

Jonas Groening

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EDUCATION

University of Michigan

B.S.E, Computer Science

Graduating May 2026

Ann Arbor, MI

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

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

Fellowships: Susquehanna International Group, LLP (SIG) Discovery Day - Technology

TECHNICAL SKILLS

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

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

EXPERIENCE

Vectra AI

Software Engineer Intern

May 2024 – Present

Austin, TX

- Leveraged **Terraform** to migrate platform AWS S3 bucket interactions to use Access Points and visualized time-series bucket usage data by service through **Grafana**, providing visibility and identifying areas for cost reduction.
- Piloted scalable event-driven architecture for the notification system with **Python** and **Celery**, eliminating intermediate batch jobs, database tables, and latency and improving fault tolerance.

V1

Platform Engineer

January 2024 – May 2024

Ann Arbor, MI

- Designed and wrote a club member-to-alumni connection request feature using **NextJS** and AWS Simple Email Service. Persisted connection status data in Supabase using the **Typescript** ORM.
- Held weekly design meetings with members to gather feedback and iteratively refine the project.

CriTech Research

Software Engineer Intern

May 2023 – August 2023

Saline, MI

- Released redesigned endpoints for a medical patient portal using **Python** and **Flask**, reducing 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 99.9+%.

UM Autonomous Robotic Vehicle

Software Engineer - Sensors

September 2023 – Present

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 with other 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**, **Docker**, 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.