

Jonas Groening

jonasg@umich.edu | [jonasiwnl.github.io](https://github.com/jonasiwnl) | linkedin.com/in/jonasgroening | github.com/jonasiwnl

EDUCATION

University of Michigan

B.S.E., Computer Science

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

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

Fellowships: SIG Discovery Day - Technology

Ann Arbor, MI

Graduating May 2026

SKILLS

Languages: Python, C++, Go, Typescript, Rust

Technologies: Git, Linux, Docker, Django, Flask, NextJS, MySQL, MongoDB, Terraform, Postman, Makefile

EXPERIENCE

Vectra AI

May 2024 – Present

Software Engineer Intern

Austin, TX

- Pilot scalable event-driven architecture for high workload tasks with Python and Celery, improving fault tolerance, eliminating intermediate cron jobs and database tables, slashing latency by up to 80%.
- Architect OAuth 2.0 support for the in-network product API using Python and Django middleware, clinching a customer deal by complying with their security requirements and solidifying system integrity.
- Leverage Terraform to orchestrate AWS S3 Access Point integrations and visualize time-series bucket usage data through Grafana, providing process-level cost observability and identifying areas for expense reduction.

CriTech Research

May 2023 – August 2023

Software Engineer Intern

Saline, MI

- Shipped redesigned endpoints for a medical patient portal using Python and Flask, 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.
- Collaborated with Senior Engineers to migrate backend infrastructure to Azure App Services, Blob Storage, and MySQL Database using Terraform, cutting hosting costs significantly and improving app uptime to 99.999%.

UM Autonomous Robotic Vehicle

September 2022 – May 2023

Software Engineer - Sensors

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

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 and Django to build a reliable FFmpeg wrapper for the video processing pipeline.
- Authored and deployed a centralized logging service using Go, allowing the team to find and track anomalies.
- Automated deployment through a CI/CD pipeline built with Terraform and GitHub Actions, reducing manual testing and allowing features to reach production quicker.

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.

Embedchain | [Python](#), [ChromaDB](#), [PyTest](#) | [GitHub](#)

- Contributed Python features to create and reset multiple AI “brains” using ChromaDB collections.
- Iteratively improved code quality through open source maintainer feedback. Integrated extensive unit and end-to-end tests with PyTest for each feature.