TY NASELLO

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SKILLS

- **Languages:** C, C++, JavaScript/TypeScript, Python, Assembly, Rust, Golang, Java, SQL, HTML/CSS
- **Software:** Docker, AWS, Postgres, NoSQL, GDB, Make, Node.js, React, Git

EXPERIENCE

Health Canada, *Full Stack Developer* Ottawa, ON (Remote) — Jan 2024 - Apr 2024

- Led the creation of multiple data visualization tools allowing Health Canada scientists and policy makers to view **contaminant exposure in the Canadian diet**.
- Improved time to visualization of over 100,000 lab/survey results by approximately **240-fold**, allowing rapid analysis and quicker trend discovery for scientific publications, regulatory changes, and industry/consumer guidance.
- Leveraged JavaScript and Python for data manipulation and calculations, and D3.js and HTML to build interactive graphs and responsive and efficient bilingual user interfaces.
- Collaborated with scientists to scope requirements, perform demos, and devise plans to improve user experience.

MedMe Health, *Software Engineer Intern* Toronto, ON — May 2023 - Aug 2023

- **Optimized resource utilization** of production databases by constructing a system to proxy and pool connections from serverless infrastructure, deployed on AWS ECS using the TypeScript CDK and Docker.
- Core member unlocking **new revenue source** by developing microservices in TypeScript and Python to stream millions of events per day from Postgres databases to customers using AWS (CloudFormation, Lambda, Kinesis).
- Enabled customers to **self-serve integrations** by implementing the company's first webhook API system using TypeScript and AWS (API Gateway, Lambda, Cognito).
- Increased developer productivity by writing a library providing reliable and customizable data for serverless testing.

Orbiseed Technology, *Software Engineer Intern* Toronto, ON — Sep 2022 – Oct 2022

- Engineered REST API endpoints with TypeScript, Express.js, and the AWS SDK, enabling insurance carriers to store, manage, and download AI-processed reports stored in MongoDB and AWS S3.
- Expanded front-end dashboards in React, allowing users to upload and interact with a variety of file types.

MedMe Health, *Software Development Intern* Toronto, ON (Remote) — Jan 2022 – Apr 2022

- Built pharmacist dashboard features using TypeScript, React, and GraphQL, for web applications empowering nearly **3000 Canadian pharmacies** to provide clinical services at scale.
- Developed form intakes in React **allowing Canadians to seamlessly book consultations and vaccinations**.
- Designed a tool increasing the efficiency of mapping patient PDFs, and outsourced the work to non-developers.

PROJECTS

Hobbyist OS github.com/tynasello/os Apr 2024 - Jun 2024

- Developed a **custom 32-bit kernel** and bootloader written in **C** and **assembly** for the x86 architecture.
- Implemented exception and hardware-based interrupt handling, context-switching and scheduling, and a memory management system encompassing virtual memory via paging, physical memory allocation, and heap management.

Event-Driven Microservices github.com/tynasello/event-driven-microservices Mar 2023

- Designed a warehousing system, leveraging Kafka for communication between Kubernetes-managed microservices.
- Implemented an **event-driven architecture** and built secured APIs in Golang, Rust, Java, Python, and SQL.
- Created a CLI in Rust to view events in the system and act as as interface for simulating real-world actions.

Facial Expression Classifier github.com/Tynasello/facial-expression-classification Apr 2022

- Constructed a convolutional neural network classifying human faces based on emotion using Python and PyTorch.
- Employed transfer learning, hyperparameter tuning, and data augmentation to enhance model performance.
- Conducted data manipulation/visualization using NumPy, Pandas, and Matplotlib, reaching a test accuracy of 66%.

EDUCATION

University of Waterloo Sep 2021 — Apr 2026 (Expected)
Bachelor of Computer Science, Honours Co-op (CGPA 89.9%) Dean's Honours List (W2023)
Relevant Coursework: Algorithms, Data Structures, Operating Systems, Compilers, Objected-Oriented Programming, Computer Design, Microprocessors, Numerical Computation.