MICHAEL VYTLINGAM

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Education

University of Waterloo   Sept. 2017 – May 2022
Candidate for BASc in Mechanical Engineering, Artificial Intelligence Option   *Waterloo, ON*
- GPA: 88/100
- Coursera: Machine Learning by Andrew Ng (Stanford), Algorithms and Data Structures (UC San Diego)
- Relevant Courses: Co-operative and Adaptive Algorithms, Intro to Optimization, Numerical Methods, Statistics for Engineers, Microprocessors and Digital Logic, Project Management

Experience

Software Engineering Intern   May 2021 - Present
Snowflake - Data Exchange Team   *San Mateo, CA*

Machine Learning Engineering Student   Sept. 2020 – Dec. 2020
BlackBerry – QNX Open Source and Safety Compliance Team   *Ottawa, ON*
- Improving efficiency of **NLP-based** open-source license detection pipeline written in **Python** using **fastText**
- **Reduced file crawling time by 70%**, introducing **multiprocessing** and **multithreading**

Full Stack Developer Intern   Jan. 2020 – Apr. 2020
CryptoNumerics - Protect Team   *Toronto, ON*
- Built and shipped new features for cross-platform **Electron** app used for CSV dataset privacy protection
- **Led front end application overhaul**: added support for ES6, SASS, unit testing, and linting; **restructured Redux store** to handle application state only; **introduced React Hooks** and "container and presentational" **component pattern**
- Developed internal **report generation microservice** in **Java** based on Pentaho, consumed in all company products
- Enforced test driven development using **JEST**, **Spectron**, and **Azure DevOps CI pipelines** preventing regressions

Undergraduate Research Assistant   Sept. 2019 – Dec. 2019
University of Waterloo   *Waterloo, ON*
- Trained real-time object detection model of kitchen items using **Darknet's YOLO** for pasta-cooking robot in **Python**
- **Increased** model's pan detection **accuracy by 28%**, introducing **synthetic data** with improved labeling

Software Engineering Intern   May 2019 – Aug. 2019
Grain Discovery   *Toronto, ON*
- Utilized React, Redux, DeckGL and Express to build commodity trading, progressive web application
- Designed concise, well-tested functional components in **React** with emphasis on reusability and maintainability
- **Decreased local front end build time by 23%**, adding dependency and image optimization to **Webpack**
- Practiced **agile** and **scrum methodologies** in a fast-paced pre-launch startup environment

Software Engineering Intern   Sept. 2018 – Dec. 2018
ENGINEERING.com – ProjectBoard Team   *Toronto, ON*
- Worked extensively in Vue, Vuex, Go and MySQL on project collaboration platform with 2M+ monthly users
- Built dashboard to visualize user/content analytics in **Vue**, created RESTful endpoints using **Go** and **SQL**
- Wireframed and built new home and profile pages in **Vue** and **Vuex** with **overwhelmingly positive user feedback**

Technical Skills

Languages: Python (4 years), TypeScript, JavaScript, Go, MATLAB, Dart, Bash, C/C++, SQL
Frameworks: React, Redux, Vue, Express, JEST, Flutter, Electron, Gorilla MUX, Flask, Django
Datacentric: MongoDB, PostgreSQL, TensorFlow, Keras, GraphQL, Numpy, Pandas, Matplotlib, Seaborn, Sklearn
Tools: Git, Docker, Jenkins, AWS, Firebase, Jupyter Notebook, Postman, Figma, vim, VSCode, OSX/Linux/Unix

Projects

Handwritten Sudoku | *TensorFlow (Python), Keras, React (TypeScript), Flask, Jupyter*   Mar. 2020 – Apr. 2020
- Classic Sudoku with handwritten digit input. **Convolutional neural network** trained on MNIST with **98.5% accuracy**.

Business Management Dashboard | *Flutter (Dart), Firebase, Google Cloud Functions, Square* Jun. 2020 – Present
- **iOS/Android production app** commissioned by Toronto bakery to manage employees, sales and inventory at stores