

SEA RAN CLEON LIEW

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SKILLS

- Python, R, C, Java, SQL, Linux, Bash Script, Git.
- Machine learning and Deep learning: scikit-learn, Keras, TensorFlow, Pytorch, Cuda.
- Web Scraping: BeautifulSoup, Scrapy, Splash, Lua.
- Automation (Web, Android, IOS): Selenium, Appium.
- Networking: Wireshark, HTTP, DNS, TCP/UDP
- LaTeX, Cloud Computing (AWS), Microsoft Office (Power BI, VBA).

JOB EXPERIENCES

Engineering Research Assistant, University of Waterloo Dec 2023 – April 2024 Canada

- Researcher for the **FHIR encoding project** under Prof. Bryan Tripp at the Department of SYDE.
- Researched methods of encoding scalar-valued fields in FHIR data for transformers.
- Investigated if the encoding method of interest can model the "importance function" of a value.

AI Developer Research Assistant, University of Waterloo May 2023 – Dec 2023 Canada

- Part of the cancer research program of Prof. Subha Kalyaanamoorthy at the Department of Chemistry.
- Built various **deep learning-based models** using nerve cell images to **predict cancer metastasis**.
- Applied methods including **Machine Learning (SVM, Random Forest, VIT, ResNet, Inception), transfer learning, convolutional autoencoder, and various mixed approaches**.

Deep Packet Inspection QA Engineering Student, Nokia Sep 2022 - Dec 2022 Canada

- Leveraged **Python and Appium** to automate testing of traffic detection on Android and IOS platforms.
- Used **Wireshark** to inspect packets and worked in a Linux environment (Fedora).
- Tested whether the current **application filter** can capture the traffic of the application's core functions.
- Made sure different **Quality of Service (QoS) policies** can be applied to traffic of specific applications.

Data Validation Intern, Ontopical Jan 2022 - April 2022 Canada

- Utilized **Scrapy, Splash, and Lua** for building **web scrapers** that can crawl multimedia content.
- Used **Git, Bitbucket, Jira, and Confluence** for version control and project management.
- Followed a **Scrum framework** and had daily stand-up meetings and weekly Sprint meetings.

Assurance Practice Intern, PricewaterhouseCoopers May 2021 - Aug 2021 Hong Kong

- Performed tasks like detail testing, breaking down financial statements, categorizing different transactions, and explaining fluctuations of accounts across years.
- Used Excel and an auditing software developed by PwC called Aura to assist with the tasks.

Intern (Web Scraping & Deep Learning), Migrasia June 2020 - Aug 2020 Hong Kong

- Helped with **web scraping projects** and used **Selenium** for **browser automation**.
- Implemented **deep learning in Optical Character Recognition** with **CNN** to solve CAPTCHA code.
- Used Python packages such as **BeautifulSoup, NumPy, pandas, scikit-learn, and TensorFlow**.

EDUCATION

University of Waterloo Sep 2020 – June 2024 Canada

Computational Mathematics, Computing Minor (Cumulative GPA: 85/100)

PUBLICATIONS

Use of subword tokenization for domain generation algorithm classification 2023
Cybersecurity 6, 49 (2023). (<https://cybersecurity.springeropen.com/articles/10.1186/s42400-023-00183-8>)

- Created an integrated scheme consisting of the **subword-based deep-learning model** and the **machine-learning model** for better classification of domains generated by various DGAs.

BEAM - An Algorithm for Detecting Phishing Link (<https://ieeexplore.ieee.org/document/9979860>) 2022
S. R. Cleon Liew and N. F. Law, 2022 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC), pp. 598-604, doi: 10.23919/APSIPAASC55919.2022.9979860.

- Developed an attention-based phishing detector by performing sub-word tokenization and fine-tuning the Bidirectional Encoder Representation from Transformers (BERT) model.