Lucas Nogueira

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

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

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 | Ross Video Canada (Remote) | Jan 2021 - August 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 users messaging requests 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.

bWell | DeltaHacks VI | Github **Tech Stack:** React Native, Google Cloud

- A mobile app that enables users to track sugar intake through photos and audio recordings of snacks.
- Performed HTTP API requests and leveraged camera and audio capabilities of phone using React Native.

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.