

Jonas Groening

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EDUCATION

University of Michigan, Ann Arbor

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

Graduating May 2026

Ann Arbor, MI

EXPERIENCE

Courier Health

Incoming Software Engineer Intern

September 2024

New York City, NY

Vectra AI

Software Engineer Intern

May 2024 – August 2024

Austin, TX

- Pilot scalable event-driven architecture for high workload tasks with Python and Celery, cutting AWS costs by 25%, halving overall CPU and memory usage, eliminating cron job infrastructure, and reducing latency by up to 3x.
- Design and implement methods to reduce concurrent connections from Celery to AWS Elasticache (Redis) and RDS (MariaDB), lowering memory footprint by 34% and driving down cloud compute costs.
- 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

Software Engineer Intern

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.
- 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

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

Distributed Filesystem | *Go, Networking, Concurrency, Read-write locks* | [GitHub](#)

- Built a distributed concurrent network filesystem, utilizing read-write locks for maximum efficiency, RPC calls to enable network communication with clients, and UDP sockets for automatic discovery.

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, Django, Flask, NextJS, MySQL, MongoDB, Terraform, Postman, Makefile

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