Jonas Groening

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Education

University of Michigan Graduating May 2026
B.S.E, Computer Science *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 May 2024 – Present
Incoming Software Engineer Intern *Austin, TX*

V1 January 2024 – May 2024
Platform Engineer *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 May 2023 – August 2023
Software Engineer Intern *Saline, MI*

- Engineered a **Python Flask** API to receive and process ECG scans, generating PDF reports and compliance data for seamless viewing by medical professionals and patients.
- 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 availability.
- Collaborated with Senior Engineers to migrate backend infrastructure to **Azure** App Services, Blob Storage, and MySQL Database using **Terraform**, cutting service costs by $50k/year.

UM Autonomous Robotic Vehicle September 2023 – Present
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 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 RTMP server in real-time (60+ frames per second) or write to disk in multiple formats.
- Created retroactive video creation feature, allowing the previous ∼2 minutes of screen capture footage to be saved to disk spontaneously.