Kristin Wu

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EDUCATION

University of Waterloo
Sep 2020 – Apr 2025

Candidate for Bachelor of Computer Engineering
Waterloo, ON

- 4x Term Dean's Honours List, Yves and Cynthia Bled Women in Engineering Award, First in Class Engineering Award

SKILLS

Languages: Python • C/C++ • SQL • MATLAB
Libraries: pandas • NumPy • PyTorch • scikit-learn • OpenCV • Stable Baselines3 (SB3) • SciPy • pytest
Frameworks and Tools: Simulink • AWS • Azure • Jupyter • Flask • Git

EXPERIENCE

Machine Learning Engineer Intern
Jan 2023 – May 2023

NASA – Intelligent Control and Autonomy Branch
Cleveland, OH

- Currently implementing imitation learning and reinforcement learning with **PyTorch** and **SB3** to pre-train and fine-tune an ANN for a flight control systemin in order to reduce aircraft settling time during failure cases.
- Optimized training time by a factor of 10x by implementing parallel processing and TCP/IP protocol using **C** and **Python**.
- Built a fault injection framework using **Simulink** and **MATLAB** to test resilience of NASA's electric aircraft model.

Software Developer Intern
May 2022 – Aug 2022

SkyWatch – Image Processing and Machine Learning Team
Kitchener, ON

- Built ML pipelines in **AWS SageMaker** for data processing and model evaluation, which revealed biases in the training data.
- Improved recall by 2% of a ResNet cloud detector through image pre-processing (such as sliding window) with **OpenCV**.
- Used stubbing and mocking to intercept database calls and inject custom data using **pytest**, **SQL**, and NoSQL.

Software Developer Intern
Jan 2021 – Apr 2021

TRIUMF – Beam Physics Team
Vancouver, ON

- Trained a multi-class random forest model in **scikit-learn** to classify signal defects with an F-score of 89%, leveraging signal processing techniques (such as fast Fourier Transform and FIR filters) with **SciPy** for feature engineering.
- Designed and developed the front-end and back-end of a web-based platform in **Flask** for high-volume data labelling.

Data Engineer Intern
May 2020 – Aug 2020

PowerHub – Data Integrations Team
Toronto, ON

- Built automated ETL pipelines to MongoDB via web scraping for extraction and **pandas** for cleaning, saving 4+ hours/week.
- Used **Flask**, **SQL**, and **Azure** to create a dynamic web application for real-time monitoring of data from 100+ clients, leading to quicker identification and diagnosis of errors.

PROJECTS

Telescope Mapping | mapping-fyst.readthedocs.io

- Developed a **Python** package for simulating a space telescope's on-sky data acquisition and determining optimal observation times for your geolocation using Astropy, spherical trigonometry, and optics.

H4CK3R

- Created a **C++** text terminal game used in FMSS's STEM Olympics to challenge teams in web exploitation and cryptography.

HOBBIES & INTERESTS

Reading, Amateur Astronomy, Gaming, Competitive Ice Cream Eating