



10 Tips for Surviving and Thriving in Your Career as a Software Developer

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I. Why am I writing this article?

I love teaching students – that’s the best aspect of academia. Experiencing the success of my students regardless of whether they are graduating from High School or getting their BS, MS or PhD gives me so much satisfaction. When I teach my students Computer Science, off and on I also give them tips for career success. For example, in Fall 2022 I mentioned to them the top 15 reasons to do a PhD and subsequently wrote a motivational article and gave a Grace Lecture on this topic at the university. Then today, during my lecture on Analyzing and Securing Social Media, I gave them some useful tips on succeeding in their career based on my personal experiences. Since I have worked in the Commercial Industry, Federal Research Lab, US Government and Academia, I have gained a lot of useful insights on succeeding in one’s career based on my experience and how I overcame challenges. So here are my top 10 insights and they are in no particular order. Of course some are more important than others, but all are important for a successful career. The first three (#1, 2 and 3) are related to technical work, The next three (#4, 5 and 6) are related to organizational aspects. Tips # 7 and 8 are related to setting yourself apart and the last two (#9 and 10) are personal aspects that are important for professional success. I have given several examples from my experiences, some quite personal. I believe that unless I discuss my experiences, it would not be meaningful for me to write this article. Since the students in the class I taught today want to work in the commercial industry, this article is essentially focusing on succeeding in one’s career in the industry as a software developer. It should however be noted that my industry experience was in the 1980s. Nevertheless, I have stayed connected closely with various industries during my career through some projects. Finally, I assume that my students love Computer Science and that’s why they have chosen this subject for their education and career. One final note: when I say you or your in this article I refer to my students.

II My Ten Tips

1. At a minimum meet all the requirements of your job

First and foremost you must do the job you were hired for and give it your best. This means completing all you assignments (for example developing software modules and/or systems) and ensuring that they are error free. If you cannot do this then you will not survive in your job. Try to develop software efficiently and securely and learn all about software optimization .The goal is to develop as many lines of error-free and code as possible in a short space of time. This also includes testing and possibly integrating with the software modules of others.

2. Go over and above what is required.

So, now you have met all the requirements of the job. But so have many of your colleagues. They are all educated like you say with an MS in CS and work hard. Suppose there is a massive layoff in the company or there is a vacancy in the company with more pay and a promotion where one of the members of your team is eligible to apply. Who will your manager recommend? This is where the extra work comes in. If you have not only finished all your work on time, but you also ask for more assignments that are important or you help out your coworkers to finish their work, then you are not the one who will likely be laid off. Furthermore, if you are the one who has performed the best over and above what is required, then you are the one who will likely be recommended for the promotion. Finally, it is also important that you make suggestions to your boss and coworkers on how to improve the software development activities and provide them with new ideas that would give your company an edge. We are living in a global world today and the competition is extremely stiff. Therefore,

anything you can do to make your company stand out from its competition will very likely be appreciated by the senior administration.

3. Learn, Learn, Learn

Computer Science is evolving rapidly. With the advances in AI and tools like ChatGPT, practically every industry is being revolutionized. Therefore, you must keep up with the developments, understand the new technologies and also apply them to your industry, It is not business as usual anymore. As companies adopt the latest technologies they are going to be attacked. There will be a several fold increase in cyber-attacks Therefore, while you learn and apply the new technologies you also need to develop cyber defenses. Even the AI algorithms are subject to attacks. These challenges give you opportunities to learn and solve the challenging problems. This would set you apart from your colleagues. You have to find that extra so that you can have an edge. Learning will always help you in whatever you do. As they say, “learning is a lifelong process”.

4. Teamwork and Collaboration with Colleagues

Now, we come to teamwork and collaboration. As they say, “it takes a village to raise a child.” Similarly, it takes a team to have a successful project outcome. Typically in industry, we work on large system developments projects. I remember my first industry project back in 1983 where I was part of a 50 member team to develop one of the earliest networking products. Each of us had our part of the software to develop, but everyone’s software had to work together for us to release the product on time. This meant each of us had to work with a team of say 4 or 5 people to make sure that our component/module worked with theirs. Then each of them had their team (that would include me) to make sure his/her component worked with other components. This meant we had to develop our component on time and make sure we tested with the interfacing components of others. It can be a lot of fun working together. Back in the 1980s, while we had some remote computing facilities, we still had to work late into the night some days in the computer center running huge mainframes so that we could carry out integrated testing. I thoroughly enjoyed my work and I was still in my 20s then and so had full of energy.

5. Have a “Yes we can” attitude.

One of the most appealing features of an employee is a “Yes we can” attitude. Not only should the employee be positive about the work and help as much as possible to enhance the organization, he/she should also ensure that the team has a positive attitude, This is not easy to achieve. However with the right motivation and incentive it can be achieved. Wherever I have worked; my colleagues have said “you have so much energy.” It is not the energy that comes with youth as I am 68 years old. It is an energy that comes with an extremely positive attitude; something I have had as far as I can remember. I still look forward to the future enthusiastically even though it is likely that I will not have more than around 12 years of productive work left in me (of course health permitting). I look forward to every single day. I do realize that life is full of twists, turns, and adversities. The challenge is to adjust one’s goals sometimes on a daily basis. So, in summary, motivate yourself and motivate your team. Try your best to have a win-win situation for all. Yes, something’s got to give. But don’t have one person give all the time while others take. It has to be a shared vision with shared responsibility. And finally it goes without saying being laser focused while working and being super organized is a must to thrive in one’s career. Also, you need to be consistent in your work and be disciplined.

6. Boss, Coworkers, Office Policies, Mentors

While the first three tips focused on technical work such as software development and the next two on organization, now we get the EQ (Emotional Quotient). It is critical that you control your emotions at work, This does not mean you have a stiff upper lip. Showing emotions is normal. However, please do not lose your temper or rant and rave at work (or for that matter at home). I have found that once you lose your temper you have lost what you tried to achieve regardless of whether at work or home. Especially at work, once you lose your temper you are regarded as a neurotic or crazy especially if you are a woman and that could result in being denied promotions and other rewards. So you have to try

your best to have a good relationship with your boss and coworkers. Your boss is essentially the company for you. So, you must get on with him/her and make him/her look good to his/her superiors. If your boss is not reasonable you have to try your best to point out why it is not possible to achieve what he/she wants. Please do not lose your temper, you must be calm. Despite all your attempts, if your boss is still not reasonable, then you must do something (e.g., talk to his manager) provided you have a backup plan such as a transfer in your company or a new company. This is not a trivial decision and so you have to think long and hard. Coworkers are another issue. There are some nasty co-workers who could undermine and backstab you. You have to be one step ahead (more like several steps ahead) and anticipate what they are up to. Try your best to build a support system so that your colleagues will support you and speak on your behalf if you are not there. This is what I did in the early to mid-1990s when a jealous coworker who had little technical talent played politics to undermine me. He/she did not succeed as I was much smarter than him/her and developed a great support system. And last but not least do not get involved in idle gossip and office politics. Sometimes you will have no choice but to take sides. Please don't say I want to be neutral. Carefully think whose side you want to be on. Weigh the pros and cons and especially who is more sincere with you. One more important point, you must have a mentor at work. Someone senior you can talk to and who can teach you about the company culture and how to move forward. I cannot overemphasize the importance of a mentor. I have given several keynote addresses more recently at technical conferences on the importance of having a mentor. By the way, I would not be where I am today without my great mentor the late Prov. CV Ram from UC Berkeley.

7. Effective Communication and Writing

Now we get to the extra activities needed for a successful career. I cannot overemphasize the importance of effective communication and writing. It is essential that you communicate your ideas effectively in simple language. First consider writing skills. You have to be to the point whether it be emails or design documents. It is something I still need to work on even after 43 years of work. I tend to write a lot more than needed. My advice – practice practice practice. And whatever you write review it a few times. It then becomes second nature. Effective communication is even more important as we speak a lot more than we write. First gauge your audience. If it is your boss or co-workers, keep the communication as they say, “short and sweet.” My mother had a remarkable ability to say what was needed and to the point and never a word more than she should. Unfortunately, I did not learn it from her. But when it comes to presentations I believe I am second to none. Fortunately, I had taken classes in Speech and Drama and Effective Speaking from the time I was around 9 until I was 16 while growing up. That is still helping me. However, I was also quite reserved when I was younger and so could not put what I learned into action. But over time I started talking to small audiences (e.g. presentation at work) and learnt how to be more effective. I started getting invited to give keynote addresses in 1994 and today I have given over 200 keynote addresses and am considered one of the more effective speakers in my field. I am not at all anxious when I stand in front of an audience and the larger the audience the more confident I get. Now, I had the advantage of getting coaching when I was young. Few have such opportunities. All I can say is again practice practice. Listen to great speakers on YouTube. Take classes if you need coaching. Attend Toastmasters club. Also, start giving talks with smaller audiences like at work and small conferences and that would give you the confidence to talk to larger audiences.

8. Dress for the Part

So now you and your colleague have performed very well at work, get along with your boss and coworkers, exceptionally good at communication. So what sets you apart from him/her. This is where you have to dress for the part (role). It does not mean you have to be a fashion model when you are a software developer or managing software developers. Of course dressing is different for men and women. Being a woman I know a lot about women's fashion. I was quite formal in my dressing until I turned 60 when I started relaxing a little. In any case I really don't like going to work in torn jeans and a T-shirt. Even if you are a software developer, you need to wear business casual clothes. If you are in

management then I believe a suit is a must for a man or woman. Unfortunately, you have to pay a lot for well-cut suits that complement you. However, I spend little on clothes and accessories and get them on sales, but mix and match to look elegant. In fact one of my colleagues complemented me saying that she was with a group of women colleagues and they said, “Bhavani is the most elegant Computer Science professor.” But I am not at all creative in dressing and unable to be effortlessly elegant like some women, especially European women. So over the years I have developed my own fashion sense and makeup to look respectable at my age. Again dressing is personal and you have to develop your own sense of fashion but make sure you dress the part at work.

9. Make sure you have a good personal life.

So, now we come to personal aspects and I am writing mainly as a woman. Harvard Business Review had an article which stated that if you cannot find a spouse to support you in your career, then remain single. This is true for both men and women – especially for women. Traditionally it's the women who have supported their husbands. Supporting a wife in her career is a more recent phenomenon starting in the late 20th century. I strongly believe in this as if I had not married my husband not only would I not have had a great and fulfilling career but I would not have gotten my graduate education. He was supportive of my career and likewise I have been supportive of his. Yes, there have been issues as my husband is extremely organized and has a strict routine which I found extremely hard in the beginning (mine was an arranged marriage). But over time we began to understand each other and it has worked well (touchwood). I have written many articles about how I combined career with marriage and motherhood and so I will not elaborate on this further. So in summary, a solid and supportive marriage is essential to survive and thrive in your career, Otherwise, as the HBR article states, do not get married. We are now in the 21st century and one (man or women) need not get married to have an understanding partner and possibly children, especially if you want a great career – it's a personal choice. Although I have been brought up in a fairly conservative environment where marriage is important especially for a woman, but over the years I have gotten educated and believe that a high paying career is a must especially for a woman, and I would say supersedes marriage.

10. Maintaining Health

Maintaining good health is the most important tip for a glorious career. If you lose it, you lose it all. Health includes physical and emotional aspects. For physical health we have to do what has been preached for over two decades and that is diet, exercise, sleep. I try to maintain a good diet but have a terrible weakness for vanilla ice cream, milk chocolates and half and half milk. I am fortunate I don't have health issues except minor ones here and there. But I need to take control. I do work late into the night but try to get at least 6 hours sleep by waking up a little late. I could do better with exercise after the pandemic. Then comes the emotional part. Here I practice daily meditation, relaxation and breathing and that helps me a lot. It is critical that you are well physically and emotionally so that you can concentrate on your work. Concentration is necessary for surviving and thriving in your career.

III What next?

There is so much more I can write on this topic more tips and examples. For example, some articles have said playing golf or tennis with your boss could be a plus as some business deals at the golf club.. I did not write about such topics as I do not have personal experiences playing golf or tennis (although I enjoy watching sports on TV). I also wanted to keep this article fairly short so that the reader will not stop reading halfway. It takes so many people to support you to get your career going – from parents to teachers to spouse/partner to managers to colleagues. It's important to build healthy relationships with all of them. One thing is a must – with competition being so stiff with a global workforce, you have to excel in what you do and go over and above your job description to get to the next level. Discuss your career goals with your boss but don't get obsessed about them. Have a positive attitude. Get your home life in order. And yes, you need your health. One thing I value most in my career is having that strong support system. I do hope you will get at least one new idea from this article that you use for the benefit of your career.