Southern New Hampshire University

7-1 Final Project Part 2

Professional Reflection

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Out of the four topics available (big data, robotics, cybersecurity, and Internet of Things), I decided to choose cybersecurity. Cybersecurity is hugely important in preserving and securing information for big companies such as Facebook, Amazon, E-bay, and even the government. As technology is constantly growing and is unlikely to cease any time soon, people and organization’s information are constantly at risk of being stolen. Criminals are frequently coming up with new ways to manipulate and steal data, so cybersecurity will always be an important role in the internet and technology. An example of a well-known breach of information is the Experian website breach from 2013-2015 that affected 15 million customers. Hackers stole user’s names, dates of birth, street addresses, Social Security numbers, and driver’s license numbers(“Krebs on Security”).

Security hazards range from SQL injection attack, denial of service, session hijacking, and so on. With the vast array of possible online hazards, cybersecurity will always be an important asset in the safety of internet users. Not only do we have forward attacking hackers, but also hackers who manipulate people into unintentionally giving away their personal information. Hackers use a technique called phishing, where users will input their information into a website that looks like a real, popular site, such as Facebook. They’re able to obtain usernames and passwords easily this way, and sometimes can get people to input credit card information. Cybersecurity isn’t just at the personal level, society needs to be properly educated in order to protect themselves. As long as hackers stay relevant, and people continue to be not fully educated on the risks, cybersecurity will always be an important role in society.

In order to have a career in cybersecurity, you will need to have a degree and sometimes a relevant certification (such as security +) and a lot of time and patience. Careers can also range from cybersecurity analyst, cyber risk threat analyst, computer network architects, database administrators, etc. In order to work in a senior managerial position, a master’s in business administration or computer science may be required. In 2015, more than 50,000 US jobs were posted by employers that wanted a CISSP designation, which requires you to pass a 250 question test that can take up to six hours(“Salary Outlook for Cybersecurity Analyst & Intelligence Careers + Jobs Outlook: Business Degrees 2019”). With this, it is also important to work your way up from an entry level position, and internships while in college. In conclusion, it can be a difficult road to become a successful cybersecurity analyst or architect, but it is an essential job in today’s society and future to keep people’s information safe while online.

I decided to focus on the topic of cybersecurity because it is an important part of keeping our information safe while online. This course focused on python, which is my main interest when it comes to computers and computer science, but that doesn’t mean I can forget about security in the programs I design. Cybersecurity and programming go hand in hand almost directly, because the code you write must be secure in order to develop an efficient program or software. People’s information is always at stake, and it could cause a major headache if you do not also study cyber security best practices and programming methods.

Cybersecurity is not what I want to do when I graduate with my bachelor’s in computer science, but I know I must stay up to date in internet security. I will continue to study cybersecurity alongside programming languages such as python. There are certifications you can obtain such as Security+ which would be majorly beneficial to a software engineer as it adds to their resume. I am considering furthering my studies in security and additionally obtaining certificates such as Security+.

Being proficient in data structures and how algorithms operate presents further opportunity to identify if the code you are working on is malicious, written poorly, or has errors. It may appear that the code has errors, but it could also show a vulnerability that could affect other programs or software. Being able to break down the data structures and algorithms will allow you to properly pinpoint the exact problem and know how to quarantine the issue or correct its code. Overall, data structures, algorithms, and cyber security all play very important roles in your career as a software engineer. Without these aspects and problem solving tactics, people’s information, computer devices, and lives could be infected and exploited by hackers or other forms of malicious persons.

References

“Krebs on Security.” *Brian Krebs*, krebsonsecurity.com/2015/10/experian-breach-affects-15-million-consumers/.

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