# Keanu Liwongan

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## Education

University of Waterloo | Combinatorics and Optimization, Computational Mathematics, Computing Minor
2020.09 - 2025.12
**Relevant courses:** Computer design and organization, data structures and algorithms, object oriented programming, functional programming, linear programming, computational discrete optimization, graph theory, scheduling theory

## Skills

- **Languages**: Python, Rust, C++, C, Java, SQL, TypeScript, JavaScript, HTML/CSS,
- **Tools**: AWS, Docker, Terraform, Serverless Framework, Redis, Datadog, MongoDB, UNIX
- **Frameworks**: React, Node, Express, FastAPI/Flask, pandas, maturin, PyO3, Tokio.rs, FastAPI/Flask, OpenAPI, Nginx

## Experience

Milk Moovement | *Software Developer Intern*　　　　　　　　　　　　　　　2024.09 - 2025.04
- Predictive analytics and tools for milk supply chain for farmers, producers, and milk cooperatives across the US and Canada

Milk Moovement | *Platform Development Intern*　　　　　　　　　　　　　　2023.09 - 2024.05
- Implemented company-wide internal SSO solution for application dashboard using **AWS Cognito**, **React** and **TypeScript** to speed up developer login process by **100**%
- Automated entire developer onboarding process using **Ansible** and **Bash** scripting, including installing packages, **Docker** container configuration and automated **MongoDB** database loading, reducing onboarding time by **36x**
- Overhauled logging system of main application backend using a custom wrapper around **Winston** to speed up average log debugging time by **25**%
- Prototyped and launched new data generation service for business logic testing purposes using **TypeScript**, **DynamoDB**, **EventBridge**, **Terraform** and **Serverless Framework**

eSentire | *Software Developer Intern*　　　　　　　　　　　　　　　　　　　2022.09 - 2022.12
- Built integral microservices including authentication systems, multilayered database access and permission/rule managers using **Python** and **AWS Lambda**
- Worked on database abstraction layers built using **SQLAlchemy** and **Python** with sharding, repartitioning and custom cache population/invalidation properties
- Increased testing productivity by **30**% by automating deployment of complete end-to-end testing pipeline to sandbox using **pytest, Bash, AWS, Terraform, and Makefile utilities** as part of the **CI/CD** pipeline
- Fixed **50**% of hanging calls in **AWS Lambda** functions by creating an asynchronous timer interrupt framework using **asyncio** to await IO-blocking processes up to a certain time limit

Genellipse | *Team Lead and AI/ML/Data Scientist*　　　　　　　　　　　　　2021.09 - 2022.04
- Led team of four to successfully migrate existing POC code to working production code, per industry standards using **Python, AWS Lambda, Github Actions, and Terraform** by implementing **REST** microservices.
- Decreased calculation time by up to **1000**% by converting consolidated Excel spreadsheets representing industry-level insurance calculations into organized Python modules
- Created a comprehensive testing suite for unit testing custom modules by wrapping **pytest** around an abstract wrapper object that programatically reads tests from files and initializes pytest without explicit declaration.

## Projects

**Robyn** Asynchronous web server written in Rust for Python | *Open source*　　　2022.12 - 2024.04
- Prototyped standalone request validation schema mechanisms using smart caching techniques and OOP techniques in Python, while reducing cross-language latency and performance gaps on the Rust backend