SEA RAN CLEON LIEW

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EDUCATION

University of Waterloo Waterloo, ON
Bachelor of Mathematics Sep 2020 – Jun 2024
Major in Computational Mathematics; Minor in Computing
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

WORK EXPERIENCE

Artificial Intelligence Software Development Research Assistant Waterloo, ON
University of Waterloo

FHIR Data Encoding Project under Prof. Bryan Tripp Dec 2023 – Apr 2024
- Researched methods of encoding FHIR-formatted data to enhance transformer model performance
- Implemented methods (e.g., Spatial Semantic Pointers, Sinusoidal Encoding) to model the "importance function" of values

Metastatic Cancer Imaging Project under Prof. Subha Kalyaanamoorthy May 2023 – Dec 2023
- Developed deep learning programs using PyTorch to process nerve cell images, achieving a 78.28% classification accuracy
- Applied models like SVM, Random Forest, Vision Transformer, ResNet, Inception, Transfer Learning, and Convolutional Autoencoder, using cross-validation and hyperparameter tuning to optimize performance and ensure robust predictions
- Optimized and trained models on Compute Canada's High-Performance Computing (HPC) clusters

Deep Packet Inspection Quality Assurance Intern Ottawa, ON
Nokia Sep 2022 – Dec 2022
- Automated traffic detection testing for over 20 Web and Mobile applications using Python, Selenium, and Appium
- Tested over 60 application filters to ensure proper capture of application traffic and application of Quality of Service policies
- Inspected network packets using Wireshark to troubleshoot and verify the performance of the traffic detection system

Data Quality Assurance Intern Calgary, AB (Remote in Toronto, ON)
Ontopical Jan 2022 - Apr 2022
- Developed over 50 custom web scrapers using Scrapy, Splash, and Lua to support the Extract, Transform, Load (ETL) process for collecting and organizing multimedia content from various sources
- Tested web scrapers in AWS Batch and monitored their performance with AWS CloudWatch
- Leveraged Git, Bitbucket, Jira, and Confluence for version control and task management within an Agile Scrum framework

Assurance Practice Intern Hong Kong
PricewaterhouseCoopers May 2021 - Aug 2021
- Conducted detailed testing and analysis of financial statements using Excel (VBA and Macro) and PwC's auditing software Aura, identifying trends, fluctuations, and discrepancies to inform audit conclusions

SKILLS

Languages: Python, R, SQL, C, Java, Bash, Lua, HTML, CSS
Machine Learning: scikit-learn, Keras, PyTorch, TensorFlow, Cuda, Hugging Face
Web Scraping and Automation: BeautifulSoup, Scrapy, Splash, Selenium, Appium
Collaboration Tools: Git, Bitbucket, Jira, Confluence, AWS Batch and Cloudwatch
Others: Linux, Putty, Wireshark, LaTeX, MATLAB, Matplotlib, Tableau, Power BI, Excel (VBA, Macros), NumPy, Pandas

PUBLICATIONS

Use Of Subword Tokenization For Domain Generation Algorithm Classification
Cybersecurity 6, 49 (2023). (https://cybersecurity.springeropen.com/articles/10.1186/s42400-023-00183-8)
- Integrated scheme consisting of subword-based models for better classification of domains generated by various DGAs

Beam - An Algorithm For Detecting Phishing Link
2022 APSIPA Annual Summit and Conference, pp. 598-604. (https://ieeexplore.ieee.org/document/9979860)
- Developed an attention-based phishing detector by performing sub-word tokenization and fine-tuning the BERT model