

# Balaji Leninrajan



<https://github.com/BalajiLeninrajan> | bleninra@uwaterloo.ca | www.linkedin.com/in/balaji-leninrajan

## # Education

### University of Waterloo

Bachelor of Software Engineering

2023 - Present

Waterloo, ON, Canada

**Coursework:** FPGA design, Data Structures, Databases, Compilers, Formal verification, Computer Architecture

## # Technical Skills

**Languages:** Python, C, C++, Go, Dart, Ruby, Rust, Assembly, Scala, JavaScript, TypeScript, SQL, Bash

**Technologies:** Rails, React, React Native, Next, Flask, GraphQL, gRPC, Tailwind, Nginx, Envoy, Linux

Terraform, Git, AWS, RaspberryPi, PyTorch, TensorFlow, Pandas, Kubernetes

## # Experience

### Shopify | Production Engineering Intern | Edge Infrastructure

September 2025 - December 2025

- Deployed **Terraform-based Cloudflare WAF rules** to safeguard service migrations, **achieving 100% monitoring coverage** (up from 96.4%) and ensuring zero-downtime transitions across multiple critical services
- Accelerated **incident resolution** by utilizing **Prometheus** for metrics analysis and documenting recovery procedures in new operational playbooks
- Extended Shopify's Cloudflare **Ruby gem** to query custom hostnames and metadata
- Supported migration from **Nginx** to **Envoy**, including porting **Lua** scripts to **Go**, to improve edge routing

### Shopify | Software Engineering Intern | Communications Platform Team

January 2025 - April 2025

- Contributed to a high-scale communications platform using **React** and **Rails**, orchestrating **4M+ monthly emails** and push notifications across multiple Shopify services and teams
- Implemented an **approval workflow** system - PRs for emails - that empowers users in marketing automation to consistently send high quality emails, resulting in an **80% reduction** in faulty campaigns due to human error
- Designed a **polymorphic Rails concern** for approval workflows, **abstracting shared logic** across multiple models, **reducing duplicate code** and **improving code maintainability**
- Optimized error monitoring by implementing intelligent **Bugsnag** filtering and categorization, reducing non-actionable alerts by 70% and **improving incident response time**

### YTY Group | ERP/Web Development Intern

May 2024 - August 2024

- Engineered an employee attendance prediction system using **Tensorflow** and **Pandas** for data preprocessing, improving HR planning capabilities and reducing administrative workload
- Created a **Flutter**-based expense claims **mobile app** with offline functionality and persistent login, reducing submission time and improving accessibility

### Waterloo Aerial Robotics Group | Autonomy Lead

January 2024 - Present

- Led a team of **10+ software developers** that contributed to **back-to-back victories at AEAC** 2024 and 2025
- Increased search area coverage efficiency by developing a **multi-drone pathing system** in Python with **peer-to-peer networking**, enabling **parallel operations** through continuous position sharing and collaborative area partitioning
- Improved **code reliability and team productivity** by establishing robust **quality control processes** including pytest-based **CI/CD pipelines** and systematic **code reviews**

## # Projects

### Maram | Rust, Git, Zellijs

- Built a **Rust** CLI that automates **git worktree** management for parallel feature experimentation
- Integrates **Zellijs** to instantly provision isolated terminal workspaces for each branch variant
- Implements logic to **diff** and **cherry-pick** changes across worktrees without manual git operations

### Linguini | TypeScript, React, Next.js, tRPC, Tailwind, PostgreSQL

- Built a **multiplayer** word-guessing game (like Wordle) with group leaderboards and **real-time progress tracking**
- Developed the main **game loop** on the frontend, ensuring smooth **state management** and responsive gameplay
- Implemented **tRPC routers** for authentication, user management, and group management

### TapCode | Flutter

- Engineered an **accessibility**-focused **Flutter** application that converts speech to haptic **morse code** patterns using Flutter's vibration API
- Integrated **Google Gemini** for text optimization, reducing transmission time while maintaining message integrity
- Implemented bi-directional translation between speech and morse code, enabling **two-way communication** for users with **visual or auditory impairments**