# JONATHAN LIANG

(309) 361-7377 | jonliang@umich.edu | linkedin.com/in/johnnyhliang | github.com/Green-Thanos

## EDUCATION

**University of Michigan, College of Engineering** — Expected Graduation: May 2029
*B.S.E Computer Science/Electrical Engineering*

## EXPERIENCE

**Web Development Contractor & Consultant** — March 2020 – Present
- Delivered 16+ custom web applications for small businesses across retail, healthcare, and professional services, generating $10,000+ in revenue
- Managed complete business operations from client acquisition and project scoping to development, technical delivery and ongoing maintenance contracts
- Achieved 90+ Google PageSpeed scores through performance optimization and SEO implementation, driving 150% average increase in client web engagement

**Helivox** — Jan 2023 – May 2025
*Lead Developer*
- Architected and deployed responsive web applications using Next.js from ground up, managing complete hosting infrastructure and deployment pipeline at zero cost
- Built outreach tracking and communication platforms for nonprofits across Michigan and Georgia, enabling staff to manage more community contacts while reducing manual data entry by 70%
- Facilitated communication between executive and operational teams for donation drives, educational seminars, successfully delivering 11+ major initiatives on schedule despite varying volunteer availability

**MIT Beaver Works Summer Institute** — July – August 2024
*Hardware Engineering | Cambridge, MA*
- Co-designed electronically assisted walking cane with team of 4 students, developing CAD models, circuit schematics, and user interface
- Optimized and implemented microelectronic circuits for real-time sensor integration and obstacle detection
- Presented prototype to 200+ audience members including MIT staff, parents, and industry professionals

## PROJECTS

**Discord Application Platform** | *Typescript, NextJS, Prisma, Discord API, Redis, MongoDB*
- Built and scaled multi-purpose Discord bot that served up to 40,000+ concurrent users with 99.9% uptime
- Implemented OAuth authentication system with web dashboard, Redis caching for sub-100ms response times, and database optimization reducing query times by 60%

**Celiac Disease Research - Computational Biology Analysis** | *CNNs*
- Independently researched Ubiquitin-proteasome system correlations in Celiac Disease using NCBI GEO datasets and convolutional neural networks
- Analyzed gene interaction networks with StringDB and GeneCards database for comprehensive pathway mapping
- Earned Honorable Mention at University of Michigan GIDAS High School Research Conference

**SemComp - Semantic Text Classification Analysis** | *Pytorch, zstd*
- Developed semantic compression algorithm achieving sub-millisecond inference on 10,000-entry news dataset with 86% accuracy based on pattern matching in compressor states without the need for neural networks.
- Created production-ready pipeline with automated preprocessing and evaluation metrics

## TECHNICAL SKILLS

**Languages**: C, C++, Rust, Typescript, Python, Matlab
**Technologies**: PyTorch, Scikit-learn, Pandas, Pydantic, NextJS, gRPC, Docker, OpenCV, AWS, STM32, Linux
**Audited Coursework (MIT-OCW, UofM):** 6.006 Introduction to Algorithms, 6.046J Design and Analysis of Algorithms, ECE/Math 276 Discrete Mathematical Methods in Computer Engineering

## AWARDS

**Google Code Jam (2022)**: Round 2 Qualifier (Top ~3000 Contestants)
**USA Computing Olympiad (2024)**: Gold Division Contestant