

Ian Zalcborg

US Citizen | ianzalcborg@gmail.com | Zalcborg.Dev | <https://github.com/izalcborg>

Education

The Ohio State University – BS Engineering Physics - Electrical and Computer Engineering | **GPA: 3.27** (Year 2 - Present) May 2027
Honors - Morrill Scholarship Recipient | **Independent Study** - Tritium-Powered Beta-Photovoltaic Power System (3 CrHr)

Experience

Engineering Researcher, Center for Design and Manufacturing Excellence – Columbus, OH March 2025 – Present

- Reduced embedded device power consumption by 65% through firmware-level optimization and hardware redesign
- Developed ISR-driven low-power firmware with sleep states in C for energy-constrained medical devices
- Contributed to embedded system development for medical and standardized research instrumentation
- Designed and implemented internal automated testing tools to accelerate embedded validation workflows
- Developed electronic training module educating professionals on smart manufacturing and Industry 4.0 for SBA's E2G
- Conducted research on applying BERT-based NLP models to improve digital forensics analysis

Co-Founder, Stratocrest – Columbus, OH November 2025 – Present

- Co-founded startup commercializing Project Knockout's aerogel composite into concussion-preventing hardhat liners
- Developed manufacturing workflows and prototype validation to ensure aerogel composite meets real-world safety requirements
- Preparing venture pitch and commercialization strategy for OSU President's Buckeye Accelerator program

AI Software Intern, NeuroTech Startup (Under NDA) – Cleveland, OH October 2024 – February 2025

- Developed NLP-driven system that automatically generated structured analytical reports from patient brain data
- Designed backend processing pipeline in Python to support secure and scalable model deployment

Head of IT, Systems, and Warehouse Management, Smart Supply Int. – Miami, FL December 2019 – August 2022

- Researched, purchased, and installed warehouse inventory management solutions, increasing efficiency 3x
- Led company-wide transition to secure remote infrastructure during COVID-19
- Set up, maintained, and provided on-demand IT support and services for security and ease of use

Projects and Extracurriculars

Personal Project - High-Power Battery System - 2025 Zalcborg.dev

- Designed a 60V 450A continuous discharge battery system by integrating dual 30V batteries with smart BMS
- Developed microcontroller-based charging system with intelligent charging management and monitoring
- Integrated adjustable power supply output from battery and comprehensive safety systems

HackOH/O 2025 - OpenLedger - 2025 <https://github.com/GR74/openledger1>

- Developed privacy-preserving AI collaboration platform with multi-level access controls, blockchain-integrated transaction logging, and AWS S3 data processing using React, TypeScript, and FastAPI
- Validated end-to-end data flow from embedded hardware to web application backend

NeuroTech Club - Vice President - 2024 - Present <https://doi.org/10.3390/technologies13050199>

- Led 15+ member interdisciplinary team developing student-led neurotechnology research initiatives
- Directed electronics and computer vision development for Project Knockout (published in MDPI Technologies)
- Co-authored peer-reviewed research on aerogel composite demonstrating 69% impact energy absorption

Personal Project - Server + Homelab - 2023 Zalcborg.dev

- Designed and deployed self-hosted server for local AI workloads along with game multiplayer and project hosting
- Implemented RAID 5 storage system for redundancy and improved fault tolerance
- Configured encrypted NX remote access and system monitoring

Personal Project - Daisy AI Robot - 2019 - 2023 Zalcborg.dev

- Deployed large language models locally in tandem with Mycroft framework to enable cohesive contextual dialogue
- Designed 3D-printed mechanical components for planned humanoid robot integration

Skills

Hardware: Microcontrollers (STM32, ESP32, Arduino, Raspberry Pi), Electronics Prototyping, 3D Printing, Soldering

Programming: Python, C/C++, HTML

IT & System: Cybersecurity, Server Management, Networking, Systems Administration, IT Operations

Language: English (Native), Spanish (Native)