

Nolan Kurylo

☎ (403) 809-2980 [in](#) nolan-kurylo [G](#) nolankurylo [G](#) nolankurylo.github.io/ [✉](#) kurylon@telus.net

Software Engineer with a focus in Machine Learning and 3+ years of experience in Object Oriented Programming for Python and C++, in a Linux environment. 3+ years deploying scalable applications on AWS under microservices architecture. Experience leading other software developers in Agile and Scrum based environments.

Education

Bachelor of Software Engineering (Co-op - BSEng)

University of Victoria

GPA – 3.9/4.0 (8.3/9.0)

Sept. 2017 – Aug. 2022

Specialization in Machine Learning, Artificial Intelligence, and Data Mining and Analysis

Skills

- **Programming Languages** – Python, C, C++, MATLAB, Java
- **Database Engines** – SQL: PostgreSQL, MySQL, NoSQL: MongoDB
- **Machine Learning** – Deep learning, computer vision, NLP, transfer-learning
- **ML Tools** – TensorFlow, Keras, PyTorch, Scikit-Learn, HuggingFace, Pandas, NumPy, Matplotlib
- **Cloud Computing** – AWS for DevOps, scalability, and CI/CD; Google Colab GPU/TPU training
- **Other** – Jenkins, CMake, Git, Linux/Unix, Docker, OOP, data structures and algorithms, Kafka, Redis
- **Workplace** – Agile, Scrum, Kanban, Jira, Confluence, Wekan, ZenHub

Professional Experience

Machine Learning Engineer – Salyx Medical

January 2022 – Current | Victoria, BC

- Built a medical-grade machine learning application to predict arterial blood pressure (ABP). Signal processing and feature extraction of photoplethysmogram (PPG) recorded signal
- Achieving Systolic MAE of 4.5 mmHg and Diastolic MAE of 3.1 mmHg (same error range as cuff)
- Deployed as a microservice on AWS Lambda for maximum usability and interoperability

AI/ML Engineering Intern – Convergence Concepts Inc

August 2021 – January 2022 | Vancouver, BC

- Developed an enterprise-level ML application to identify relevant content on webpages, using a multi-channel neural network: metadata, embedding layer and an NLP BERT transformer
- Achieved proficient 90% validation F1 results, trained on over 100,000 examples
- Communicating with clients to translate business requirements and understand data sources
- Deployed high-quality predictive models; used by 10,000+ merchants and publishers

Software Engineering Team Lead – Inventu Research

September 2020 – August 2021 | Victoria, BC

- Led 10 developers amongst embedded electronics, web, and mobile app departments, mentoring in software design and collaborating to help create solutions for a userbase of nearly 1000

- Met 100% of project milestones through leading weekly meetings and organizing technical design
- Designed CI/CD architecture using pipelines and branching strategies for automation of distributed systems
- Applying Test Driven Development and Agile Software Development Life Cycle to optimize workflow by 50%

Embedded Engineering Co-op – Ergonomyx Technologies Canada

May 2020 – September 2020 | Victoria, BC

- Developed an embedded system that provides physical, voice and remote control of company's fitness desk product. The smart device technology achieved protection under a US Patent
- Integrated high quality applications with Web, iOS, and Android departments via Bluetooth/Wi-Fi. Consulted with the end user to address recommendations and improved feedback by 90%
- Collaborate with CEO and CTO, delivering presentations, resulting in prioritization of new projects

Project Experience

- **AWS Day Trading System** – A distributed system via various AWS EC2 instances, secured in a VPC. Applying software scalability through an application load balancer and auto instance scaling.
- **Duck Hunt AI** – Applying transfer learning via ResNet, MobileNet and YOLO for object detection on a custom dataset to shoot animated ducks in varying sceneries. Achieved 0.95 mAP with YOLO model.
- **AI MNIST Pipeline** - Developed an articulate ML life cycle with a user interface: data acquisition, EDA, preprocessing, model training, and deployment. Achieved 0.03 categorical cross-entropy loss
- **IMDb Rating Prediction System** - Used Neural Networks, Decision Trees and Random Forests to predict movie ratings on a scale from 0 to 10 with a regression MAE value of 0.68. Involved EDA, data processing and modeling of Kaggle datasets
- **Machine Learning Models Exploration** – Implemented Perceptron, ID3 Decision Tree, K-Means Clustering, and Naïve-Bayes algorithms from scratch to evaluate their performance/ metrics and to investigate the reliability with their corresponding ML library functions

Accomplishments

- | | |
|---|------|
| • SGI Corporate Scholarship | 2019 |
| • Alexander Rutherford Scholarship for Academic Excellence | 2017 |
| • University of Victoria Entrance Scholarship for Academic Excellence | 2017 |

References

- **Cristian Najera** – AI Engineer, Convergence Concepts, Vancouver BC
- **Tim Fitzgerald** – Operations Lead, Stantec, Calgary AB
- **Sergio Perez** – Engineering Lead, Ergonomyx Technologies Canada, Victoria BC

*Contact information available upon request

*More detailed project descriptions and code available at <https://nolankurylo.github.io/>