

# Matthew Ng

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## ⚙️ Skills

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

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

## 📊 Experience

### Google

*Software Engineer Intern*

May 2023 – August 2023  
New York, NY, United States

- Full-stack development of a permission synchronization feature for Google Docs, Sheets, Slides, and Drawings affecting 10,000,000+ users per month using Java and Javascript in the pursuit of modernizing and streamlining the user experience of Google Workspace.
- Engaged in the offline feature parity effort for the Google Docs Offline team, alleviating the workload for full-time engineers and strengthening consumer confidence in using Google Workspace products without an internet connection.

### Cisco

*Software Engineer Intern*

January 2023 – April 2023  
Ottawa, ON, Canada

- Contributed to the migration of the Cisco Managed Services Accelerator codebase from Java to Go, assisting in the extensive code migration process, as well as engaging in the product's end-of-life transition.
- Helped onboard team to a new product, Cisco Intersight, launching code investigations, conducting experimental tests, and writing documentation.

### Google

*Software Engineer Intern*

August 2022 – October 2022  
Waterloo, ON, Canada

- Rewrote a protobuf data processing package in Go for Google Cloud Healthcare API for the efficient search indexing of medical data, significantly reducing technical debt for the team and enhancing the extensibility and flexibility of the data compatible with the API.
- Utilized more comprehensive graph traversal algorithms in order to remove 10+ hard-coded data handling cases, enabling processing of custom medical data and drastically reducing the amount of maintenance needed for future data format standard updates.

### Microsoft

*Software Engineer Intern*

May 2022 – July 2022  
Redmond, WA, United States

- Back-end development and extensive integration testing of a new project customization automation feature, developing a .NET RESTful API that automates the storing, retrieval, and creation of custom Microsoft Office Project files in C#.
- Reduced homepage file selection load times by an estimated 300% by implementing pagination for the file retrieval API to improve the performance of fetch workflows.

### Microsoft

*Software Engineer Intern*

September 2021 – December 2021  
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 secure environments, doubling the maintenance efficiency of various software components across Microsoft.

### University of Guelph

*Research Assistant*

May 2020 – August 2020  
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 as part of a pilot project studying the economic effects of animal disease in Ethiopia.
- 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 \$300,000 in funding for the project in a funding proposal.

## ❤️ Projects

### Largest Fixed-Content 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.

### Game Mandem: Game Boy Emulator *C++, SDL2, Python*

- Nintendo Game Boy Emulator written in C++ that emulates a cycle-accurate version of the Sharp LR35902 CPU.

## 🎓 Education

### University of Guelph

*Bachelor of Computing, Computer Science, Cumulative GPA: 3.94*

September 2019 – April 2024  
Guelph, ON, Canada

- Extracurricular:** Vice President: Society of Computing and Information Science
- Relevant Coursework:** Data Structures, Algorithms, Object Oriented Programming, Operating Systems, Systems Programming, Discrete Mathematics, Graphics, Mobile Computing, Software Engineering, Computer Science Thesis, Compilers