

# Jonas Groening

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## EDUCATION

### University of Michigan, Ann Arbor

*B.S.E, Computer Science*

August 2022 - May 2026

*Ann Arbor, MI*

**GPA:** 3.99/4.00 | **Activities:** V1, UM Autonomous Robotic Vehicle

**Coursework:** Data Structures & Algorithms, Data Driven Systems, Theory of Computation, Discrete Math, Linear Algebra

## EXPERIENCE

### Courier Health

*Software Engineer Intern - Data Ingestion Pipeline*

September 2024 – Present

*New York City, NY*

- Engineer a metrics system for the data ingestion pipeline using TypeScript, tracking duration, success rate, integrity, etc. in AWS RDS (PostgreSQL) and write comprehensive Jest tests to ensure reliability.
- Deploy a GraphQL API as an AWS Lambda for metrics retrieval and visualize using React, providing critical pipeline observability and diagnostics, bringing failure investigation time from 10+ minutes down to <60 seconds.

### Vectra AI

*Software Engineer Intern - Backend Performance*

May 2024 – August 2024

*Austin, TX*

- Piloted scalable event-driven architecture for high workload tasks with Python and Celery, cutting AWS costs by 25%, halving CPU and memory allocation, and eliminating the need for 13 Kubernetes cronjob deployments.
- Minimized concurrent Celery broker and backend connections by optimizing pool sizes, lowering memory footprint by 34% for AWS ElastiCache (Redis), 10% for AWS RDS (MariaDB), and driving down cloud compute costs.
- Leveraged Terraform to orchestrate AWS S3 Access Point integrations and visualized time-series bucket usage data through Grafana, providing process-level cost observability and identifying areas for expense reduction.

### CriTech Research

*Software Engineer Intern - Patient Analytics*

May 2023 – August 2023

*Saline, MI*

- Shipped redesigned endpoints for a medical patient portal using C# and .NET Core, removing unnecessary MySQL queries and accommodating a 10% growth in compliance data requests.
- Optimized API reliability by adding 100% coverage tests (unit, integration, blackbox) to a CI pipeline, saving ~2 hours of manual testing weekly and providing high service availability.

### UM Autonomous Robotic Vehicle

*Software Engineer - Sensors*

September 2022 – May 2023

*Ann Arbor, MI*

- Deployed temporal, jitter, and transformative filters for an IMU sensor in C++ and Python to clean inputs for a SLAM (simultaneous location and mapping) algorithm, reducing noisy data by 40%.
- Implemented a robust Python logging system using Pub/Sub architecture to monitor robot metrics in real-time and alert engineers of potential errors, resulting in a diagnosis of malfunctioning sensors.
- Led architectural design reviews and communicated decisions across teams to ensure system reliability.

## PROJECTS

### Beehive | C++, FFmpeg, Multithreading | [GitHub](#)

- Engineered a cross-platform screen recording and streaming tool using C++, leveraging FFmpeg to encode and push video to an RTP server in real-time (60+ frames per second) or write to disk in multiple formats.

### quarry.video | NextJS, Python, Django, Go, Terraform, MongoDB | [Visit](#)

- Architected a full-stack app with NextJS, MongoDB, and Prisma, providing a robust in-browser interface for short-form content generation, video editing, and data visualization.
- Leveraged Python to build a reliable FFmpeg wrapper for the video processing pipeline, built with Django.
- Authored and deployed a centralized logging service using Go, allowing the team to find and track anomalies.

## SKILLS

**Languages:** Python, C++, Go, JavaScript, TypeScript, Rust, SQL, C#

**Technologies:** Git, Linux, Docker, Kubernetes, Terraform, Redis, MariaDB, MongoDB, Makefile, Django, NextJS, React

**Interests:** Soccer, Hiking, Cats, Investing, Video Games