


Nolan Kurylo

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 <https://nolankurylo.github.io/>



Education

Bachelor of Software Engineering (Co-op - BSEng)

University of Victoria

Cumulative GPA – 8.3/9 (3.9/4)

Sept. 2017 – Aug. 2022

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



Skills

- **Design** – skilled at designing object-oriented software applications and creating meaningful documentation. Proficient in developing clean, well-modulated code under the Pep8 standard
- **Software** – knowledgeable in a range of languages and databases: Python, C, C++, MATLAB, SQL, and No-SQL. Experience in building solutions in Docker, and CI/CD through Jenkins/GitLab/AWS.
- **Machine Learning** – competent in developing deep learning models, with experience in NLP transfer-learning and fine-tuning of pretrained models (ex: BERT, DistilBERT) and hyperparameter tuning
- **ML Libraries** – able to understand and work with Python libraries such as TensorFlow, Keras, Scikit-Learn, XGBoost, HuggingFace, SciPy, Matplotlib, Pandas, NumPy, etc.
- **Statistical Analysis** – Experienced implementing parametric and non-parametric testing techniques based on underlying data structures: ANOVA, Chi-Squared, Logistic Regression, etc.
- **Cloud Computing** – Working with and building advanced software infrastructure through AWS: familiar with AWS Lambda, ECR, S3, EC2, and CodePipeline
- **Workplace** – comfortable working in Agile/Scrum environments with a strong ability to self-learn under minimal supervision in both group and individual settings



Work Experience

AI/ML Engineering Co-op – Convergence Concepts Inc

September 2021 – Current | Vancouver, BC

- Designed and implemented an end-to-end machine learning application; data acquisition, EDA, data cleaning, feature engineering, feature selection, model training and model deployment.
- Using TensorFlow and HuggingFace for transfer-learning, constructed a multi-input neural network using embedding layers and a fine-tuned NLP BERT transformer to perform binary classification.
- Deployed AI solutions on AWS Lambda via Docker images which used S3 for data storage

Software Engineering Team Lead – Inventu Research

September 2020 – September 2021 | Victoria, BC

- Managed project milestones and individuals in web development, embedded electronics and mobile app development projects through Kanban methodology; planned and led weekly meetings
- Aided in ongoing projects and coordinated Google Home voice recognition data collection
- Implemented company Git branching structure and GitLab CI/CD pipelines for each repository

Embedded Engineering Co-op – Ergonomyx Technologies Canada

May – September 2020 | Victoria, BC

- Designed, programmed and tested embedded applications in C/C++ for ESP32 and Arduino
- Implemented Bluetooth, Wi-Fi, MQTT, ADC, UART/I2C protocols for microcontroller's peripherals
- Programmed hardware interrupts and OTA firmware updates within constrained memory

Full Stack Web Developer Co-op – Ergonomyx Technologies Canada

January – September 2019 | Victoria BC

- Via Agile: designed, tested and deployed a ground-up, full stack e-commerce website
- Implemented a REST Node.js API to serve front end applications for all departments
- Designed a PostgreSQL database and wrote queries to serve web and mobile applications



Project Experience

- **AI MNIST Pipeline** - Developed a user interface for an end-to-end ML pipeline: 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 ratings with a regression MAE of 0.68. Involved EDA, data preprocessing and modeling of Kaggle datasets.
- **Machine Learning Models Exploration** – From scratch, implemented various supervised and unsupervised algorithms: Perceptron, ID3 Decision Tree, K-Means Clustering, and Naïve-Bayes
- **IOU Mobile App** – Built an iOS app that allows friends to keep track of expenses with one another
- **Raspberry Pi Security Camera** - Using a Raspberry Pi, PIR motion sensor and camera, developed a security application that uploads a video clip of the detected movement to a webpage



Accomplishments & Interests

Accomplishments

- | | |
|---|-------------|
| • SGI Corporate Scholarship | 2019 |
| • Alexander Rutherford Scholarship for Academic Excellence | 2017 |
| • University of Victoria Entrance Scholarship for Academic Excellence | 2017 |
| • Honors with Distinction (High School) | 2013 – 2016 |

Interests

- AI Projects, Robotics, Stock Market
- Fitness, Hockey, Football, Cycling, Golf, Cooking, Reading (getting better at fantasy sports)



References

- **Sergio Perez** – Engineering Lead, Ergonomyx Technologies Canada, Victoria BC
- **Stephen Steel** – Franchise Owner, Benjamin Moore, Canmore AB
- **Joe Aiello** – President, EdgeTech Computing, Calgary AB

*Contact information available upon request

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