Owen Irving

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Education

Michigan State University East Lansing, MI
Bachelor of Science in Computer Science (Software Engineering), Minor in Business *Jan 2023 – May 2026*
GPA: 3.59/4.00; Dean's List: Spring 2023, Fall 2023, Spring 2025, Fall 2025
Relevant Coursework: Algorithms & Data Structures, Cloud Computing & Databases, Web Development, Machine Learning, Computer Systems, Software Engineering, Object-Oriented Programming, Algorithm Engineering

Technical Skills

Languages: Python, JavaScript, C++, SQL (MySQL, SQLite), HTML/CSS
Frameworks: FastAPI, Next.js, Flask, React, Node.js, PyTorch, Tailwind CSS, Socket.IO, Pandas, NumPy, Matplotlib
Tools & Cloud: Docker, Git, Google Cloud (Cloud Run), Azure (VPS), Postman, Linux, Jira
Concepts: REST APIs, Microservices, CI/CD, Agile, OOP, LLMs, Machine Learning

Experience

AI Research Assistant East Lansing, MI
Michigan State University POET Project *Feb 2026 – Present*

- Audit and evaluate complex open-source evolutionary machine learning models utilizing PyTorch and scikit-learn to determine architectural viability and integration fit for directed protein evolution workflows
- Orchestrate large-scale ML benchmarking workloads on the Linux-based ICER supercomputer via SLURM
- Develop automated data pipelines using NumPy, Pandas, and Matplotlib to efficiently extract, process, and analyze high-volume simulation outputs generated from parallelized model runs

IT Technician Southfield, MI
Inacomp *May 2025 – Aug 2025*

- Orchestrated the deployment and imaging of 1,000+ enterprise endpoints across multiple sites
- Executed software deployment workflows for 2,000+ users, maintaining zero downtime and a 100% success rate
- Diagnosed and resolved complex hardware and network connectivity issues, ensuring constant operational uptime

Projects

Generative Multi-Modal CAD AI Assistant | *FastAPI, Next.js, Python, MCP, Three.js*

- Developed a full-stack app to dynamically generate and live-render complex 3D models in-browser via user inputs
- Architected an MCP client connecting multimodal LLMs directly to FreeCAD's Python API, automating design execution and enabling users to switch LLMs based on task requirements
- Built a custom version control system allowing users to download design revisions for iterative modifications
- Engineered secure Python execution pipelines and optimized Gemini request payloads to cut API costs by 50%

Full-Stack Group Scheduling App | *JavaScript, Python, Flask, MySQL, Socket.IO, Docker, GCP Cloud Run*

- Built a full-stack scheduling app integrating Socket.IO for real-time availability sync
- Secured REST API endpoints with JWT and deployed containerized backend services via GCP Cloud Run
- Designed an algorithmic heatmap summarizing multiple users' schedules to quickly identify optimal meeting times

Microservices Ride-Sharing Backend | *Flask, Python, Docker, Docker Compose, SQLite*

- Architected a distributed backend with 4 Flask microservices handling users, availability, reservations, and payments
- Implemented a cross-service reservation workflow coordinating driver matching, booking, and payment processing
- Containerized all services with Docker Compose and secured database queries with parameterized inputs
- Constructed and executed comprehensive API testing suites with Postman to verify endpoints

Keyframe Animation Engine | *C++, CMake*

- Programmed a keyframe animation engine in C++ featuring a custom timeline UI for keyframe placement
- Designed a hierarchical actor-component system with parent-child transformations for forward kinematics
- Refactored the core architecture leveraging Factory, Observer, and Adapter design patterns to enhance modularity