

A person wearing a dark hoodie is seen from behind, sitting at a desk in a server room. They are looking at several computer monitors displaying data and code. The room is dimly lit with a warm, orange glow from the screens and overhead lights. Cables and server racks are visible in the background.

CYBERSECURITY

INTO THE REALM



Scope of the realm



My Journey



Your Journey



Preparation



Securing a job



Staying relevant

Scope of the realm



‘Cybersecurity is the practice of protecting systems, networks and programs from digital attacks’

- Cisco



Physical security, Hardware security considered out of scope? Not at all! – The best digital security protocols can be rendered useless in the event of a physical attack



Often used inter-changeably or confused with ‘Information Security’. Information Security is the practice of securing information and information systems. Information systems need not be in cyber space. Cybersecurity aims to protect all avenues of weaknesses for data/information at rest and in transit; across devices and over a network.

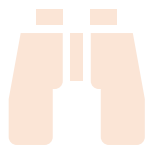
Scope of the realm – Contd.



➤ The following is a non-exhaustive list of specializations within Cybersecurity

- ✓ Digital Forensics
- ✓ Network Security
- ✓ Cloud Security
- ✓ Data Security
- ✓ Identity and Access Management
- ✓ Application Security
- ✓ Legal, Audit & Compliance
- ✓ Secure Software Development
- ✓ Physical Security
- ✓ Incidence Response
- ✓ Penetration Testing
- ✓ Malware Analysis
- ✓ Cryptography
- ✓ Vulnerability Research
- ✓ Security Engineering
- ✓ Threat Research
- ✓ Endpoint Security
- ✓ Threat Hunting
- ✓ Industrial Control Systems Security
- ✓ Security Operations

My Journey



2014 – Learned about CTFs from a stranger on Facebook. Picked up the book “Hacking: the art of Exploitation by Jon Ericson” – The beginning of a potential lifetime journey



2015 – Application Developer Coop. Read more books; focused on C & Assembly Languages. Identified relevant courses like B58, B09, C09, C69, D58, D27, 423

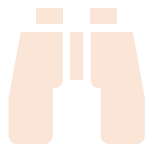
2016 – Explored online CTF events and wargame sites. Focused on Unix OS. Attempted the OSCP certification – bummed it but learned about gaps in my knowledge. Took D27 😊

2017 – Recognized the need for a physical community to ask questions and build network. Joined DC416. Focused on Penetration Testing and Digital Forensics

2018 – Took a project course with Prof. Thierry on Malware Analysis. Landed my first job as a Security Engineer at TD. Focused on Endpoint Security primarily Windows OS

2019 – Continued to explore Endpoint Security. Focused on Security Research. Started a blog. Landed my second job as a Vulnerability Researcher at Trend Micro

My Journey – Contd.



2020 – Continue to explore Security Research. Hopefully write more blogs and speak at conferences. Focus on Vulnerability Research for N and 0 –DAY Vulnerabilities

Lessons Learned

- Passion over everything
- There's room for everyone
- Networking is important
- No knowledge is too basic or complex to share. Share anyways
- If you snooze, you lose
- 'Failure' can be a necessary evil – embrace the possibility
- Burnout is a real thing

Your Journey



Who are you – what is your story?



It is too late already – No it is not! You are earlier than anyone in the future; and there is a future ;)



There is so much to learn – Yes of course and you learned so much of it already! baby steps...



Not enough time – Your phone screen time says different ;)



This is not for me – Please, spare a few minutes 😊



A successful journey requires



A strong foundation in programming, network stack, OS internals, system architecture, cryptography



A passionate, relentless and curious mind

19-Year-Old Makes Over \$1 Million Hunting Software Bugs

Argentina native Santiago Lopez is the first person to surpass \$1 million in rewards on HackerOne, a bug bounty platform that offers money in exchange for finding security vulnerabilities in IT systems from participating companies.

By Michael Kan March 1, 2019 1:25PM EST

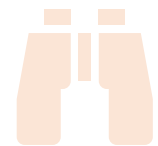


Everybody needs a hacker



MY OTHER COMPUTER
IS YOUR COMPUTER

Your Journey – Contd.



Identify your area(s) of interest



Arguably the most challenging aspect of the journey



What was your favourite topic in CSCD27H3?



Where is your foundation strongest?



A quick Google-ing would be sufficient to understand the details of the field



Another useful technique is to briefly browse related resources and see if any content sparks your interest. Visit the “So You Want to be a Hacker” link to learn more. There are other similar lists of resources on the web



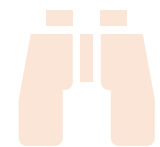
A researcher and trainer by the name ‘Azeria’ has written some helpful articles on this topic. Visit the “The Paradox of Choice” link to learn more

Click me

[The Paradox of Choice](#)

[So You Want to be a Hacker](#)

Your Journey - Preparation



Develop your area(s) of interest



Identify key resources and people



Set out time; a month, maybe two, maybe three – start with smaller periods



Read up and practice – lots of available offline and online environments



Document your work as reports, journals – this is the shareable part of your journey; your portfolio



Need help? Contact the author, a community or a mentor. State your problem, your attempts, your guesses – Give them something to work with



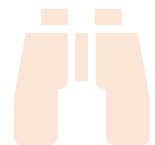
Time is up? Did you enjoy it? Need more time? Evaluate the outcome of the period. Re-evaluate the interest; devote more time or move on 😊 key resources and people

Click me

THE IMPORTANCE OF DEEP WORK & THE 30-HOUR METHOD FOR LEARNING A
NEW SKILL

The Process of Mastering a Skill

Your Journey - Preparation



Who you are



Your story

- What got you interested
- What keeps you interested
- This is your brand, own it. It keeps you unique



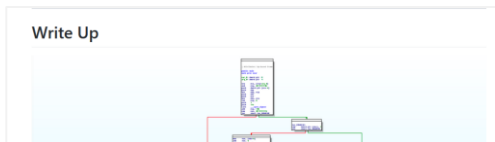
Your credentials

- Your CS degree is a good start and sufficient
- Certs are expensive, choose wisely
- Not required 😊



Your portfolio

- Talk is cheap – show me some work
- Sufficient in the absence of credentials
- Github repos, written and or published blogs, reports and write-ups
- Your CSCD27H3 deliverables 😊



o Section Headers (Optional)

An array of section headers. Optional because they are useful mainly to section headers may not be required. The structure of an ELF Section I

```
$ readelf --sections --wide /tmp/pwn-asm-Pek0cW/step3
There are 4 section headers, starting at offset 0x110:
```

Section Headers:			
[Nr]	Name	Type	Address
[0]		NULL	0000000000000000 0e
[1]	.symtab	SYMTAB	0000000000000000 0e

Windows Rootkits

Malware Analysis Report

University of Toronto Scarborough

CSCD94H3S

By Udonsi Kelechukwu (Kc)

Unto the breach Ep. 10.10.10.5

A quick nmap scan for up and running exposed services

```
root@kali:~/n33trix/htb/targets/10.10.10.5$ nmap -sT -A -sV 10.10.10.5 --nll scan.nmap
```

Your Journey – Securing a job



Do you recognize these companies? (Non-exhaustive)



amazon

Google



shopify



NETFLIX



THOMSON REUTERS™

How about these ones? (Non-exhaustive)



hackerone



RAPID7

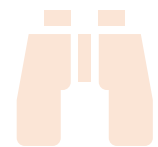
Security



esentire®



Your Journey – Securing a job



Benefits


 Cybersecurity skills shortage – You are in demand!

 Competitive pay, bonuses and incentives

 Flexible hours, possible shifts, full/partial remote work options

Success tips

 Be confident – not arrogant, friendly and respectful

 Your portfolio – You have done some prep work, flaunt it 😊

 Your greatest asset yet – your passion for the field and the job

SecTor 2019: Experts say more resources needed to meet cybersecurity skills shortage



Howard Solomon @howarditwc
Published: October 11th, 2019

8:53 PM

Wealthsimple is looking to hire a Security Engineer. No formal security experience required, just a strong motivation to learn and a competent programmer (we're predominantly

10:50 AM

Hello everyone. Cytelligence is growing fast and is now hiring cyber security consultants (all positions)! Go check it out: <https://cytelligence.com/about/careers/>
Please feel free to reach out to me for more details. Thank you!

9:07 AM

I have a Cloud Security (Devsecops) type role with a client of mine downtown Toronto. FTE permanent position. If anyone is interested they can DM me

11:12 AM

Hello Everyone, Any one want to join the next Unicorn in Cyber Security from Bay area. I have a Full-stack engineer position in with them. The candidate need to have a Cyber security background. You can either send me your profile @ or apply using the below link.

Your Journey – Staying relevant



Grow your network



Coffee chats, 1-on-1's



Online communities; Twitter, Slack channels, blog authors



Continuously upgrade your knowledge and skill



Humble Bundles



EC-Council



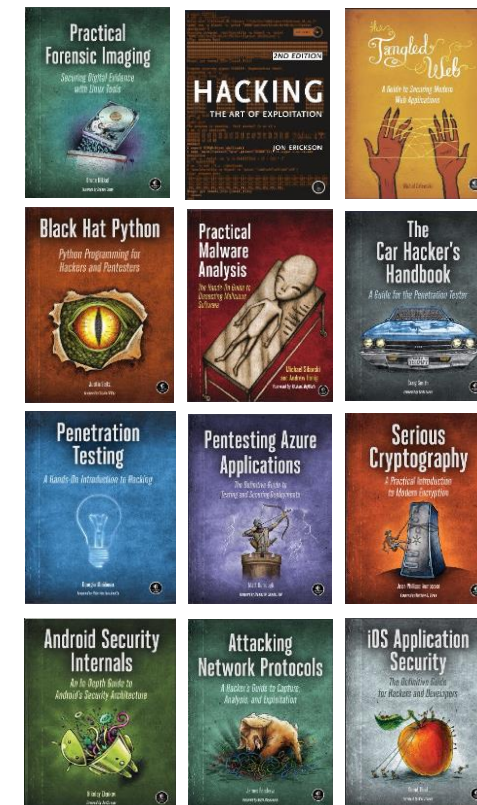
Online or Offline trainings and resources – free and paid



Give back to the community; share your knowledge



Keep abreast with latest industry trends, news, threat reports and research findings





QUESTIONS

Thank You