Matthew Ng

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Education

University of Guelph Guelph, ON, Canada

Bachelor of Computing, Computer Science, GPA: 4.0 *September 2019 – April 2024*

- Relevant Coursework: Data Structures, Algorithms, Object Oriented Programming, Operating Systems, Systems Programming, Discrete Mathematics, Graphics, Mobile Computing, Software Engineering, Computer Science Thesis

Technical Skills

Languages: Python, C#, Go, JavaScript, C, C++, Java, HTML/CSS, Dart, SQL

Technologies: Node.js, React, .NET, Azure, AWS, GCP, MongoDB, JUnit 4, Flask, Flutter

Experience

Google August 2022 – October 2022

Software Engineer Intern *Waterloo, ON, Canada*

- Development of medical data processing tools in Go for the Google Cloud Platform Healthcare API team.
- Performed a complete rewrite of a medical protobuf data extraction package, significantly reducing technical debt for the team and improving upon extensibility by removing hard-coded data and utilizing more extensive graph traversal algorithms.
- Created and performed unit-testing on aforementioned package, resulting in over 90% code coverage.

Microsoft May 2022 – July 2022

Software Engineer Intern *Redmond, WA, United States*

- Back-end development of a highly requested project customization feature for the Microsoft Office Project team using C#.
- Reduced homepage file selection load times by an estimated 300% through implementing a pagination mechanism for the file retrieval API to improve performance of fetch workflows.
- Developed and performed extensive integration testing on a .NET RESTful API that automates the storing, retrieval, and creation of custom Microsoft Office Project files.

Microsoft September 2021 – December 2021

Software Engineer Intern *Vancouver, BC, Canada*

- Developed internal tools for a message passing mechanism that distributes asynchronous service health checking operations to 100+ Azure servers across the globe using C# for the Microsoft Office Planner team.
- Architected the porting of diagnostic software for use in highly secure environments that previously required manual diagnostic intervention, increasing maintenance efficiency by over 100%.

Distributive May 2021 – August 2021

Software Developer Intern *Kingston, ON, Canada*

- Full-stack development of software components, libraries, and documentation webpages for a distributed edge computing platform called the Distributive Compute Protocol using Node.js.
- Developed features and fixes that significantly improved the reliability, efficiency, and performance of the platform involving connectivity, payments, and security.

University of Guelph May 2020 – August 2020

Research Assistant *Guelph, ON, Canada*

- Worked with the School of Computer Science and Ontario Veterinary College for a research project funded by the Bill & Melinda Gates Foundation: Global Burden of Animal Disease.
- Developed an API that replaces numerous deprecated NGO agricultural data APIs and a data dashboard using Python, Flask, and Plotly Dash, aiding in securing approximately $300k in funding for the project in a funding proposal.

Projects

Undergraduate Thesis - Largest Necklace Algorithm *Python*

- Worked under Dr. Joseph Sawada at the University of Guelph to develop an original combinatorial algorithm that finds the largest fixed-content necklace in polynomial time, improving upon previous exponential-time algorithms.

Classic Simpsons Episode Suggester *JavaScript, Node.js, MongoDB*

- Full-stack webapp that recommends golden-era Simpsons episodes with a user rating feature.

Super Duper Compressor *C++*

- Implemented a file compressor in C++ using Huffman Coding.

Award & Extracurricular

Society of Computing and Information Science April 2020 – May 2021

Vice President, Internal. *University of Guelph*

North America Champion: Public Anthropology Writing Competition November 2019

Top paper out of 2500 contestants across 22 North American universities. *Hawaii Pacific University*