

# Lucas Nogueira



Links | Inogueir.me | Inogueir@uwaterloo.ca | +1 226 978-5884

**Languages** | C++, Python, C, JavaScript, Go, Java, TypeScript, HTML, CSS

**Tech** | Docker, Git, React, MySQL, AWS, WebRTC, Node.js, MongoDB, Redis, Flask, Nginx, Jenkins

## Education

**University of Waterloo | Bachelor of Computer Engineering**

Sep 2018 - Apr 2023

Relevant courses: Data Structures & Algorithms, Database Systems, Computer Networks, Compilers

## Experience

**Software Engineering Intern | Coursera**

Mountain View, CA | Jan 2022 - April 2022

- Incoming Winter 2022 Intern with the Content Delivery team aiming to, soon, support and enrich the course experience of the +77 million registered students in the platform.

**Software Engineering Intern | Ross Video**

Canada (Remote) | Jan 2021 - Aug 2021

- Designed and implemented standardized inter-process communication mechanism to enable signaling among dockerized multimedia streaming microservices. Made it available to other developers through C++ SDK.
- Engineered multi-threaded media pipelines using C libraries to interact with GPU and perform hardware accelerated H264 video encoding/decoding, resulting in CPU usage drop by over 35%.

**Software Developer in Test, Infra | The Weather Network**

Canada (Remote) | May 2020 - Aug 2020

- Developed and dockerized Go microservices to concurrently process weather files, contributing to the deprecation of legacy C++ monolithic forecast engine that serves +4 million unique users.
- Performed geospatial queries on MongoDB to process coordinate messages from AWS SQS on ~8GB data sets of granular precision weather data leading to nearly 30% performance upgrade.
- Used Jenkins, Helm, and Kubernetes to standardize CI/CD deployment pipelines across multiple engineering teams, improving infrastructure maintainability.

**Junior Web Developer | AGF Investments**

Toronto, ON | Sep 2019 - Dec 2019

- Shipped several React components interacting with Java backend and SQL databases to handle request and transactions that impacted over 60 000 users.
- Implemented React into Java Spring to migrate off legacy JSPs and jQuery Plugins which reduced bundle size by approximately 15%.

**Teaching Assistant | University Of Waterloo**

Waterloo, ON | Jan 2019 - Apr 2019

- Taught and coordinated CS138, a first-year Software Engineering course introducing students to Data Structures and Object Oriented Programming in C++.
- Developed course website and Python scripts to automate tasks such as marking assignments.

## Projects

**Liteboard.io** | [Featured](#) | +300 stars on [Github](#)

**Tech Stack:** WebRTC, Redis, Node, Express, Nginx

- Built backend infrastructure capable of supporting multistream conferences with up to 50 participants.
- Implemented WebSocket-based chat rooms using Socket.io enabling exchange of messages and files between users.

**Arithmetic Expression Tree Simulator** | [Demo here](#)

**Tech Stack:** JavaScript, HTML, CSS

- A web app that recursively generates a tree structure representation of arithmetic expressions.
- Applied Dijkstra's Shunting-yard and Knuth's layout algorithm to parse arithmetic expression and to ensure branches will never collide, respectively.