Jonas Groening

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Education

University of Michigan Ann Arbor, MI

B.S.E, Computer Science

GPA: 4.00/4.00

Coursework: Programming and Data Structures, Discrete Math, Linear Algebra, Multivariable Calculus

Technical Skills

Languages: Python, Go, Javascript, Typescript, C#, C++

Frameworks: NextJS, React, Django, .NET, Flask

Developer Tools: Git, Linux, Docker, Terraform, MySQL, MongoDB, Redis, Postman

Experience

Software Engineer Intern May 2023 – August 2023

CriTech Research *Saline, MI*

- Shipped 3 new endpoints for a medical patient portal using **C#** and **.NET**, reducing unnecessary API requests and accommodating a 12% growth in interactions.
- Engineered a **Flask** API using the **Python** OpenCV library to combine x-ray images into an interactive 3-dimensional model, enabling medical professionals to analyze bone anomalies.
- Optimized API availability by adding 100% coverage tests (unit, integration, blackbox) to a CD pipeline, saving ∼2 hours weekly.

Software Engineer August 2022 – May 2023

UM Autonomous Robotic Vehicles *Ann Arbor, MI*

- Developed a **ROS2** node in **Python** to accurately read, process, and publish IMU sensor data.
- Implemented a robust logging system using publish/subscribe architecture to monitor robot metrics in real-time and alert the team of potential errors.
- Deployed temporal and jitter filters for the IMU sensor in **C++** to clean inputs for a SLAM (simultaneous location and mapping) algorithm, reducing noisy data by 50%.

Projects

Quarry.video January 2023 – May 2023

- Pioneered a custom ORM adapter for **MongoDB** that improves session data retrieval times by over 5 seconds.
- Architected a fullstack tool with **Next.js**, providing a robust interface for in-browser video editing, data visualization, and user authentication.
- Leveraged **Python**, **Django**, and **RabbitMQ** to build a task queue system for the video processing pipeline, reducing API latency by 20%.
- Authored and deployed a centralized API logging service with **Go** and **Typescript**, allowing the team to find anomalies more frequently.
- Automated deployment with a CI/CD pipeline built with **Terraform**, **Docker**, and **GitHub Actions**, reducing manual testing and allowing features to see production quicker.

Embedchain | *Open Source Contributor* July 2023 – August 2023

- Shipped a **Python** feature to create multiple AI "brains" using **ChromaDB** collections, resolving 3 github issues.
- Integrated extensive unit and end-to-end tests with **PyTest** increasing coverage by 15%.
- Improved API ergonomics by writing a comprehensive database reset function.
- Extended app functionality using **TypeScript** by adding runtime flags, enhancing user customizability.

Hazard Detector January 2023

- Developed an embedded **C++** solution on an **Arduino** platform to accurately detect and monitor temperature and noise levels in real-time.
- Leveraged the **Twilio Python** API and **Flask** to monitor the **Arduino** for critical warning messages and promptly notify users via SMS alerts.