Path to a Career in Cyber – Part III

By Gary Hayslip

In the first two parts in my series, a "Path to a Career in Cyber" and a "Path to a Career – Part II" I explained how I got into IT and found my passion which is Cyber Security.

I also discussed how I built my lab in my garage and how I used it to learn about new technologies and to study for my professional IT certifications. A large part of that process, of laying out my Cyber Certification Map and keeping track of what experience, certifications or education I needed for my chosen career field was done using certain web sites and professional organizations.

In continuing this discussion I am going to talk about websites I use to this day to educate myself on new technologies or learn new skills that are required in my field of employment. I also am going to discuss additional websites and software tools I would recommend you add to your skillsets and knowledge of IT and Cyber Security.

By now you should realize I am very big on the fact that if you work in the field of Cyber Security "continuous education" should be your mantra. In the field of Cyber Security the technology, new hardware & software solutions, threats and much more are always changing.

Due to this field encompassing a large number of industries, you will need to understand that you can never know everything. However, that shouldn't stop you from educating yourself to be the elite Cyber Security professional that you want to be. The point I want to make is education doesn't stop, stepping on this path is just the beginning.

So as a refresher, back by popular demand from "Path to a Career in Cyber and More" here again is the "Cyber Career Path Workflow" chart again, keep it in mind as we finish up this third article on how to use the last of my recommended tools to map out and manage your path to a career in Cyber Security.
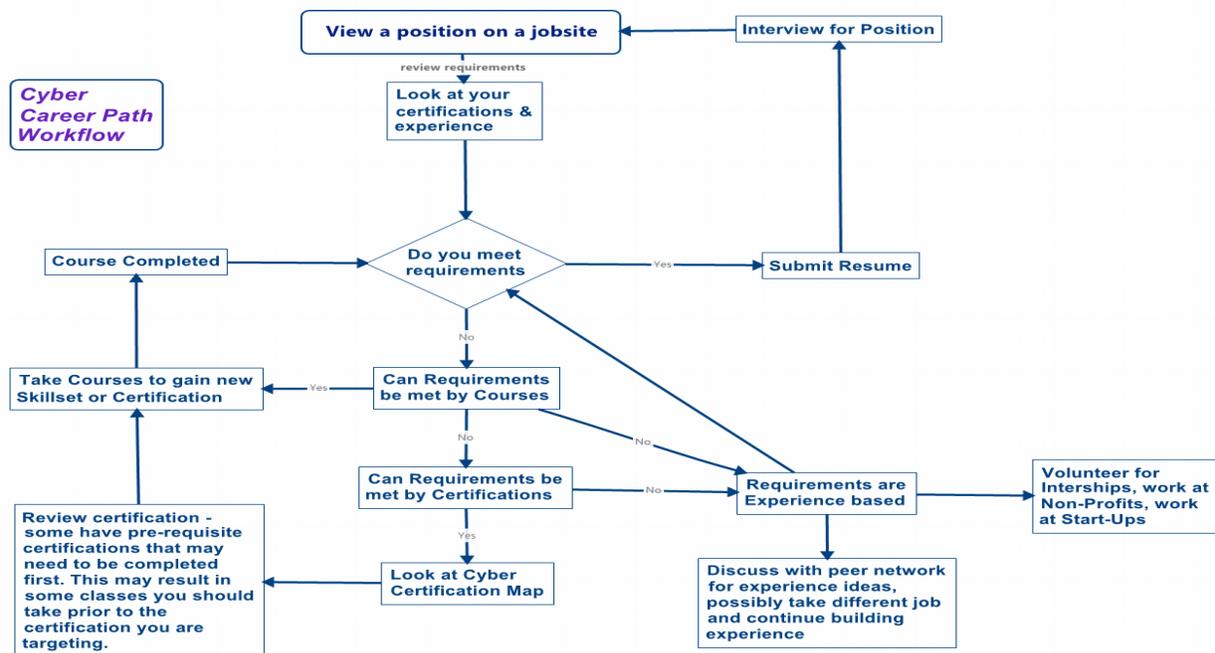
As we get started, don't forget this article (like the previous ones) is written with the IT/Cyber Security scene of San Diego, California in mind. San Diego has a vibrant IT and Cyber Security industry.

I use it as an example throughout these articles to share with you the types of websites and organizations I recommend you look at in your area to help you begin you're starting point for your path into IT and possibly, if you want, a career in the field of Cyber Security. The first two articles we discussed:

- Certification Maps
    - World of Cyber
    - Cyber Career Map
    - Cyber Career Map - My Career as an example
- Employment Research & Networking Ideas

In this third and final article we will discuss:

- Education Sites & Tools

As I have stated before, I am by no means an expert. This article is based on my experiences over the last 25+ years in the fields of IT and Cyber Security. So with that said, let's have some fun!

- **Education Sites & Tools**

In this last discussion we will cover some sites for education and a couple of sites that have useful tools that I have used over the years to recertify or increase my knowledge of new technologies. We will start with education sites. I am first going to list some adult education sites located here in San Diego as examples of schools where you can go to work on a certification or learn a new skill. I have found many of these two-year colleges and adult education facilities to have excellent labs for working for example on Cisco certifications or the latest Network/Cloud Security certifications. So let's take a look at a couple of such organizations in San Diego, and similar ones in your area and see what courses they offer.

1. http://www.sdce.edu/ - for the San Diego area this site is great. You can get free classes in IT including your CCNA. Just sign up for it and put in the time. Under the Jobs Training/Certificate Programs tab http://www.sdce.edu/job-training/computers they have programs for "Interactive Media," CCNA, A+, CCNA – Security, and Web Server Maintenance and Security. Under the Programs tab select "Business, Computers and IT" http://www.sdce.edu/classes/computer-classes and you will get the full list of courses that are free and available for you to take. Even with a MBA I like to occasionally look at this site to see what classes are available. I would recommend if you are starting out to take some of the beginning computer classes to get your feet wet. What is nice about schools like these is that they are a very inexpensive way to get your basic certifications completed and into an entry level position as we continue to work on that Cyber Career Map.
2. http://extension.ucsd.edu/studyarea/index.cfm?vAction=certificates - this is the University of California San Diego (UCSD) extension program's web page and from this site you can scroll down and go through the certificate programs they have to offer. These courses cost money but they are relatively cheap compared to paying for a full college class. Many colleges now offer extension type courses or certification tracks that include multiple courses covering a specific area. It is a good way to get some quality education and training to beef up a skillset you need for the "future job."
3. http://www.codecademy.com/#!/exercises/0 - this is great place to go learn how to code for free. You can do projects and learn how to program in JavaScript, HTML/CSS, PHP, Python, Ruby, and build API's. Even though I work in Cyber Security I have taken numerous classes. You will find that if you want a long career in IT you will eventually need to learn a language and this is a great place to learn for free.
4. https://www.coursera.org/ - another site for some free or low cost training but you will need to buy your books. There also are some courses that are available and if you want them to count as college credit you can pay a fee. I have done classes in Cyber Security, Cryptography and Mobile Cloud Apps. On this site one school, the University of Maryland, is offering a group of courses that result in a Cyber Security

certificate. I would recommend this site if you enjoy doing classes online at your own pace and don't mind the challenging curriculums. Just remember to keep up with your assignments and enjoy talking with your classmates.

5. https://www.edx.org/ - this is another education site I keep an eye on as I have noticed they have added more Computer Science courses. I am always looking to increase my knowledge in the field we work in so I like to see what they have available. This site is very similar to Coursera. The classes are free and if you want them to count there is a minimal fee.

6. http://www.lynda.com/ - hands down one of the best training sites on the web. For $30 a month you get full access to all of the curriculum and files so you can train and learn numerous skills. I use this site all the time to brush up on skills when I am doing presentations or to learn how something was created because I am curious. I would highly recommend this site to you if learning in an online format works for you. Again there are numerous classes in coding and software development plus they are adding new curriculum including business classes all the time.

7. http://teamtreehouse.com/ - this is the last education website that I recommend. It is fairly new and the curriculum is still being developed. What I find intriguing on this site is you select a specific track that you want to learn, which is made up of sequential courses that by then end are supposed to have taught you a specific skill. Very nice but it costs $25 per month for a basic subscription and $49 per month for the pro subscription that includes extra content. It is definitely a site to watch as they add new content.

8. http://ddosattackprotection.org/blog/cyber-security-blogs/ - this website is actually an article. It lists the Top 100+ Cyber Security Blogs and to a surprising degree it is fairly accurate. I list it as a tool for you to help educate you on the various professionals that work in Cyber Security. I actually each week make my way down the list checking out many of the sites for new information to educate myself on new threats or technologies that are becoming prevalent in the business world. Several I would recommend to start with are:

> http://nigesecurityguy.wordpress.com/
> http://www.securitycurrent.com/
> https://cloudsecurityalliance.org/
> http://krebsonsecurity.com/
> http://www.wireshark.org/
> http://www.darkreading.com/
> https://www.eff.org/
> http://www.securityweek.com/
> http://thehackernews.com/

9. http://distrowatch.com/ - as you pursue a career in Cyber Security eventually you will need to learn the Linux operating system. This site has information about hundreds of different Linux distributions. This site is important because if you want experience it's time to roll up your sleeves and start learning how to download and install your first Linux distribution. This site also has links to weekly newsletters and can keep you up to date on Linux, just don't get overwhelmed. Pick a flavor of Linux like CentOS or Ubuntu that is mature and stable and enjoy!

10. http://sectools.org/ - this is one of the last websites I will recommend and that I have used it over the years as it has aged. However, that said the site lists links to many of the best network security tools available. It tells if the tools have costs associated with them and you can see if they run on Windows, Mac or Linux. For someone starting out in Cyber Security this is a good website to bookmark because I guarantee you will be coming back to it on occasion to find a tool or a link for more in-depth information.

11. http://www.boson.com/default?r=1 – the last web site I list is for Boson -- one of the best network simulator software tools that is available. They also do testing and exam simulation. Unfortunately this does cost money but I have used their product over the years to prepare for numerous exams or to simulate network designs prior to actually building them to ensure we had designed them correctly. I have been thoroughly impressed with their CCNP toolset and all of my Network Architects use it.

In conclusion, the main thing to keep in mind is just as I have said before you are starting on a path that will take time, you will not be a cyber-security professional overnight. I would recommend that you approach this in increments and over time you will be surprised at your progress.

First, I would take stock of what you education have completed, what IT knowledge you already know and what is your IT experience level. With this annotate it on Your Cyber Career Map and see where you, if you are at the beginning of the map don't worry about it as I was there myself at one time. The big thing to remember is now you have your starting point. Second, find out what IT Professional or Technical organizations are available in your area. Remember, this is so you can start working on building your peer network group plus this will help you get more information about IT career fields and help fine tune that Cyber Career Map of yours. Third, now that you have done that, let's do some research online into IT or Cyber Security jobs that are available in your area. Do you qualify for any entry level positions? Do you see a "future job" that you find interesting. If you do find a "future job" that is now your "goal" for your Cyber Career Map – it's your finish line. Add it to the map and we now need to fill in what it will take to get there (Cyber Career Path Workflow). So for our final next step let's look at what education or training curriculums are available to you. Do you like to do courses online? Are you more comfortable take courses in class? Not a problem, the thing to do here is to select a class that falls within the workflow to get you to your finish line.

I am sure you will find that you won't yet know all of the classes and experience required to fill in the steps in your Cyber Career Map and Cyber Career Path Workflow chart to get you to that "future job." This is where your peer network and the professional IT organizations come in to play. They will help you fill in those gaps. This is the same process I did years ago and once you do that you will find you now have the maps before you that lay out a path you can follow. Just remember these maps are living documents. You should be constantly watching the industry and talking to your peers to see if you need to change classes or certifications on your career maps to ensure they're up to date with the industry. As I have mentioned, if you want to work in the field of Cyber Security you will be going to school and educating yourself continuously. This field is not for those who want to do the "one-and-done." It a field for those who are curious, who are amazed at technology and the many twisted ways it can be used for both good and evil (plus some really cool stuff!).

With that I am going to end. I think I have given plenty of information to keep you busy for a while. As always I hope this has been useful and is of some value to you. If you need anything in the future don't hesitate to contact me if I can assist I will. Take care of yourself and welcome to the world of Cyber Security!