

Corporate Culture: Common Intern Struggles Working in Software Engineering

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ABSTRACT

Many college students obtaining their first internships in software engineering are not taught the soft skills necessary to succeed in corporate work environments, leading to problems in effective communication, such as asking for help, escalating issues, and working as a team. During my software engineering internship, I personally discovered and found specific strategies applying soft skills that allowed me to succeed. Soft skills are critical in the technology industry, especially effective communication skills and the ability to work as a team. To develop soft skills, I worked on ways to practice communicating respectfully with the team, as well as working closely with my manager, which allowed me to stand out in my work. In applying these methods and strategies throughout my internship, I was able to effectively finish my team project early, complete additional stretch goals, and receive a return offer from the company. This skillset can be refined and expanded on by new strategies for success.

1. INTRODUCTION

The ability to do something is just as important as communicating that you can do it. Engineers are always taught the technical skills necessary to succeed in their career, but they are not taught how to communicate their abilities and show off their strengths. What

use is honing your technical skills if no one knows how good they are?

Soft skills are undervalued in education for software engineering, as college courses generally focus on teaching technical skills and rarely on soft skills. However, soft skills are just as important as if not more important for not only landing a job, but also continuing one's career growth and success. During my internship with Amazon in the summer of 2022, I was able to work effectively with my team, ask for help or escalate issues to other software engineers on my team, and communicate effectively in order to complete my project comfortably ahead of the deadline and receive a return offer from my team.

These are the essential soft skills that I used to succeed during my internship and which I incorporated into my routine to effectively communicate with other software engineers on my team.

2. RELATED WORKS

Patacsil and Tablatin (2017) discussing the gap of importance between soft and hard skills in Information Technology (IT), Patacsil argues that students believed hard skills were very important while the industries hiring them only viewed them as somewhat important. He posits that universities need to do a better job of incorporating soft skills better into the

curriculum, as they are just as important as hard skills. Universities almost exclusively teach students technical skills, which causes students to believe that this is the only skillset they need to succeed in the workplace.

Dean and East (2019) discuss the importance of soft skills in the 21st century workforce, stating that technical skills are not enough for people to succeed in their careers, since the computer science job market is too competitive. Dean states that training soft skills is necessary to “gain a competitive edge in the marketplace,” and that learning soft skills will benefit workers who are not doing well in their current positions or are unemployed.

While these works discuss how soft skills are undervalued, my approach to this problem is to propose that universities teach the most applicable soft skills to learn for software engineer interns to learn, along with ways to apply those skills effectively in the work environment.

3. PROCESS DESIGN

This section discusses specific soft skills that can be used in the workplace.

3.1 Why are Soft Skills Important?

Computer Science students today are taking complex data structures and algorithms courses, committing them to memory through coding websites like LeetCode or HackerRank. While these are excellent exercises for honing skills required to succeed in the technical portion of job interviews, students completely forget about the behavioral questions that come first, thinking that they can just make up answers on the spot. However, most of the time interviewers already know if they will recommend or reject a candidate for hire based on first impressions from their behavioral interview. This is because

behavioral questions test essential communication skills that are necessary to work in a real team environment.

3.2 Essential Soft Skills

Soft skills cover a wide range of abilities, but here are some that are useful most frequently in the work environment:

3.2.1 Escalating Issues

Knowing when to ask for help requires a balance between spending time diving into an issue yourself while not wasting time stuck on the same problem that someone else might have the solution to. Different work environments will expect workers to be more or less independent, but it is generally acceptable to ask for help after spending 30 minutes to an hour researching an issue yourself. Additionally, when asking for help, it is important to communicate your insight into the issue and any methods you took to attempt to solve the problem. This shows team members that you have spent time and effort looking for the solution yourself instead of relying on others to solve your problem.

3.2.2 Communicating Effectively

This topic is very broad, as it can encompass soft skills as a concept entirely. However, effective communication is vital for fostering a healthy team dynamic. For example, when one is starting in a new internship position, it can be a good idea to send messages to your manager at the end of each workday updating them on what you have accomplished. These messages should be concise, taking up no more than 2 to 3 sentences. This shows your manager that you are making progress every day and allows them to conveniently track it, since they are generally occupied with more concerning work-related problems. If you are not sure your manager would appreciate these messages, you can simply ask them.

Another strategy to demonstrate that you can communicate effectively is by taking ownership of your work and being critical of yourself and your peers in a respectful way. If you are discussing a design plan, do not be afraid to ask questions, as it shows that you are attentive and can think critically instead of just following instructions.

3.2.3 Disagreeing Respectfully

No one wants to start conflict in the workplace, but conflict is inevitable and helps developers produce better products and work together more effectively. The key to disagreeing with others is to do so in a respectful manner, while also providing an alternative solution. Disagreeing is no good if you cannot provide a solution to the problem. One way to disagree respectfully is to do so in the form of a question. This can make a claim sound less confrontational, as to bring attention to the issue itself rather than the person behind it.

4. RESULTS

At the end of my internship, I successfully finished my project early and completed additional stretch goals. My senior manager had actually given me an early notice on my return offer since he recognized the efficiency and quality of my work.

One strategy that was very successful was sending daily update messages at the end of the workday to my manager. He appreciated having records of my progress, and he compiled them into a single document for future interns to reference.

Additionally, there were times where I had to disagree respectfully with my design plan because I either found easier ways to implement things or found certain aspects of the project unnecessary. As a result, the project guidelines were defined more clearly,

and I was able to take ownership of the work I was doing.

5. CONCLUSION

This paper was intended to address the importance of soft skills in software engineering and ways to utilize them effectively in the workplace. The majority of college students underestimate the importance of soft skills in the technology industry, since universities almost exclusively focus on teaching technical skills. To help students foster healthy communication in team environments and succeed in their own careers, I have provided context throughout this paper for the importance of soft skills, as well as ways I practiced and used them to succeed in my software engineering internship.

6. FUTURE WORK

This work is still in its preliminary stages, and there are more nuanced and new ways to develop and apply soft skills as the technology workplace changes. Communication is already changing, as developers are moving online for work meetings, and people are working remotely. Additionally, this paper only touches on the surface level soft skills and what I learned during my internship.

7. UVA EVALUATION

The current university course load is very heavily focused on technical skills, which undervalues the importance of soft skills and gives students the impression that they are not important. Moreover, even the computer science courses meant to focus on teamwork and simulate realistic work environment do not address the communication skills and troubles that students will run into in a real workplace. These topics can easily be incorporated into the course curriculum to better prepare students for success in their careers as computer scientists.

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