

EDUCATION

University of New Brunswick

Master of Applied Cybersecurity (MACSec)

Nanaimo, BC (Remote)

Sep 2020 - Aug 2021

- GPA: 4.2/4.3
- Research Intensive Cyber Knowledge Studies (RICKS) Program
- *Relevant Coursework:* CS6415 (Network Security), CS6355 (Cryptanalysis and Database Security)

University of British Columbia

B.Sc., Honours Computer Science, Minor in Mathematics (With Distinction)

Vancouver, BC

Sep 2016 - Apr 2020

- GPA: 91.2%
- Co-operative Education Program (16 months)
- *Relevant Coursework:* MATH 221 (Algebra), MATH 302 (Probability), MATH 312 (Number Theory)

University of Victoria

B.Sc., Undeclared

Victoria, BC

Sep 2015 - Apr 2016

- GPA: 96.2%
 - *Relevant Coursework:* STAT 260 (Probability and Statistics)
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EXPERIENCE

Bell Canada Nanaimo, BC (Remote) | Security Specialist

Jan 2022 -

- Developing and maintaining vulnerability assessment and security event notification service web applications within the Security Operations Centre (SOC)

Working with: Python, Docker, Django, PostgreSQL, OpenShift, Git, GitLab

Bell Canada Nanaimo, BC (Remote) | Cyber Security Intern

Sep 2021 - Jan 2022

- Researched, implemented, and tested solutions to mitigate credential stuffing attacks against IMAP servers
- Coded scripts to analyze threat intelligence data from previous attacks against Bell to gain insights
- Setup test IMAP server and ELK pipeline to ship IMAP authentication logs to Kibana dashboard to spot attacks

Worked with: Python, ELK Stack

Geering Up Vancouver, BC | Curriculum Planner, Workshops/Camps Instructor

May 2019 - Aug 2019

- Designed, tested, and instructed the curriculum for the junior high school software design camps
- Taught in-class STEM workshops in May/June and 10 week-long coding & software design camps in July/August

Worked with: Java, Processing/p5.js, Scratch

Grow Technologies Vancouver, BC | Junior Software Engineer

May 2018 - Aug 2018

- Created REST API endpoints to transfer data between backend and frontend
- Reported and resolved bugs and other issues from QA
- Refactored the product configuration data model defining Grow's banking products

Worked with: Java, Google Cloud Platform, Git, GitLab, Jira

Statistics Canada Ottawa, ON | Systems Development Programmer

Sep 2017 - Apr 2018

- Designed and coded algorithms for data parsing, normalization, and validation
- Implemented internationalization of the web app to support English and French
- Automated creation of data integrity reports

Worked with: Java, HTML, MS SQL Server, SQL

SELECTED PROJECTS

C ALRM GeekPeek 2021

https://github.com/ashleybarkworth/C_ALRM-malware-analysis

- Built the front end of a Vue/Flask web application which lets users upload suspicious files and aggregates the results from several malware analysis services into a single, comprehensive report

- Team received "Judges Special Mention/Coup de Coeur" award

Biometric Bot Detection

<https://github.com/ashleybarkworth/biometric-bot-detection>

- For my MACSec capstone project "Detecting Credential Stuffing Bots Using Behavioral Biometrics"
- Implemented system with Python to collect mouse and keyboard activity data in GUI app, extract features, and apply four supervised learning algorithms to classify user as human or bot

"Spotify"

<https://github.com/jarretthuang/Spotify>

- Coded Hibernate ORM queries and Java Servlets to build the backend of a MySQL database web application to access music tracks, artists, playlists, and track analytics

Give Referral VanHacks 2018

<https://github.com/givereferral>

- Part of team that built web application for baby apparel business letting them schedule meetings with clients
- Implemented REST API endpoints and webhook in Go to retrieve appointment information from Calendly API

PUBLICATIONS

- Beaman, C., **Barkworth, A.**, Akande, T. D., Hakak, S., & Khan, M. K. (2021). Ransomware: Recent advances, analysis, challenges and future research directions. Computers & Security, 111, 102490. <https://doi.org/10.1016/j.cose.2021.102490>

TECHNICAL SKILLS

- Areas of expertise: Cybersecurity, Backend Development, Mathematics
- Programming languages: Python, Java, SQL, HTML5, CSS3
- Tools: Wireshark, tcpdump, Git, Gitlab, Docker, PostgreSQL, MySQL

VOLUNTEER EXPERIENCE

- Mentor, UBC Tri-Mentoring Sep 2018 - Apr 2019
- Volunteer, UBC Technical Career Fair Sep 2018 - Jan 2019
- Member, UBC Department of Computer Science Program Experience Committee Sep 2016 - Apr 2017

AWARDS

- Stanley M Grant Scholarship, University of British Columbia 2018
- Trek Excellence Scholarship (top 5% of faculty), University of British Columbia 2017
- \$26000 Excellence Entrance Scholarship, University of Victoria 2015