

# DEVELOPING YOUR PATH

*A Guide to Landing  
Your Dream Career*

by **JOHN COLLINS**

This book is dedicated to my son, who inspires me every day; to my wife, whose never-ending support has made my dreams come true; and to my parents, who have guided me into being the person I am today.

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# TABLE OF CONTENTS

The Benefits of Being an Engineer . . . . .	2
Choosing a College . . . . .	3
The Importance of Differentiation. . . . .	6
Internships . . . . .	9
Gaining Computer Science Skills. . . . .	12
Advantages and Disadvantages for Different Job Sectors. . . . .	14
Resumé Writing . . . . .	20
Cover Letters . . . . .	23
The Importance of LinkedIn. . . . .	26
Networking . . . . .	28
The Application Process . . . . .	30
The Interview Process. . . . .	32
Understanding the Compensation and Benefits Package . . . . .	35
Extra Information . . . . .	39
About the Author . . . . .	42

# THE BENEFITS OF BEING AN ENGINEER

**Y**ou've decided to become an engineer! Maybe you had an inspiring family member or mentor who guided you into engineering; or maybe you loved taking things apart as a child, and someone said you should be an engineer. Whatever brought you here, now is the beginning of your journey. No matter if you're in high school, or have decades of experience, this book will help teach you the skills you need to land your dream career!

Engineering school is tough—and through it all—you'll learn how to solve problems, work as a team, conquer challenges, and make amazing things. You may be wondering if it's worth it. Undoubtedly yes. Engineering offers many excellent benefits, including one of the highest salaries for people with an undergraduate degree. Engineers are in such high demand, that many companies offer excellent benefits to potential engineering hires—often going above and beyond what you can find in other industries. Excellent healthcare, vacation, training opportunities, tuition reimbursement, and more.

Some technology companies will even offer free food, onsite gyms, recreation areas, travel opportunities for conferences, onsite healthcare, daycare, and other creative fringe benefits. As an engineer, you also have the opportunity and ability to work anywhere in the world. Companies, including nonprofits, need good engineering talent. For example, engineers can work overseas for Engineers Without Borders—aiding third world countries. You can work in Europe, or the United States—in small towns, or big cities. It's a global profession with global outreach.

Working on cool stuff may be the best perk of all! Who doesn't want to build a rocket, or develop the newest consumer electronics, or make something millions of people can use? The potential impact is limitless...

# CHOOSING A COLLEGE

**C**hoosing the right college can be one of the biggest decisions you make in your life. When you are in high school, you will have a variety of choices—and all the options can be overwhelming. Maybe your friends are going to a specific school. Maybe you've dreamed of attending an ivy league institution, or maybe you want to study abroad, or take a year off before you start college...

Certain universities are well regarded for entrepreneurship and networking—and working with these students can help you create the next big startup. Certain employers may also heavily recruit from certain schools. No matter which university you choose, become a member of the alumni association. Alumni membership offers you a vast array of people you can network with for a future job. Fellow alumni can also become mentors, or even help you find things to do, when you move to a new city.

If you're considering a top-tier university, one of the major benefits is that upon graduation, you're a known entity. The company, graduate school, and other entities and people know the caliber of the students graduating from particular institutions—making it easier to hire potential employees from such "halls of knowledge." However, attending one of these prestigious universities is not a requirement for landing your dream career. You can also encourage recruiters from good companies to consider you, by showcasing your unique skills—such as personal and school projects, your GitHub account and hackathons.

Some companies have dedicated recruiters for well-established engineering programs at certain universities. This strategic focus can result in more career fairs, with exposure to a variety of good engineering companies. Explore the university's cornerstones—large universities may be dedicated to research, and have large class sizes. Smaller universities may center more strongly on undergraduate education, and have smaller class sizes.

Cost can also be a factor. Private schools can cost hundreds of thousands of dollars, and financial aid may be available.

Top-tier universities offer world-class faculty, but for undergraduate students, the professors may focus more on research and graduate teaching. Teaching assistants or graduate students might teach the undergraduate classes. Alumni donations, grants and investments provide endowments that can situate the university on a beautiful campus, with different levels of dormitory and food option plans.

Other choices are often available, as well. Many large state universities, such as the University of Texas at Austin, University of California Berkeley, University of Michigan-Ann Arbor and Georgia Tech, among others, have well-established engineering programs. State taxes help offset the price of the school, making it cheaper for in-state residents. These schools often also receive large endowments, and offer many of the same benefits as other well-regarded programs.

If price is a factor, consider going to a community college for the first two years, and complete your basic courses. Check with the university before taking your classes, to ensure you can transfer your class credits. If the community college and university are in the same city, transfer programs may be available to help feed students into the university, after they complete their first two years. If the university is located elsewhere, the requirements may be different. Transcripts are critical for your internships or first position; but after that, your experience and interview skills should be sufficient.

When considering what university to attend, the school you choose may have a well-established program—one with decades of history; and a large student professional affiliation, with thousands of members, such as the Institute of Electrical and Electronic Engineers (IEEE). Or the university may be newer, and not have as many opportunities readily available. If you choose a school with a smaller engineering program, you may have more opportunities to make an impact and grow—and found new professional endeavors—or lead established organizations. Smaller schools create excellent paths for you to differentiate yourself; and it can be easier to become a leader in an established organization.

You might also consider choosing from a variety of related majors, such as Bioengineering, Robotics, and others. If your dream career is to work in that focused area—such as prosthetics for bioengineering, or cameras with optical engineering—then majoring in those areas will provide you with experience and contacts for a career in that track. However, if your dream job is more broad—such as working at a large consumer electronics company—then majoring in a more general field, such as Mechanical Engineering or Electrical Engineering, would be more beneficial. You will have access to more expansive career opportunities.

You can also always focus more toward a specific industry during graduate school. Some schools offer degrees in Electrical Engineering and Engineering Technology. Electrical Engineering is more theoretical in nature, and typically offers higher career salaries. An Engineering Technology degree will have a strong focus on applications, but you may not be able to work in some

engineering positions with this particular degree. Further, some states won't allow you to take the Professional Engineer license exam with an Engineering Technology degree.

The most important thing to remember when choosing a four-year engineering program is to attend an ABET-certified school. This certification ensures the education you receive meets specific minimum requirements needed to educate future engineers. Many employers require graduates to come from ABET-certified schools; so when you decide on an educational direction, make sure that it has the appropriate credentials.

# THE IMPORTANCE OF DIFFERENTIATION

**Y**our dream job may be developing consumer electronics at a hot tech company, establishing power systems for third world countries, or creating a robotic limb.

In our global economy, job applications can come from around the world. Google receives 2.5 million job applications per year. So, having a resumé that stands out from the crowd, will help get your foot in the door.

## High School

The first step is understanding yourself and your passions. If you enjoy building things, taking things apart, exploring how things work, and inventing new projects, engineering can be a fantastically rewarding field. Continue following your enthusiasm for engineering, take the harder classes in high school, get good grades, volunteer, and explore activities outside the classroom.

## College

If you are still in college, participate in extra-curricular activities, such as IEEE, Eta Kappa Nu, writing for the school newspaper, being a part of a robotics club, or even starting your own club. It's not enough to just be a *member* of these organizations, you should try *leading* them. But don't overwork yourself—it's important to enjoy your college years as well! For example, in your freshmen year, you could be a member of an organization. Participate in activities, get to know the club officers, and see if it's right for you. If the fit is good, consider applying for an officer position with a smaller time commitment. Be involved in the volunteer activities, see how the chair/president runs the organization. Note what the officers are doing well, and what you might improve upon. The following year, apply for the vice-chair or chair position. Lead the organization in ways that take it to the next level. Seemingly easy tasks can often have a large, positive influence—start doing those first. Make an impact.

When you lead an organization, you'll learn how to manage without authority. You are not the other officers' manager, and they are volunteering their free time; but you will learn to negotiate with them about their priorities. This skill set is an excellent one to bring into the working world—and a strong differentiator for you.

Being a member of an engineering club, where you compete by building, such as with hackathons or robotics competitions, provides you with excellent opportunities to gain new technical skills that you won't get in a classroom. It's important to have fun in these activities! Enjoy the experiences.

The goal of a recruiter or hiring manager is to find the best person to fill the role as quickly as possible. Showcasing that you have learned skill sets they need will immediately make the recruiter's job easier.

Your grades are critical for your first position, but after your first job your experience will become more important. You should still get excellent grades, especially if you want to land the best internships, but it's understood that engineering is a difficult major.

If your grades are less than a 3.0, you can still land your dream job, but it will be more difficult. With the thousands of applications, many are going to have above a 3.0. Focus on improving your grades first, however; and you may also need to accept another job as a stepping stone—where you attain experience and excel to gain work experience first.

Get to know your professors and visit them during their office hours. Talk with them about your career goals, ask questions about assignments, and get clarification. In the future, when you need a recommendation for graduate school, or for your first position, your professors can be your references.

By taking the steps noted, you will differentiate yourself from other recent graduates from around the world—those that may be applying to the same jobs you are.

## **Early Career**

If you have already begun your career, and you want to get on the fast track for landing your dream position, you should actively pursue activities related to the career that you want to be in. For example, if you want to work in virtual reality, you should get a virtual reality development kit, and build virtual reality applications using tutorials on YouTube. If you have a regular job, you may not be able to focus on career development, like you could in college. But you can still develop the necessary skills in your free time. Try to take on-the-job training that will open up new skill sets, if your company provides it. If your company offers your dream position, talk with your manager about learning opportunities to advance to that position.

Good companies will encourage this level of personal growth; and depending upon budget and workload, may allow you to explore these opportunities. If your workplace does not offer training courses, you can take free classes online through sites like Coursera. Although these courses don't have the rigor that formal education does, world-class professors often teach these online, open courses—and can teach you the necessary critical information. Some online institutions also offer certificates after completion.

# INTERNSHIPS

**I**nternships can be amazing and life-changing experiences. These apprenticeships can completely formulate your future career, and give you new insight into your passions and goals.

Internships at the high school level are rare, students simply don't have enough technical experience. However, if you are an exceptional student, and you live in a location with a high concentration of technology companies, then one might be available to you.

For most students, the most optimal time to get an internship is the summer between your college sophomore and junior years. Applications for internships for large companies are typically in the fall (August-October) of the prior year. Here's an example timeline:

- Fall of your sophomore year (August, September, October): Companies will visit your university for on-site career fairs. Have a resumé ready, and apply at this time.
- Winter of your sophomore year (November, December, January): Interview on the phone and on-site.
- Spring of your sophomore year (February, March, April): Offers sent; prepare for summer on-site.
- Summer between sophomore and junior year (May, June, July): Enjoy your internship!

An internship gives you the opportunity to see what it's like to work in a real environment. Working with real engineers, solving real problems, delivering real results. An internship is also like a three-month job interview. It gives you a chance to see if this kind of work (and this company) is a good fit for you. Internships give you real work experience, look great on a resumé, and are the single biggest things you can do early on to start propelling your career forward.

The largest technology companies hire thousands of interns every summer, and their internship programs are a strong recruiting tool to get good students to come back full time. And these companies provide activities and fun events throughout the summer. For example, at Microsoft, interns get a secret

intern gift every summer—like a new computer. The company also arranges some special events for the interns—like going to Bill Gates’ house, private concerts, and more.

To apply for internships, visit career fairs. A career fair is a large event, where many companies visit your campus, and set up booths. It’s a great way to introduce yourself to a lot of different companies, and even find one that maybe you hadn’t heard of before. These events are the best time to apply for internships, since you will have direct communication with the recruiters. The recruiters are looking to hire people from your school, and rather than being in an electronic database with thousands of other applicants, you are in a group with people only from your university. Some recruiters will do on-site campus interviews, to accelerate the process.

The university job website may also contain internships available, only for students of your university. This opportunity is another great strategy for applying within a smaller pool of applicants. Leveraging your LinkedIn contacts and network could also give you the chance to land that dream internship—by messaging recruiters directly.

Engineering internships will also pay you, and you will be working on and delivering real products. Companies with a history of internships will have well-established processes, including projects within the scope of an entry-level employee; providing you guidance and mentoring; and giving you valuable work experience. Internships also typically provide temporary housing options, to make sure that the transition to working for the company is as smooth as possible. If you are in the summer between your junior and senior year, at the end of the internship, the company may offer you a job when you are done with school. It can be a huge relief not to worry about applying for jobs, or where you are going to work, during your final year of school.

Companies offer internships during other times of the year, as well; especially for students outside of the United States, where the school schedules may be different. The number of social events and intern peers may be less than with a U.S. company, but international internships are also great options.

And Cooperative Education, commonly known as a Co-Op, is another way to gain experience. Popular in Canada, Co-Ops are like extended internships—but typically last for six to 12 months at a time. You will not attend school during this time, but it can provide you with more extensive work experience. It can be difficult finding entry-level jobs, with no work experience required—but Co-Ops and internships can give you that critical first experience.

Some internships will allow you to go school and work part-time, at the same time. This dual school-work situation can be another way to gain extensive work experience before graduation. However, make sure to prioritize your work load and school commitments first—before overcommitting yourself to other activities.

Some internships can also lead to other internships. Even if you don't land your dream internship over the summer before your junior year—take an opportunity to work part-time in engineering; or take an internship that may not be your dream, but can give you experience—and an improved resumé, for applying again the following year.

You may not like your internship, and that's ok. An internship is like a three-month trial—to see if you like the company and your coworkers. Some companies may be inexperienced in managing interns, and might assign tasks outside of your ability. If you notice this trend, speak to your manager and realign priorities. At times, you may feel challenged and confused—that's normal. Seeking assistance from your coworkers can help. But if you feel your assigned projects and commitments will not be achievable, it's better to let your manager know early—so that you can realign expectations. You will also discover other engineering peers from other career fields that may interest you, such as program management, reliability engineering, and others. Reach out to these people—and learn from them.

Take advantage of learning opportunities as an intern. If the company offers training, take it. Schedule informational interviews with company leaders, and ask them about their careers, and for their advice.

# GAINING COMPUTER SCIENCE SKILLS

**E**lectrical engineering and computer science are inherently intertwined. It's not uncommon for a new electrical engineer today to be asked to do some basic programming activity, such as developing a script for parsing test data. Every tech startup needs software developers, whether that's a front-end developer working on the user interface, a back-end developer working on the secure database for user information, or anywhere in between. Many electrical engineers pursue careers in software development.

Vast resources are available for learning programming, including Khan Academy, Udemy, Codecademy, YouTube, and MIT OpenCourseWare. These courses offer excellent instruction from world-class educators. And you can start learning without needing any previous experience. Most educators typically recommend Python as the introductory programming language, due to the command syntax, and the similarity to writing in English. Python is a good foundation to build upon, and you can learn other programming languages more quickly.

Create a GitHub account; and start posting your projects there. GitHub serves as a portfolio for your employer to see examples of your code. It's ok if your code is basic, and you've been following tutorials. It's a story of your progression as a software developer, and displays the types of projects you have experience with. Add a link to your GitHub account in your resumé, as well as on your LinkedIn.

As you starting gaining coding experience, work on an open-source project that you care about. For example, if you are passionate about video, you can work on Plex; or if you are passionate about operating systems, you can contribute to your favorite version of Linux. If you don't have a lot of development experience, you can also work on debugging issues. Open-source projects need people to reproduce bugs, and write details on an issue. This information is crucial to helping the developers fix the issue. Debugging gives you industry experience with bugs, a big help in any engineering role you may take on.

Due to the high demand of software engineers, especially in such central technology hubs as the San Francisco Bay area, Seattle, Austin, New York and Boston, it can be easier to land a position in these places quickly. If you have a strong background, expect recruiters looking to bring you to their company to contact you multiple times per week.

In recent years, Coding Boot Camps have come to the forefront. These intense schools condense programming fundamentals into a two- to six-month program. The programs can be six or seven days per week, and require developing multiple projects. Some in our profession debate the benefits of coding boot camps. Some professionals argue these schools don't teach enough about computer science, and that they ill-prepare students for programming careers. Other people argue that coding boot camps can provide you with the fundamentals, and that you will learn the rest mostly on the job. Regardless, it can be a rewarding start to your software development career, if that is your passion.

# ADVANTAGES AND DISADVANTAGES FOR DIFFERENT JOB SECTORS

**T**he possibilities for an engineer are endless, and it can be a daunting and difficult task to decide what your dream career may be. This list is by no-means complete, but engineering positions can be divided into three distinct groups: public sector, large company and small company/startup. There are also mid-size companies, and the definition of what may be large or small is up to you.

The public sector provides such public services as the military, infrastructure, or working for a government agency. The private sector is composed of for-profit businesses, ranging in size from one employee to hundreds of thousands. You can also continue your education, become a professor, and teach future engineers. On your journey to defining your dream position, you can narrow down what your dream job might look like, by understanding the expectations, benefits and tradeoffs.

## **Pros of the Public Sector:**

1. Job security and stability. Generally, massive lay-offs due to outside factors are an uncommon occurrence. If a downsizing does occur, people with more seniority get priority placement for available positions.
2. Clear and equal wages—no hiding what someone makes
3. Opportunities to work overseas, and in different cities around the United States
4. Regular and dependable pay increases and promotions
5. May offer pensions and travel to conferences
6. Strong retirement benefits, including contributions to the Thrift Savings Plan (TSP), similar to a 401k. Guaranteed monthly retirement payments, after working for the government for a specific number of years.
7. Excellent healthcare
8. Reimbursement for furthering your education toward advanced degrees.

May also allow you to go to school full time, with your current salary, while not working. This arrangement could result in an obligation to continue working for the government, based on your length of time in school.

9. When starting your career, public sector jobs can offer more time off than private sector counterparts, including federal holidays off. More sick leave; sick leave rolls over; and if you leave, the sick days are paid out.
10. "Telework"—working from home a few days a week, is highly encouraged.
11. Set schedule of 9am-5pm. Generally, overtime is kept to a minimum.
12. Ability to transfer around to different areas of the government, without losing benefits, or seniority

### **Cons of the Public Sector:**

1. Some work places might be "bloated," or have unnecessary bureaucracy, or processes.
2. Can take a while to get things accomplished
3. Work places won't offer some of the unique private-sector perks.
4. Potentially less job availability in your tech city of choice (Seattle, Silicon Valley, Austin, etc.)
5. May require a background clearance, taking months to obtain
6. The political climate can affect job availability. The government may freeze new hiring.
7. Lack of paid paternity or maternity leave
8. Job application process can take many months
9. Generally, hierarchy is established. It's difficult to move up levels, even if you have outstanding performance reviews. Moving up in the government may require you to move from organization to organization. New equipment acquisitions can take up to a year.
10. Influencing team culture can be difficult.

11. Teams can be “siloed,” resulting in redundant efforts—with no visibility, or cross-group collaboration.
12. May be responsible for one small part in a very large overall picture. Influencing strategy can be difficult, or impossible.

### **Pros of Working for a Large Company**

1. Generally, higher pay. Less of a “glass ceiling” for maximizing pay, than the public sector
2. Some work places offer unparalleled benefits, on-site healthcare, beautiful offices, etc.
3. Possibility for higher 401k match than public sector
4. Can offer excellent healthcare, with options—including a health savings account (HSA)
5. May receive paid maternity/paternity leave
6. Bonuses are higher than public sector jobs. Based on performance/profit-sharing, rather than at regular intervals
7. More job availability
8. Company profit-sharing for employees (stock, as part of sign-on bonus, performance bonus, employee stock purchase plans, and more)
9. Will usually have budget for attending conferences, training opportunities, etc.
10. Can offer opportunities to transfer to other parts of the company. This perk can allow you to work in other geographic locations, or on other projects, while still retaining your salary rate and benefits.
11. Will have dedicated people to assist you, such as IT, HR, Benefits teams, team administrators, etc.

### **Cons of Working for a Large Company**

1. Influencing company culture can be difficult.

2. Flexible hours may require you to work outside the normal 9-5, especially if dealing with triaging issues, handling overseas suppliers, etc. Large companies consider such overtime part of the work; and you will not be paid extra, if you are a salaried employee.
3. Depending on the organization, can have a lot of processes; or be slow to adapt to change
4. Teams can be “siloed,” resulting in redundant efforts—with no visibility, or cross-group collaboration.
5. May be responsible for one small part in a very large, overall picture. Influencing company strategy can be difficult, or impossible.

### **Pros of Working for a Small Company**

1. Some workplaces can offer unparalleled benefits, including free food, beautiful offices, etc.
2. If you are an employee from the beginning, and the company gets acquired or meets an IPO, you may become wealthy. Ensure that you understand the stock grants versus options; and the terms of your contract, during rounds of new funding. (This payout period may take years, and is not a guarantee.)
3. Ability to influence the company’s culture and processes
4. May receive paid maternity/paternity leave
5. Bonuses are higher than public sector jobs, and based on performance/ profit-sharing, rather than at regular intervals.
6. With a smaller amount of employees, offices may be in cool locations; like downtown in the city, or near shopping centers. If you also live in the city, your commute to and from work could be very short.
7. You will learn a lot, as your employers will task you with duties outside of your area of expertise, because no one else is there to rely on.
8. Work flow can be incredibly fast. If an idea doesn’t work, the company concept may pivot to a new one. Changes can happen at a fast pace.

## Cons of Working for a Small Company

1. Depending on the size of the small company or startup, pay is typically lower than large companies, or the public sector. The lower salary is usually offset with company stock options, or grants. Depending on the exit strategy (IPO, buy-out, remaining private), stock may, or may not, be worth anything in the future.
2. 401k benefits (matching, fees, etc.) may be limited, or have higher fees than a larger company.
3. Job availability may be limited to startup “hub” areas like Silicon Valley, Seattle, Austin, Boston, or New York.
4. May not have budgets for typical “big company” expenses, like travel to conferences, or business class flights.
5. Flexible hours may require you to work outside the normal 9-5, especially if dealing with triaging issues, or handling overseas suppliers. If you are a salaried employee, such overtime is typically unpaid.
6. High volatility company may have “runway,” or funds available to pay employees before the company runs out of cash. This money is reserved for when projects, or rounds of funding goals are not met, and the company may need to do layoffs—or close its doors.

## Pros of Being a Professor

1. Hours can be flexible.
2. Depending on role and seniority, may be assigned teaching assistants to help teach labs, grade papers, etc.
3. Earn tenure—for academic freedom
4. May offer unique perks, such as discounts, or free education for you, or your children
5. Ability to travel to conferences, seminars and training

## Cons of Being a Professor

1. May require you to write time-consuming proposals for grants; can also be strenuous
2. May require ongoing publications in peer reviewed journals, to advance in your career
3. May have to teach classes that you don't necessarily want to teach
4. Can take years of additional student loans, or low pay for graduate school, before making typical salary
5. May need to move to a different city to work; typically, people teach in a different location than where they earned their degrees
6. Earning tenure can take years, and may not be an available option.

# RESUMÉ WRITING

**A** resumé is your story of how you have grown and advanced in your career. It describes you on paper for someone who hasn't met you yet. However, employers only read resumés for about 20-30 seconds, at most. Resumés are also used as a template for uploading your professional details into job application databases. So, both humans and computer algorithms should be able to read it easily.

First, get a modern professional template from an online resource—one that looks clean and organized. Doing so will help your resumé stand out from the typical, standard resumé templates built into Microsoft Word.

Your resumé should show that you have achieved increasing responsibilities along your career path, and that you are on a strong growth trajectory. Each bullet point in your resumé needs to include: "What you did"; "How you did it"; and describe the impact.

For example: let's say you are a reliability engineer, who wants to get into program management at a different company. You'd want to tailor your bullet points to show a program management impact. Maybe you were recently the lead reliability engineer for a major project. Your resumé could say the following:

- Led the reliability and compliance testing for a major consumer product release, by indirectly managing a team of contractors across Asia and the United States. Qualified the product ahead of schedule, and on budget.

To a program management recruiter, you've explained you have a history of performing your job duties, getting things done on time, and not exceeding allocated budget. Very important traits for any program management role.

As another example: let's say you are an electrical engineer, and your goal is for a similar role at a different company. You're currently working on the layout of a new circuit. You could say:

- Using Cadence, developed a test board that will decrease test time for mechanical engineers by 30%, and decrease validation equipment costs by 10%.

Even though you are not responsible for the budget of that test board, you are a critical team member, making you a contributor to its success. What

this achievement tells the recruiter quickly is that you are an experienced layout engineer, who works with mechanical engineers, and helps to lower organizational costs.

A resumé should be no longer than one page for college hires; two pages for up to about 15 years' experience; and three pages for 20+ years' experience. If you are going into academia, or have significant research skills, one additional page (strictly for publications, speaking engagements, patents, etc.) is acceptable.

When sending your resumé to recruiters, use a PDF file. For job application systems, where you need to upload your resumé, save in the .doc format. Using .docx is the modern default Microsoft Word extension, but it may result in formatting issues. A PDF ensures the file formatting is retained, when viewing on different operating systems. Your email address needs to be professional, if your name is John Alan Smith, here are some acceptable email address examples:

John.Smith, Smith.John, JSmith, John.Alan.Smith, JohnASmith

Keep with modern email domains, like gmail.com, outlook.com, yahoo.com; or professional societies, like ieee.org, asme.org, etc.

Online resumé tutorials may suggest putting a “purpose” section at the beginning of the resumé. I personally find this section redundant and unnecessary. Your purpose is to find a role within their company! Talking about why you are the perfect fit for the role is best suited for the cover letter.

A resumé should include the following details—in this order:

1. Contact information—Name, address, phone number, email address
2. Professional Experience—Put your most recent, and most relevant work experience to the job, toward the top. If you have moved around in the same company (with different roles or teams), you can break these points up into different positions; or keep them in the same company, with additional bullet points. Each bullet point should provide such details as “What you did,” “How you did it,” and “Describe the impact.”
3. Education—Most recent and highest education toward the top. May also include professional certifications (for example: Professional Engineer, Project Management Professional, etc., with certification numbers). If your GPA is under 3.0, consider excluding it.

4. Publications—If you have peer-reviewed professional publications, or conference papers, put that information here.
5. Patents—Only include patents the public can search on the USPTO website
6. Skills and Expertise—Include skills and proficiency in software tools, or additional information you may not have included yet. For example, “Microsoft Office—Expert proficiency”; or “C# Programming—Intermediate proficiency”

Proofread your resumé over and over again, to ensure everything is grammatically correct. Ask a friend to read your resumé for tone, tense and readability, so every word is perfect. A great resumé may take a long time to write initially, but maintaining it afterward will be much easier. The contents can also be copied to LinkedIn.

Some resumé writing websites suggest having a section for references. I generally don't recommend having this section in the resumé—it takes up critical space—and not all employers require references. Have a separate document with three to five references. Include contact information with their name, occupation, email address, phone number, and how you know them. If you apply on a website, and the employer requires this information, then you have it ready. Be sure your references know you have included them; and that you are actively seeking employment opportunities—that way, they can be ready, if they receive a phone call asking about you. If you are still in college, or are a recent college graduate, use your best professors as references. Generally, you want to avoid having friends as references. Try to use references that know the caliber of your work, and that you have worked with professionally.

# COVER LETTERS

**E**xplaining why you are the right fit for the job, should be your goal for your cover letter. It's a chance for you to write something interesting, to capture your reader's attention, and explain why you have the skill sets necessary to start making an impact in their organization—right away!

Writing a cover letter can be the most time-consuming process, when applying for a job. You need to customize it for each individual job. Try to quicken this process by developing a generic cover letter, and then modifying it, as needed, for each different position.

The cover letter format should include:

1. Contact Information—Name, address, phone number and email address
2. Date—Current date of application
3. Job title for the position you are applying to
4. A first paragraph—a brief summary of your job experience, and how it relates to this position. Include interesting details about what you did, how you did it, and what impact you made.
5. A second paragraph that describes why you are the perfect fit for this position. The recruiter's job is not to make your dreams come true, that's your responsibility! The objective here is to talk about why you would be an invaluable asset. For example, talk about a project that solved a problem that they might be facing, or are hiring for.
6. The last paragraph—summarizing your interest in the role, and the best way to contact you
7. A formal conclusion, with "Sincerely," and your name

Like a resumé, send cover letters (when requested) as a PDF to recruiters and to a .doc file (not .docx) to ensure capability across programs. Keep your cover letter to one page. Proofread for grammar and tone, and examine for readability.

# CAREER FAIRS

**N**ow that you have a resumé, if you're still in college, you should consider attending career fairs. Typically held in the fall and spring, recruiters visit colleges around the country to find candidates for their internship and entry level positions. This opportunity gives you the chance to learn more about the company—and to see if it's a good fit. With a limited recruiting budget to find candidates, these companies chose your university, so it's a great time to apply.

You'll likely see flyers, emails, bulletins, announcements and social media about upcoming career fairs. The college recruiting process can take months, so an application submitted in a fall career fair, would be for an internship the following summer. Print out at least two copies of your resumé for every employer you plan on talking to. Use premium resumé paper, typically thicker and nicer quality, rather than plain, white sheet, Xerox paper.

Deciding what to wear is difficult, because your attire depends on the types of companies you are talking to. Dress semi-formally (no jacket), at a minimum. If you are talking with potential employers in government agencies, or more formal companies (like high-tech or banking), recruiters recommend wearing a full suit.

Don't wear a backpack. Instead, bring a notepad with a notepad holder, and put your resumé copies in a folder. As you meet with recruiters, write notes about the company—and be engaged in the conversation.

Popular companies' recruiters will most likely have a crowd of people around them, so it's best to go at the beginning of the career fair—when less people are around, and when the recruiters will also be more engaged. It can be tiring recruiting all day.

Bring questions for the company recruiters, such as “What kind of internship opportunities do you have?”; “What kind of projects do interns work on?”; and “Where are the internship positions located?”

The company recruiters may also be doing on-site interviews during the career fair, to best utilize their time. Be prepared for these common questions that may arise: “What kind of projects have you worked on?”; “What was the hardest project you've done; and how did you solve it?”; “What different types of engineers have you worked with?” Practice aloud answering these questions—giving answers that take 30 to 90 seconds.

Occasionally, your city, or various clubs or institutions will host or sponsor a career fair. Stay aware on Facebook, your university's website and elsewhere for these events—and most importantly, prepare!

# THE IMPORTANCE OF LINKEDIN

**T**he power of LinkedIn cannot be understated. For an engineer, LinkedIn is the resource recruiters use to find potential candidates. 87% of recruiters use LinkedIn in their candidate search. Don't be left out! Tailor your profile, so recruiters can read it easily; it can help increase your chances of them noticing you.

LinkedIn is not your resumé, it's an online database to showcase your accomplishments and work history. Normal rules for resumé writing, (like keeping it to two pages), are not applicable. LinkedIn profiles should be as thorough as possible. Fill out every section. The following steps serve as guidance for making a complete profile:

1. Take a great photo of yourself. A recruiter is much more likely to click on your profile, if you have a well-staged photo. Make sure no one else is in the picture, that it is only a headshot, wear professional clothing, and smile. Have a friend or professional take the photo—with a good camera and good lighting. These subtle differences can make your profile stand out.
2. If you have a Github account or personal projects, put a link to them on your LinkedIn page. Add information on the projects you've worked on, but remember not to disclose confidential information that cannot be shared.
3. Writing the actual content for the resumé section will take the most amount of time—but you can copy and paste the information from your current resumé. It's difficult paring months or years of work experience down to a few sentences. To help guide your profile, for every bullet point write "What you did," "How you did it," and describe the impact.
4. Use a professional email address, like your first name or first initial, with your last name. Generally, keep numbers out of your email address or alias. Start checking this email—automatically forward these emails to your normal email address.
5. LinkedIn's algorithms prefer active site users, so update your profiles frequently, and engage with content that others post.
6. LinkedIn works on the "Kevin Bacon" principle, that your network is as strong as your connections. Some people believe you should only have strong connections—like people you know in person, whose work you have

seen. Other people believe you should have many connections, because that increases the chances of you sharing a connection with recruiters, and ranking higher on their searches. LinkedIn displays connections of connections of connections, so your network grows exponentially—and the increase in connections you have will show in search results. Your 500 connections can translate to a network of tens of thousands of people. If recruiters for your dream company are in that network, they are more likely to notice you.

7. View other people's profiles in your company, as examples of what makes a strong profile.
8. Turn on settings features showing you are interested in pursuing opportunities. These preferences will not be visible to the public, but recruiters will be able to see them.
9. Other professional social networks, like XING for German users, may be more applicable, depending on the companies you are interested in, and where you want to live.

LinkedIn also offers premium services that cost money—allowing you to send more messages to people not in your network. Depending on the stage of your job search and profile maturity, such services may be worthwhile.

# NETWORKING

**A**ccording to leading recruiters, 80% of jobs are never posted. Those jobs are filled through networking. It can be awkward and confusing to network with people; but it's actually straightforward, easy and fun, if you know how to prepare and practice.

## Networking at Conferences

Conferences often have an entrance fee, sometimes hundreds of dollars. So, opportunities to travel and attend conferences may not be open to everyone. At a conference, few people know each other. Some conferences will put together "mixers," or social events—to get people to talk to one another. You can also sit down at a table with other attendees at coffee, or during lunch breaks.

It may feel awkward, but simply say, "Hi, my name is \_\_\_\_\_. What do you do?" People enjoy talking about themselves. You'll find it's easy to start a conversation—and you can learn a lot from individuals this way. Bring business cards that list your name, email address and phone number. After introducing yourself to people, if they work at a company you are interested in, or have a job you would like to learn more about, continue the conversation. Have a true and meaningful interaction, so you can remember each other. Ask them about opportunities at their company; if you can send them an email; and add them on LinkedIn.

## Networking at Meetups and Volunteer Activities

Networking at meetups may be more frequent, such as every month. You can find events on meetup.com, through IEEE, or other organizations. If you live in a large city, many regular networking events take place all the time. Meetups are often free, or have a very small entrance fee—and you can be a part of these groups, even if you don't have experience in the area. For example, if you are interested in working for a Virtual Reality company, but don't yet have the skills, you can join a Virtual Reality meetup and find other mentors and people in the industry. Bring your business cards, and talk to a variety of individuals. Tell them what you are interested in doing. Most people are open and willing to help out others, if they have a chance to get to know you.

## **Networking on LinkedIn**

Recruiters for the companies you are interested in working for, will also be on LinkedIn. If you have a complete profile and see a position online that matches your skill set, you can send a message on LinkedIn introducing yourself. Inquire about the position you are interested in.

## **Introduction through a Mutual Acquaintance**

A great way to get an introduction to a contact is through a mutual acquaintance. If you know someone on LinkedIn, or in person, that knows someone that you would like to meet, try and reach out—ask for an introduction. They may receive an employee referral bonus for recommending you; likewise, if you refer a future candidate, you may also receive a monetary reward.

# THE APPLICATION PROCESS

The application process can be arduous, so try and make it as simple and quick as possible. Due to the amount of users applying for a position online at large companies, you may not even receive a notification back on your application status. Try and make the process as simple as possible; and have all the common information—such as work history, and contact details—in a Microsoft Word document, so you can copy and paste it quickly.

Applicant Tracking Systems (ATS) are the databases where you enter your resumé details. It can take a long time to enter these details, especially if companies have created their own databases. However, some alternatives exist, depending on where your dream job may be. Many start-ups have formed to make the job application process easy. The following tech companies, listed on <https://github.com/j-delaney/easy-application>, have an easy application process. Many apps also have features, where you create a profile; view the job listings; and apply with a few steps, such as Switch or LinkedIn. Other job sites, like Dice and Glassdoor, also have job search capabilities. And some are country focused, like XING.com, for German companies.

Generally, the process for an open job is as follows:

1. A team requires a new employee. If the budget and resource is approved, then a new open position is created.
2. The team will look for friends and other employees in their network for people. You may see these people post on LinkedIn or Facebook that they are hiring. This reason is another valuable one for having a large network. At this stage, the pool of applicants is very small.
3. If no one on the team finds a current employee to fill the position, the job is posted on the company website. The pool of potential applicants is much larger, but depending on the company size and interest level, the recruiters may need to find a larger applicant selection.
4. If recruiters don't identify a good candidate from the interviews; or they are not getting enough interest in the role from the website; then they post the position on a recruiting website (Dice.com, Glassdoor.com, Monster.com, etc.) The pool of applicants is now very large. The company will pay to post jobs to these sites, and sometimes has to pay a percentage

of the employee's first year's salary, as a "finder's fee." At this stage, in-house company recruiters may also hire external agency recruiters to find applicants.

Due to changes in budget, duties, funding, and scope, the open position may close at any time. Keep this thought in mind, if you don't hear back during the application process. Continue applying! If you aren't landing interviews, reexamine your resumé or skills, compared to the positions you are looking for. People at dedicated online forums will give impartial feedback, critiques, and suggestions for improvement, if you ask.

# THE INTERVIEW PROCESS

**W**hen you receive a reply from an application, prepare yourself for the interview. When a LinkedIn recruiter contacts you by email, or responds to you at a conference; prepare yourself by knowing the answers to the following questions. Understand your objectives.

Having answers to these questions will prepare you for whether the position is right for you, and if the timing is aligned.

Many large technology companies follow similar steps for interviewing:

1. A recruiter contacts you on LinkedIn or email; or you apply online, asking for a phone call interview.
2. The recruiter has a phone interview with you, and you discuss the job details with the recruiter. Expect questions like:

When are you available to start working?

When are you available to interview?

Can you send your resumé?

What is your expected salary range?

What is your current compensation package?

Describe your work history. You should have a two- to three- minute career overview, starting with your first job after college. Prepare the message in the context of gaining increasing responsibilities and growth in your career.

3. The recruiter will share your information with the hiring manager and/or your potential future manager. If they find a good fit between your background and the position, then the recruiter will set up a phone call with the hiring manager. This phone call will technically be the first interview, typically scheduled for an hour. During this time, the hiring manager will ask you again for your background, and will press you further about your previous roles and responsibilities. Be prepared for questions about teams that you have worked with, processes that you have used, and how you solved problems. Have a cup of water with you. Print out your resumé,

and have it available for your reference. Choose a quiet area for the interview, with no distractions. If you are going to use your cellphone for the interview, choose a place where you have good reception.

4. If you pass the phone interview stage, the recruiter will ask you for an on-site interview. You may work with the recruiter to arrange your travel plans, if necessary. An on-site interview can last anywhere from four to eight hours. You can interview with anywhere from four to 12 different people. You can expect to white-board out your answers.

Some of the questions will have clear right answers, but some questions will intentionally be opened-ended. For these types of questions, explaining your thought process using a white-board will allow you to show the interviewer how you think and solve problems. Check online for examples of the types of interview questions you can expect. The day of interviews will be long and difficult. Be sure to stay hydrated; and it's acceptable to take a moment to think about the answer, after the interviewer asks you a question. Ask the interviewer clarifying questions, if necessary. Also ask follow-up questions, after you have answered their questions. Be prepared to spend a few minutes with each interviewer, asking questions you may have.

This time is critical for understanding if the company is right for you. Maybe you are curious about the culture, or training opportunities. Keep questions related to compensation, vacation, and other questions related directly to you (rather than how you can benefit the company) out of the conversation during the interview. The recruiter will be happy to answer such questions, after they offer you a job. Bring printed resumé copies to the interview. Use your resumé as a reference during the discussions. Bring a notepad to write notes during the discussions, as the interviewers are answering your questions.

Your dress code for the interview depends on the business, and the company locale. Typically, West Coast, private technology companies dress less formally (slacks and a nice button down shirt, no tie). East Coast companies tend to dress more formally. Certain industries and certain positions may require you to dress more formally or less formally. Try to see how the staff dresses—and then dress “one step up.” For example: If most people are wearing shorts and t-shirts, then consider wearing nice jeans, and a nice, button-down shirt. If everyone is wearing dress shirts with ties, wear a suit with a tie and jacket. You don't want to underdress.

How you dress is less important than the skill sets you bring, so don't stress out about it. If you have questions, or are unsure, it's ok to ask

the recruiter for recommendations. Make sure to read the job interview thoroughly, understand every detail, how your job experience relates, and then solve each bullet point. You will likely have a lunch interview. Don't choose a messy food that may cause bad breath. Choose a neutral food, like salad, if you have a choice. You'll be talking during the interview, so choosing something you can eat quickly will also help.

5. After the on-site interview, write down the questions your interviewers asked you. It will help you prepare, and serve as a reference, for interviews at other companies.
6. A recruiter may contact you later that day—or months later—to notify you, if you have been selected for the job. If the recruiter gives you an offer, they will share the compensation package with you. Now is the appropriate time to discuss your sign-on package, relocation and benefits.
7. Should you choose to accept the position, you should give your current company at least two weeks notice. And if you are going to a competitor, even after giving two weeks notice, your current employer may terminate you the day you inform them you are leaving.

The best time to apply for a job is when you already have a job, since you have the opportunity to search for a position that best suits your skill sets and interest—without the financial pressures, or an employment gap on your resumé. If you do have a gap, either due to a layoff, or a personal commitment, be prepared to briefly explain the situation—if it arises during the interview. Take online learning courses and expand your skill set during this period. Doing so will allow you to turn the gap into a positive opportunity.

From the time you apply to a position, to the time that you actually start working at the company, it can be two to 12 months. Startups tend to work faster, while government agencies, especially if you need a security clearance and in-depth background check, can take up to a year. If you are graduating college in May, you should be applying for jobs in September or October of the prior year. Most college hires are brought on at the same time, and many begin their jobs after taking a summer break, after graduation.

Even if you feel like you excelled at the interview, you may not be selected to proceed forward. Budget cuts during the process; or maybe another, more qualified candidate are factors outside of your control. Give it your best. Learn from the experience. And continue trying.

# UNDERSTANDING THE COMPENSATION AND BENEFITS PACKAGE

**Y**ou've passed the interview, and you now have an offer. Congratulations! Now comes the exciting time to understand your benefits and compensation package. Your total compensation package is your salary, sign-on bonus, Restricted Stock Units (RSUs), or Stock Options, and Relocation Package. Carefully read your offer letter. Consult online resources, if you have any questions. The salary is your annual pay, usually paid in increments every two weeks. Your relocation package may offer a flat cash incentive for you to move yourself; or it may include the company paying for moving your belongings, giving you temporary housing, etc. You will usually receive a sign-on bonus with your first paycheck as a new employee. Understand your offer letter and contract, as you may have to pay back some or all of this amount, if you leave the company before a certain period of time.

## Restricted Stock Units (RSUs)

Stock is a share in a company. You can buy stocks in the open market, but often companies will give employees special shares called "Restricted Stock Units," in return for your employment. RSUs will have a vesting schedule, and may have specific "black-out" dates, for when you can sell. For example, you get an offer for a job with an annual salary of \$50,000. In addition, you get a cash-sign on bonus that will appear in your first paycheck of \$5,000 and RSUs valued at \$20,000. Typically your RSUs will be granted at the share price value on the stock market on a specific day, usually about 30 days into your employment. For this example, let's say that the stock price is \$10 per share, 30 days after your hire date. Vesting schedules differ by company, but in this example, the vesting schedule is spread over four years: 10%/20%/30%/40%. Your company will allocate 2,000 shares to you (\$20,000 @ the \$10 per share price) in a separate account. After one year of employment at the company, you will get 10%—200 shares (2,000 shares x 10%). After two years, you will get 20%—400 shares (2,000 shares x 20%). After three years, you will get 600 shares (2,000 shares x 30%). The remaining 800 shares (40% of your shares) will be delivered after you work at the company for four years (2,000 shares x 40%). Income taxes, and the date you sell your stock, will affect your actual return. Talk with your financial professional for more details. If you leave your company before the vesting completes, you forfeit any unvested shares.

## Stock Options

If you join a startup early, you may be granted Stock Options. Stock Options allow you to buy shares of the company at a specific (typically low) price. This price is the latest valuation prior to the employee's start date. Stock Options are options to buy at the present price. For example, you receive 10,000 options; you've been with the startup a long time; and now the company goes public—and is worth \$10 per share. If your exercise price was \$7, then you have made \$70,000 ( $\$10/\text{share} = \$7 \times 10,000$ ). Options offset your additional risk as an employee, working for a company that has not yet reached an Initial Public Offering (IPO). Certain stipulations, such as your share of the company being diluted as more employees are hired, funding rounds, when you can sell, and preferred shares, can all affect your options. Stock Options and their terms can vary by company, so browse resources online, consult your financial professional, and be sure you understand your offer.

## Employee Stock Purchase Plan

Some employers may offer purchasing company stock at a discount, say 10%. This option usually comes with stipulations, such as you can only buy stock during certain periods, or on specific days. Some financial advice would be against putting money into your company stock (you already invest your time working here, therefore you shouldn't spend more of your investments in the company); but other advisors will say this option is a guaranteed discount—and you can sell the stock as soon as you get it. Consult with a financial advisor for further details.

## Employee Referral Programs

Most tech companies will offer a cash bonus for recommending someone that gets hired—sometimes in the thousands of dollars. However, some companies may have a clause or “black out” period, before you can contact old coworkers and get employee benefits. So make sure you understand your previous employer's contract, and your new one, as well.

This program also has the added benefit that the company gets a “known quantity”; if you're a good engineer, you're likely to know other good engineers. So, it's always important never to “burn your bridges.” Always leave on good terms with your previous employer and team.

## Patent Programs

Filing patents can earn compensation at most tech companies. Patents protect your employer's intellectual property and ideas. Even if the company never decides to use that patent, filing a patent can offer protection against the competition. Large technology companies and government agencies will have an established internal patent process; small startups may not have one in place.

Generally, the path to filing a patent is that an individual or a group creates an idea. They submit the idea to a committee, or to the legal team, with details. The committee, or legal team, will review the submission, to determine if it aligns with the company's interests and strategy. If the invention meets the criteria, then the company may work with internal counsel, or outside counsel, for drafting a patent—based on the documents the inventors submit.

## Healthcare

In the United States, healthcare can be complicated, with a variety of options. A wealth of information about healthcare exists online, but generally the options will be a Health Savings Accounts (HSA), PPO, or HMO. At a high level, a Health Savings Account is a special investment account. Your employer will contribute a certain amount of dollars per month into the account, and you can also contribute into the account. You use the money in this account to pay for your medical expenses, often "High Deductible," meaning you pay a higher amount than a PPO or HMO out-of-pocket—before your insurance will pay. The HSA benefit is you can contribute money into the account tax-free; the money grows tax-free; and you can withdraw funds from the account for health-care expenses tax-free. Also, if you leave your employer, your HSA money is portable; and sometimes, you can use the money in the HSA accounts for investments.

A Preferred Provider Organization, or PPO, will have a lower deductible than a Health Savings Account; and it will allow you to visit doctors both in-network and out-of-network. You can check your health provider's website to determine what is in, and what is out, of network. Generally, your amount to be paid out-of-pocket will be much less, if the doctor is in-network. You may have to pay monthly premiums to have a PPO health plan.

A Health Maintenance Organization, or HMO, will come with greater stipulations—such as you must get healthcare from an in-network provider. The tradeoff is that the premiums or deductibles will be less than with PPOs.

Choose a plan that works best for you and your family. Read the insurance material carefully, to understand your out-of-pocket expenses, as well as what is, and is not, covered.

### **Additional Parts of the Compensation Package**

As part of the package, you may also receive such additional benefits as tuition reimbursement, access to discount websites with special deals for employees, life insurance for you and your family, group legal coverage, paid cellphone plans, and public transportation reimbursement, among others.

# EXTRA INFORMATION

## **P**aying it Forward

As you grow in your career, you should allocate time to mentor and foster the growth of others. Mentoring is a great starting point to get into management, if that is your desired career path.

Coaching others will help you formulate your ideas. Some companies offer formal mentoring training programs—an excellent stepping stone, for both mentors and mentees.

You should also have mentors—people you trust you can look up to for advice and consultation. Set up regular monthly conversations. The mentee is the one that drives the conversation, and should bring a list of topics and questions to the mentor to help facilitate the discussion.

## **Goal Setting**

Goal setting is a common trait among successful leaders. Write down your six-month, one-year, five-year and 10-year goals. Keep them in an area you frequently visit. Use a sticky note, or an online note-taking tool—like OneNote or Evernote. Refer to it often.

In engineering school, you learned how to break a challenging problem into smaller, more manageable chunks. Likewise, identify the major steps you need to achieve your goals. Work toward each of these smaller steps to reach your dream.

## **Don't Give Up**

The path to your dream career won't be a straight one. You'll likely stumble along the way—and that's ok. Maybe a new and more interesting career path will open up during your journey. As you search for jobs, it can be tedious filling out the same forms continuously, hoping to get an interview. Going to networking events, contacting people on LinkedIn, getting interviews; and then, potentially not passing those interviews... it can all be a very frustrating, overwhelming process that can take months. But each time—you will learn, get better, become more efficient—and get one step closer to your goal.

## **Working Internationally**

The ability for an engineer to work internationally is a unique opportunity in our chosen profession. Many countries have “fast-track” opportunities, such as expedited visas for engineering professionals. Some countries also offer free college and graduate school education, and will teach courses in English. Most countries don’t pay engineers as high a salary as in the United States, but may offer other advantages—such as increased vacation time, paid parental leave, lower cost-of-living, access to public transportation, and more.

Some U.S. companies have offices overseas, and may give you opportunities to work there—while keeping your tenure and pay as if you were in the United States. Some engineering positions with the U.S. Government are also based overseas. If you are a European Union country citizen, working in another EU country is also much easier. Many forums and websites can help you navigate the paperwork and application processes for overseas applications. Look into job sites that might be popular for the country you are interested in working in, such as XING.com, for positions in Germany.

## **Contractor Opportunities**

Some companies and government agencies hire many contractors. As a contractor, you won’t be a full-time employee, with company benefits. Instead, you will be the contracting agency's employee, and carry its salary and benefits. The role may have certain restrictions, such as limited access to meetings and information. Some contractors are temporary, while others can work in the role for years. Many companies look to transition your contractor role into a full-time, internal employee position, if your performance is strong. If you want to work at a specific company or government department, contracting is an excellent way to gain the needed contacts and experience first.

## **Take Advantage of Training Opportunities**

Many companies offer internal or external training opportunities. If you are interested in getting your Project Management Professional (PMP) certification, for example, many employers will pay for the class and the test—if you request it. Conferences or trade shows may also be available, to expand your industry knowledge and your network. Ask to be a part of these activities, if there is something that you are interested in, and it can enhance your skill set.

## Should I Get a Master's Degree?

It's a personal choice. If you already have a job offer before you graduate, then upon graduation, you may want to take it—rather than waiting to start your career to pursue a Master's degree. The job offer will not remain for another year, but you have already developed the contacts, in case you want to discuss positions in the future. Many employers also pay for tuition, or offer some tuition reimbursement, if you decide to get your Master's degree. However, it can be difficult working full time, while also going to school.

If you don't have a job after you receive your Bachelor's degree, taking the extra time to get a Master's degree will be a benefit for the rest of your career—and can be a differentiator on your resumé.

## Performance Incentives

As an employee of a company, if you exceed your performance metrics, then you may be promoted. A promotion may include a cash bonus, a salary increase, and additional RSUs or stock options. Some companies also give a one to two percent salary increase, to offset inflation each year. Your RSUs may also have a vesting schedule. Talk with your manager, and browse online resources for what is typical, and what you can earn as a high performer. Further, ask what the expectations are to earn a promotion in the future.

## The First 90 Days on Your New Job

The first 90 days is a critical time to make a difference and showcase your skill sets to a wide audience. Be inquisitive, ask questions. If one doesn't exist already, start a help guide for new employees, as you encounter new information. Find a mentor, and set up regular discussions. Introduce yourself to people; talk about your skill sets, and what you will be doing with your team. Keep a list of suggestions for improvements; and share it with your manager, when an appropriate time arises. Keep a work journal; make a few bullet points in it every week about what you accomplished, what could have gone better, and feedback that people gave to you (both good and bad). A journal will be an invaluable resource when you need to write a performance self-evaluation.

Set up regular meetings between you and your manager to discuss your activities, and anything you may need help with. Bring up project challenges that you want to work on. And most importantly—continue to learn.

## ABOUT THE AUTHOR

**J**ohn Collins is an Engineering Program Manager at Snap, Inc., in Los Angeles, California, where he creates hardware that reinvents the camera, and improves the way people live and communicate.

Prior to joining Snap, Collins worked at Microsoft, in Silicon Valley, developing HoloLens, the first self-contained holographic computer, enabling people to engage with digital content and interact with holograms in their environments. He was the program manager for battery and camera technologies research and development for augmented reality products.

Before joining Microsoft, Collins worked as an electrical engineering lead for the motherboard and hard drive for the Xbox 360 and Xbox One—and also at Apple, managing battery development for the iPhone, iPad and iPod product lines.

He has trained hundreds on the processes, tools and best practices necessary to create high-volume consumer electronics. Collins has been an IEEE and Consumer Electronics Society member since 2008; and he was president of the IEEE and Eta Kappa Nu electrical engineering honor society student chapters at the University of Texas at San Antonio.

Collins also co-founded DailyLovelies.com with his wife, a startup that provides custom-tailored cosmetics. He is passionate about consumer electronics, and the future of virtual and augmented reality.



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