

# Rowan Torbitzky-Lane

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## Education

B.S. Computer Science - Minor in Applied Mathematics - GPA: 3.80

December 2024

## Skills

- |               |                          |            |
|---------------|--------------------------|------------|
| • PyTorch     | • Evolutionary Computing | • Firewall |
| • Python      | • SQL                    | • Numpy    |
| • C++         | • MATLAB                 | • Selenium |
| • Rust        | • Linux                  | • Pandas   |
| • Docker      | • CUDA                   | • Slurm    |
| • HuggingFace | • Anaconda               | • LaTeX    |
| • Django      | • Haskell                | • Nix      |
| • Godot       | • YOLO                   | • Clojure  |

## Experience

**Research Assistant** - *Center for Intelligent Infrastructure*

May 2023 - October 2023

- Calculate Optical Flow with MATLAB and C++ utilizing Slurm on campus HPC, reviewing the results manually by overlaying optical flow lines within the video to see the result
- Program new route within our Django server to accept user uploaded videos, adding each video frame to an Iframed VGG annotator
- Improve frontend with Typescript by programming a popup to select desired bridge photos to annotate, resulting in a minor speed increase due to less hassle selecting images
- Extract image features using OpenCV such as utilizing optical flow to predict annotations in subsequent video frames
- Perform Annotations for image segmentation Convolutional Neural Networks by drawing masks over 250+ images of bridges, resulting in saving my supervisor precious annotation time

**Data Science Co-Op** - *Hunter Engineering Company*

January 2022 - August 2022

- Achieve mAP50-95 of 97% with YOLO and PyTorch in license plate recognition problems
- Achieve Precision of 96% via timm's EfficientNet V2 on classifying bad data, resulting in an 10% increase in annotation efficiency
- Increase speed of data pipeline by automating our data downloading process, resulting in a 20% increase in annotation efficiency by using Selenium to automatically complete a form and extract data from the resulting email
- Design and containerize APIs with FastAPI and Flask within Docker, used to create endpoints within Azure
- Implement syntax formatting actions into internal Azure DevOps git repository ensuring up to par formatting
- Utilize Excel for data annotation involving writing macros to automate data exportation, allowing us to export all annotations at once rather than segment the excel sheet, resulting in a 7% increase in efficiency

## Personal Projects

**Self-Hosted Linux Server** - *SQL, YOLO, Docker, Firewall, Git, Nginx, CUDA*

January 2023 - Present

- Train small bird object detection Convolutional Neural Network in one night resulting in a mAP50-95 of 94%
- Troubleshoot problems when pointing domain name A records to proper IP address while ensuring router sends packets to correct LAN address, achieving a functional, WAN accessible website

**Rust Genetic Programming Framework** - *Polars, rust\_decimal, proc\_macro2*

March 2025 - Present

- Utilize test driven development philosophy involving writing unit and integration tests before the true implementation and catching 100+ bugs
- Write declarative and procedural macros for reduced boilerplate resulting in saving 1000+ lines of code and 10+ hours of repetitive work

## Invited Talks

*Genetic Programming in Python @ PySTL* [https://www.youtube.com/watch?v=ZzYi\\_j2IYuY](https://www.youtube.com/watch?v=ZzYi_j2IYuY)

September 18th, 2025

*Actix Web Framework @ STL Rust* coming soon

December 4th, 2025