company and what they do

4.1 Behavioral Questions

Write notes for common questions. You don't necessarily have to memorize a script; just have a good idea of what you would talk about.

Some examples of **behavioral questions:**

- Tell me about yourself / Describe yourself.
- What interests you about our company and work?
- What made you want to go into this field or major? What are your long-term goals in the field?
- Tell me about a time you dealt with a [conflict/bug/group conflict].
- What are your weaknesses? What are your strengths that make you a strong candidate?
- What makes a good team? What makes a bad team? What traits should a leader have?

Quora: What are some common interview questions?

4.2 Technical Questions

Technical questions vary by major and company

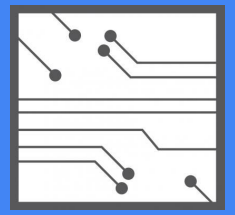
- Sometimes you'll get no technical questions at all besides very generic project questions and they just want to know if you have a good personality.
- Certain majors have highly technical interviews compared to others.
  - CS interviews focus on side projects and tech qs, others have significantly less technical interviews
- You are not expected to answer everything perfectly. Ask questions & talk through your answers.

General questions:

- What technical tools and frameworks have you used?
  - Questions about those tools (whether SolidWorks or Excel or AutoCAD, etc.) may follow
- What relevant coursework have you had so far?
- Tell me about your projects that you have worked on. What was its [impact/conflicts/processes/frameworks]?

Coursework alone is not enough to answer technical questions well.

4.2 Technical Questions - Software



Software Internships: Get *Cracking the Coding Interview* (McDowell)

Example short CS questions:

"Java: What is the difference between inheritance or containment?"
"Java: How do you get around multiple extends statements?"
"SQL: How would you implement a database structure for trading cards?"
"What are some of the differences between Java, C++, and C?"
"How would you decide what programming language or framework to use?"
"Here's a block of code in [language] What's wrong with it?"

Example longer CS questions:

"Implement a doubly linked list in Java and write a function to remove duplicates."
"Design a game of chess using object-oriented principles."
"Write a method to recursively compute all permutations of a string."

4.3 Questions to Ask Them

General

- What do you like most about the work? What does a typical day look like?
- What does a team look like? How would you describe the work culture?
- What will I be working on?
- How many interns will you be taking on? What skills or traits do you look for in an intern?
- Is there any advice you would give to people in my position?

Specific

- Why does your company use [framework / software / language / skill]?
- Can you tell me more about [product / aspect of company]?
- Examples (Software Development Roles):
    - How does your company implement agile? What does a sprint look like?
    - What motivated your company go open source? What made the company choose to use C#?
    - Would I be working on more front-end or back-end web development?

Follow up to their answers as well for more questions.

Try to ask at least 3 general/specific depending on the allocated time.

5. Healthy Expectations

Attend career fairs now, but expect to get "Sorry, we're only looking for juniors/seniors/grads"

- That said, avoid the long lines. Also ask around to see if companies are only accepting Jr/Srs.
- Even if you have a lot of technical skills, you still might be snubbed, but you definitely have some better chances than those without them. Highlight this experience well in your resume and pitch.

Have healthy expectations for responses

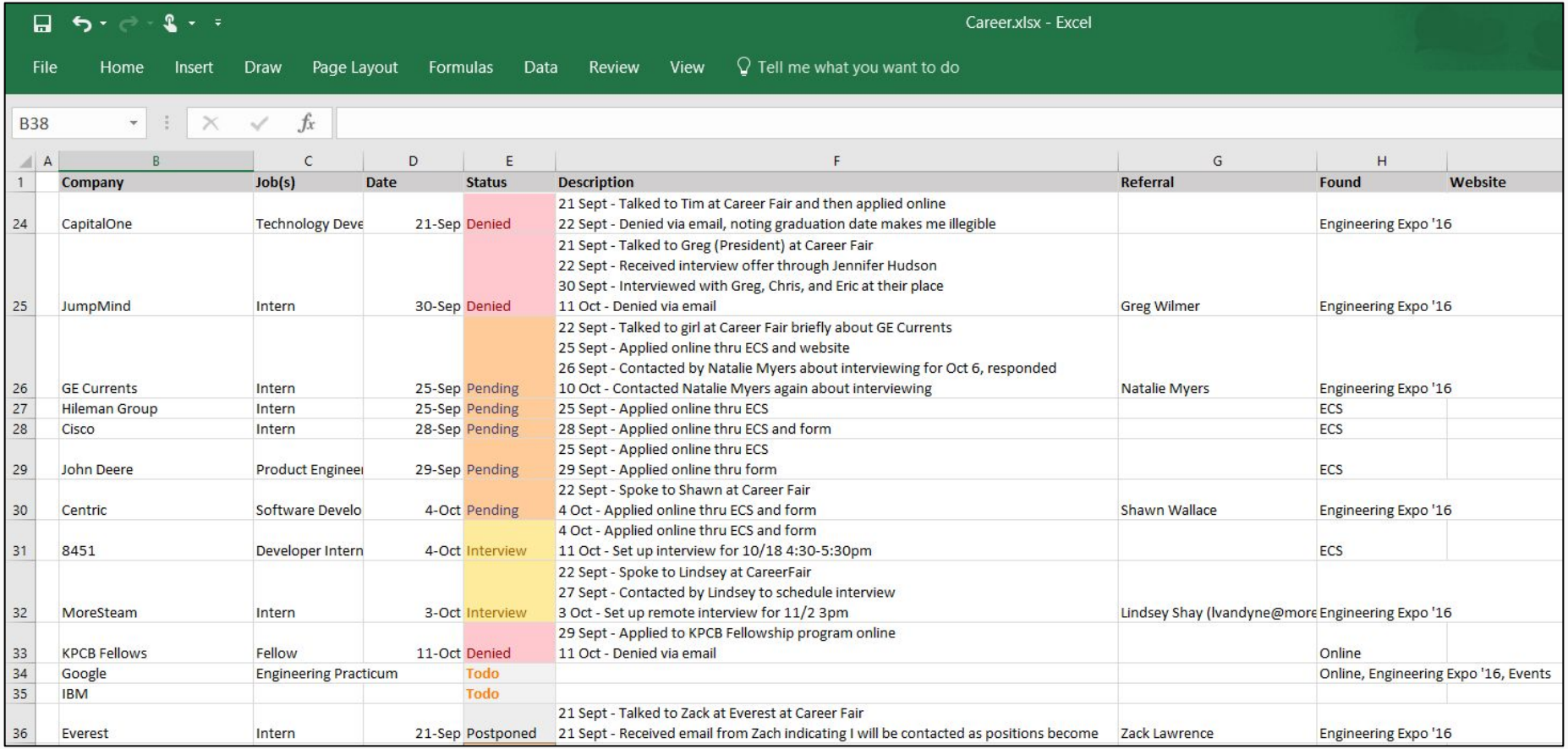
- Response rate might be anywhere from 5-30%, depending on your experience and where you apply.
  As a freshman, you might get <20% interviews from the places you apply.
- Google's Engineering Practicum: 2.5%, KPCB Fellows Program: 3.6%
  - It's still worth applying to competitive programs, but just don't put all your eggs in one basket!
- So....applying/talking to 50 places might get you 7 interviews with a 15% rate.
  - And you'd still have to pass the interviews!
- In most cases:
  - Internal Referral > Career Fairs > Career Services > Applying online > Cold emails

Don't be afraid to be a little annoying

- Follow-up any point in the process, call and email employers, ask tons of questions, show that you care

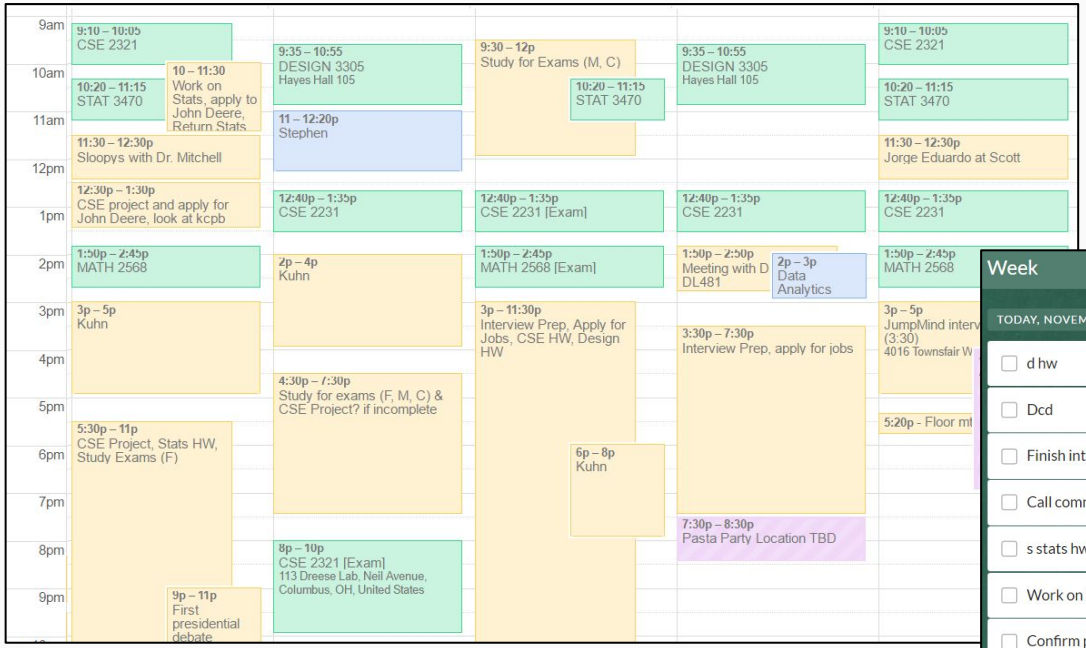
5.1 Some of the places we've applied

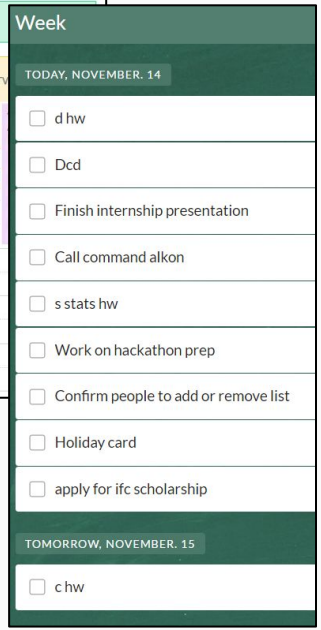
5.2 Staying organized with Excel

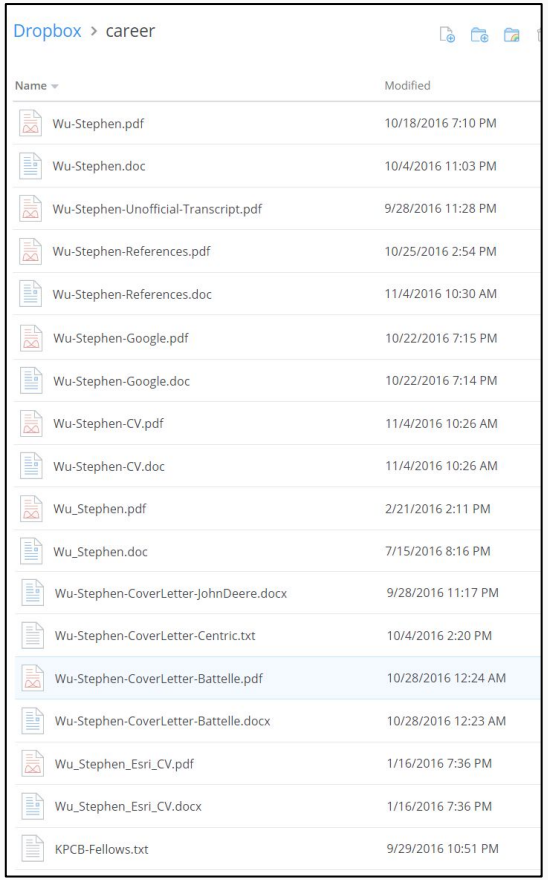


	Company	Job(s)	Date	Status	Description	Referral	Found	Website
24	CapitalOne	Technology Deve	21-Sep	Denied	21 Sept - Talked to Tim at Career Fair and then applied online 22 Sept - Denied via email, noting graduation date makes me illegible		Engineering Expo '16	
25	JumpMind	Intern	30-Sep	Denied	21 Sept - Talked to Greg (President) at Career Fair 22 Sept - Received interview offer through Jennifer Hudson 30 Sept - Interviewed with Greg, Chris, and Eric at their place 11 Oct - Denied via email	Greg Wilmer	Engineering Expo '16	
26	GE Currents	Intern	25-Sep	Pending	22 Sept - Talked to girl at Career Fair briefly about GE Currents 25 Sept - Applied online thru ECS and website 26 Sept - Contacted by Natalie Myers about interviewing for Oct 6, responded 10 Oct - Contacted Natalie Myers again about interviewing	Natalie Myers	Engineering Expo '16	
27	Hileman Group	Intern	25-Sep	Pending	25 Sept - Applied online thru ECS		ECS	
28	Cisco	Intern	28-Sep	Pending	28 Sept - Applied online thru ECS and form		ECS	
29	John Deere	Product Engineer	29-Sep	Pending	25 Sept - Applied online thru ECS 29 Sept - Applied online thru form		ECS	
30	Centric	Software Develo	4-Oct	Pending	22 Sept - Spoke to Shawn at Career Fair 4 Oct - Applied online thru ECS and form	Shawn Wallace	Engineering Expo '16	
31	8451	Developer Intern	4-Oct	Interview	4 Oct - Applied online thru ECS and form 11 Oct - Set up interview for 10/18 4:30-5:30pm		ECS	
32	MoreSteam	Intern	3-Oct	Interview	22 Sept - Spoke to Lindsey at CareerFair 27 Sept - Contacted by Lindsey to schedule interview 3 Oct - Set up remote interview for 11/2 3pm	Lindsey Shay (lvandyne@more	Engineering Expo '16	
33	KPCB Fellows	Fellow	11-Oct	Denied	29 Sept - Applied to KPCB Fellowship program online 11 Oct - Denied via email		Online	
34	Google	Engineering Practicum		Todo			Online, Engineering Expo '16, Events	
35	IBM			Todo				
36	Everest	Intern	21-Sep	Postponed	21 Sept - Talked to Zack at Everest at Career Fair 21 Sept - Received email from Zach indicating I will be contacted as positions become	Zack Lawrence	Engineering Expo '16	

5.3 Staying organized with Google Calendar, Dropbox, Wunderlist







Use tools like Google Calendar, Dropbox, and Wunderlist to stay organized and focused.

5.4 Finally...

The stakes aren't high, yet!

- You certainly do not need to get an internship freshman or sophomore year.
  - Research and volunteering options are great as well depending on your career goals.
- Regardless, you get lots of experience in navigating career fairs, talking to employers, building and editing your resume, pitching yourself, and interviewing!'

It'll be worth the effort

- While the internship application process is long and often exhausting and many positions are very competitive, the pay, benefits, and impact of STEM internships makes it all worth it.
  - Compare salaries to average market rates from ECS or Glassdoor. Negotiate if necessary
  - Unpaid internships are often illegal, exceptions are things like research or non-profits, but summer research programs often offer stipends or grants
    - If you choose to do an unpaid internship, apply for STEP or enrichment grants

Good luck searching!

Questions?

Thanks for listening!

Feel free to email us:

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Stephen Wu - wu.2719@osu.edu