Ty Nasello

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Experience

Software Engineer Intern Sep 2022 - Oct 2022 (ceased operations)
Orbiseed Technology Inc. - Toronto, ON. Employer Evaluation: **Outstanding**

- Implemented application features (with a focus on the back end) that enable insurance carriers and brokers to process and summarize documents more effectively and 6x faster than humans.
- Created/modified various REST API endpoints in an Onion Architecture, made client-facing front-end changes, and wrote unit and integration tests for new and existing code (**TypeScript, Express.js, React.js, MongoDB, Jest/Chai**).
- Leveraged numerous libraries such as InversifyJS (an inversion of control container) and mongoose, as well as tools like **Docker** and **AWS (Lambda, S3, and SQS)**. Learned how a **CI/CD** pipeline is constructed, and how services like AWS (ECS, ECR, CodePipeline), GitHub Actions, etc. can be utilized.

Software Development Intern Jan 2022 - April 2022
MedMe Health - Toronto, ON. (Employer Evaluation: **Outstanding**)

- Operated on the front end and back end of multiple web applications that enable pharmacists across Canada to manage and provide clinical services at scale.
- Implemented numerous shipped front-end features including new patient intakes and pharmacist modules. Completed back-end bug fixes, participated in Agile practices, and was an initial driver in unit testing new front-end components. (**React.js, TypeScript, GraphQL, PostgreSQL, Java, SpringBoot, Redux, Jest**).
- Improved existing front-end systems and designed a tool to expedite the process of mapping PDFs holding patient information stored in a PostgreSQL database. Said tool increased team efficiency and outsourced work to non-developers.

Projects

Clean Architecture Template – GitHub December 2022

- Created a template for a monolithic application that follows the **Clean Architecture** design philosophy. The repository offers a starting place for developers wanting to build their next project. The template adheres to SOLID design principles throughout and prioritizes modularity and loose coupling.
- The application consists of an API, and databases which are managed through Docker. REST controllers are guarded via JSON Web Tokens. Web sockets are configured to emit events to authenticated connections. End-to-end, integration, and unit tests exist throughout the application. (**TypeScript, NestJS, PostgreSQL, Docker**)

Facial Expression Classifier – GitHub July 2022

- Constructed a convolutional neural network (**CNN**) that classifies images of human faces based on their emotions.
- Employed transfer learning and performed both hyperparameter tuning and data augmentation to improve model performance, reaching a test accuracy of 65.5% (would've ranked top 5 in Kaggle competition). (**Python, PyTorch, NumPy, Pandas, Matplotlib**).

Food Delivery App – GitHub Demo April 2022

- Designed and built a fully-fledged clone of a food delivery app. Users can login, browse a variety of foods from different locations, add and manage their shopping carts, and checkout desired items.
- Constructed a GraphQL API to support CRUD functionality and user authentication, designed and implemented a multi-page front-end UI from scratch, wrote unit and integration tests, and hosted the application on Heroku and GitHub Pages. (**NestJS, TypeScript, React.js, GraphQL, PostgreSQL, Docker**).

Education

Candidate for BASc Mechatronics Engineering, 2026. CGPA: 3.97. **Expected Graduation: 2026**
University of Waterloo – Waterloo, ON.

- *Courses:* Algorithms and Data Structures, Linear Algebra, Digital Computation, Calculus II.

Other Projects: CV Builder, Full-Stack Blog App, Color Sorting Robot, Arduino Robot Car, Flappy Bird (Recreation).
Programming Skills: TypeScript/JavaScript, Python, Java, C++, SQL, C, C#, Swift.
Other: Git, Node.js, React.js, PyTorch, NestJS, Express.js, Docker, GraphQL, MongoDB, Jest, Redux, HTML/CSS.
Interests: SWE, Basketball, Running, Nature.