

Nolan Kurylo

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Education

Bachelor of Software Engineering (Co-op - BSEng)

University of Victoria

Cumulative GPA – 3.9/4.0 (8.3/9.0)

Sept. 2017 – Aug. 2022

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

Skills

- **Programming Languages** - Python, C, C++, MATLAB, Java
- **Databases** - PostgreSQL, MySQL, MongoDB
- **Machine Learning** - Deep learning, time-series forecasting, NLP, transfer-learning, computer vision
- **Cognitive Tools** – TensorFlow, Scikit-Learn, XGBoost, HuggingFace, NLTK, Pandas, NumPy
- **Cloud Computing** – Deployment on AWS Lambda, ECR, S3, EC2; training on Google Colab GPU/TPU
- **Other** - Git, Linux/Unix, Docker, Object-oriented design, data structures and algorithms

Work Experience

Machine Learning Engineer – Salyx Medical

January 2022 – Current | Victoria, BC

- Building a medical-grade AI to predict arterial blood pressure (ABP) using a photoplethysmogram (PPG) signal being read from a chest-positioned sensor (cuff-less ABP prediction)
- Achieving systolic MAE of 4.5 mmHg and diastolic MAE of 3.2 mmHg – medical grade A
- Comparing between feature engineered data-ANN solutions and series data-RNN solutions

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 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 – September 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 to aid distributed systems
- Implemented Agile/Kanban 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%
- Collaborated with CEO and CTO, delivering presentations, resulting in prioritization of new projects

Project Experience

- **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 preprocessing 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
- **IOU Mobile App** – Invented an iOS app that calculates financial debt and maintains borrowed items in a PostgreSQL database providing real-time updates between users
- **Raspberry Pi Security Camera** - Using a Raspberry Pi, motion sensor and camera, uploaded a video of the detected movement to a webpage and sent an SMS summary in under 1 second

Accomplishments

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

References

- **Tim Fitzgerald** – Operations Lead, Stantec, Calgary AB
- **Cristian Najera** – AI Engineer, Convergence Concepts, Vancouver BC
- **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/>