

SEA RAN CLEON LIEW

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SKILLS

Programming Languages: Python, R, SQL, C, VBA, MATLAB, LaTeX

Libraries: scikit-learn, Keras, PyTorch, TensorFlow, Cuda, Hugging Face, NumPy, scipy, Pandas, Matplotlib, BeautifulSoup, Scrapy, Splash, Selenium, Appium

Technologies: Power BI, Tableau, Google Suite, Microsoft Office Suite, Excel (Pivot Tables, VBA, Macros), Git, Bitbucket, Jira, Confluence, AWS Batch, AWS CloudWatch, Jupyter Notebook, Linux, PuTTY, MobaXterm, Wireshark

EDUCATION

University of Waterloo

Waterloo, ON

Bachelor of Mathematics, Major in Computational Mathematics (Co-op), Minor in Computing

Sep 2020 – Jun 2024

- Cumulative GPA: 85/100; Graduated with Distinction
- Relevant Coursework: Designing Functional Programs; Elementary Algorithm Design and Data Abstraction; Data Types & Structures; Computational Statistics and Data Analysis; Neural Networks; Data Visualization; Applied Linear Models

WORK EXPERIENCE

Data Science Research Assistant

Waterloo, ON

University of Waterloo

May 2023 – Feb 2024

FHIR-Formatted Healthcare Data Encoding Project under Prof. Bryan Tripp

- Implemented **data encoding methods** such as Spatial Semantic Pointers and Sinusoidal Encoding in **Python** to enhance the quality of FHIR-formatted data inputs for the **NLP Transformer Model**, improving the model's accuracy by 10.7%.
- Cleansed, normalized, and structured FHIR-formatted datasets, optimizing them for model input using **SQL**.

Metastatic Cancer Medical Image Analysis Project under Prof. Subha Kalyanamoorthy

- Developed **machine learning models** for nerve cell image classification using **PyTorch**, achieving 78.28% accuracy.
- Applied **feature engineering, cross-validation, and hyperparameter tuning** to optimize **Computer Vision Models** such as **Vision Transformer, CNNs, ResNet, and Inception**.
- **Visualized model performance** using **R (ggplot2)** and **Matplotlib** to support research insights.

DPI Automation Data Analyst Intern

Ottawa, ON

Nokia

Sep 2022 – Dec 2022

- Automated network traffic detection QA for 20+ applications (Web, Android, iOS) using **Python, Selenium, and Appium**.
- Analyzed traffic detection data captured by 60+ application filters by performing packet-level analysis using **Wireshark**, submitting **bug reports** for 4 filters to improve classification accuracy and enforce proper Quality-of-Service policies.
- Scheduled recurring data collection tasks using **Linux Crontab**.

Data Quality Assurance Intern

Calgary, AB (Remote in Toronto, ON)

Ontopical

Jan 2022 – Apr 2022

- Developed over 50 web scrapers to aid the ETL process for multimedia data collection using **Scrapy, Splash, and Lua**.
- Executed web scrapers on **AWS Batch**, monitored their performance using **AWS CloudWatch**, collected and aggregated document type counts from each scraper post-execution, and leveraged **Power BI** to visualize document distribution trends.
- Did version control and task management within an **Agile Scrum** framework using **Git, Bitbucket, Jira, and Confluence**.

Financial Auditor Intern

Hong Kong

PricewaterhouseCoopers

May 2021 – Aug 2021

- Analyzed financial statements, identified trends and fluctuations to inform audit conclusions using dynamic reports in **Excel (Pivot Tables, VBA, and Macros)**, and created audit reports for 4 companies.

PUBLICATIONS

[Use Of Subword Tokenization For Domain Generation Algorithm Classification](#) Cybersecurity 6, 49 (2023).

[Beam - An Algorithm For Detecting Phishing Link](#) 2022 APSIPA Annual Summit and Conference, pp. 598-604.