# Ty Nasello

Candidate for BASc Mechatronics Engineering, 2026
University of Waterloo

(519) 980-0615
tnasello@uwaterloo.ca
*tynasello.com*
*github.com/Tynasello*
*linkedin.com/in/ty-nasello*

## Recent Projects

### Facial Expression Classifier
Github ↗

Python · PyTorch · NumPy · Pandas · Matplotlib
- Using deep learning to classify images of people based on their emotions.
- Created a convolutional neural network in PyTorch utilizing feature mapping to predict image labels.
- Employed transfer learning using pretrained ResNet-50 model to reach 65.5% accuracy on test data.
- Improved model performance by performing hyperparameter tuning and data augmentation.

### Food Delivery App
Live Link ↗   Github ↗

TypeScript · NestJS · PostgreSQL · React.js · GraphQL · Prisma · JWT · Docker · Jest · Heroku
- A food delivery app clone, allowing users to login, browse, and check out desired items.
- GraphQL API written in TypeScript using NestJS framework, and Prisma ORM.
- Application data stored in PostgreSQL database.
- React TypeScript frontend using Apollo GraphQL.
- JWT authentication protecting user/auth endpoints.
- Unit and end-to-end tests written for backend using Jest and Supertest.

### Full-Stack Blog App
Live Link ↗   Github ↗

Node.js · Express.js · TypeScript · React.js · MongoDB · JWT
- A full-stack blog application where users can view and interact with posts.
- Custom Node/Express REST API, interacting with MongoDB and serving React TypeScript frontend.
- API uses JWT's to authenticate users and allow access to protected routes.

### Competitive Programming Practice
Github ↗

- Github repository containing solutions to programming problems where I have learned and implemented algorithms, data structures, and optimization methods to solve problems.

### CV Builder
Live Link ↗   Github ↗

JavaScript · React.js
- An intuitive React web application to create your own CV/Résumé.

### Flappy Bird (Recreation)
Website ↗   Github ↗

Python · PyGame
- A recreation of the popular game Flappy Bird, written in Python using the PyGame library.

### Color Sorting Robot
Website ↗   Github ↗

C++ · Arduino
- Skittle-sorting Arduino robot programmed with C++. Micro servo motors implemented to seperate Skittles based on values read from color sensor.

### Arduino Robot Car
Website ↗   Github ↗

C++ · Arduino
- A robot car that performs certain maneuvers based on input from a Bluetooth terminal application.
- Optional autonomous mode using ultrasonic sensor.

## Work Experience

### Software Developer @MedMe Health

January 2022 - April 2022
*Employer Evalutation - Outstanding*

- Implemented new app features and bug fixes on React TypeScript frontend while leveraging a variety of frontend packages including Apollo GraphQL and Redux.
- Completed bug fix tickets on Java Spring Boot backend.
- Improved existing frontend systems and made tools to ease developer experience and outsource work to non-developers.
- Wrote unit tests on new React components utilizing Jest and RTL.
- Frequently made queries on PostgreSQL database housing pharmacy related data.

### Engineering Assistant @ZF Group

Summer 2021

- Shadowed a team of four engineers at an automobile assembly plant.
- Installed distance sensor to fix an existing issue of incorrect part installation.
- Worked on DRM (Disaster Recovery Mode) project that supplied five lines with backup systems in case of tool/module failures.

## Tools/Technologies

TypeScript\JavaScript   Git   Python
Node.js   NestJS   SQL   PyTorch
Express.js   React.js   GraphQL   C++
Java   Prisma   Docker   MongoDB
Jest   Redux   Heroku   Netlify
HTML\CSS

## Interests/Hobbies

Running   Basketball   Machine Learning
SWE   Fullstack   Nature