Alex Gulko

alex@gulko.net • 440-318-9046 • linkedin.com/in/alexgulko

EDUCATION

The Ohio State University — Expected graduation: 2025
Bachelor of Science — Computer Science and Engineering + Artificial Intelligence — **GPA: 3.71**

SKILLS

Programming languages: C++, C, Python, x86 assembly, JavaScript, TypeScript, C#, Java, MATLAB
Machine learning: PyTorch, Jupyter, Pillow
Embedded: VHDL, Linux, FPGA
Web development (full-stack): Node.js, Vue.js, Svelte, Django
Cloud: AWS, Git, CircleCI, GitHub Actions
Databases: MongoDB, SQL, GraphQL
Other: .NET, Android SDK, Agile, Jira, SolidWorks
Coursework: Data Structures, Analysis of Algorithms, Computer Architecture, Calculus, Linear Algebra, Digital Logic

EXPERIENCE

The Ohio State University — Researcher in Machine Learning and Visualization — Sep 2022 - Present
- Developed algorithms for data compression using Implicit Neural Representations with Adaptive Multi-Head splitting
- Ran experiments on Argonne National Laboratory ThetaGPU Supercomputer

American Electric Power — Technology Intern, Automated Testing and DevOps — May 2023 - Aug 2023
- Developed an automated code quality analysis tool from scratch for a proprietary scripting language, expediting code reviews at AEP from multiple days to 300 milliseconds (Node.js, TypeScript)
- Tasked to improve codebase quality, developed a dashboard to generate and review code quality reports with annotated code snippets through a progressive web app (Svelte, Vite, Node.js, TypeScript)
- Built a GitHub Actions pipeline to assess code on commits and pull requests and present the quality reports through the GitHub UI or a downloadable PDF (Node.js, TypeScript, Puppeteer)
- Wrote scripts for automated testing of an outage restoration and distribution grid optimization software suite ADMS using Eggplant Functional & DAI testing systems

Hyland Software — Software Developer Shadow — May 2022
- Shadowed a Software Engineer with 7+ years of experience
- Wrote a backend for an online store in .NET with SQLite database connection
- Tested code using pipelines (CircleCI) and performed Static Analysis
- Practiced test-driven development and design patterns
- Learned the latest industry practices in .NET and C#

Sigma — Founder, CEO — Dec 2019 - Sep 2020
- Developed a concept of a Decentralized Smart Home System to bring an affordable alternative to the market
- Showcased project at the California Science and Technology Fair (March 2020)
- Presented to Sputnik ATX startup accelerator CEO
- Led the development of a minimum viable product in a team of 5 people

ENGINEERING PROJECTS

Uncountable — Team Lead, Software Engineer — 1st place at HackOHI/O out of 200+ teams — Oct 2023
- Used a custom fine-tuned YOLOv8 model to track items forgotten by surgeons in patients during surgeries
- Developed a cross-platform Electron.js app to provide a real-time list of all medical tools in the patient's body
- Built an architecture with multi-threading, Python child process, and WebSocket API for high performance

Grape I/O — Web Engineer — 1st place at HackAI — Feb 2023
- Developed a machine-learning model to predict wine quality from chemical parameters in a team
- Web scraped a database of 200 wines with chemical properties
- Created an online dashboard (Vue.js) for wine quality prediction and a model playground

Collision — Team Lead, Full-stack Engineer — 4th place at HackOHI/O out of 220 teams — Oct 2022
- Developed a full-stack application that integrates with Google Calendar and pulls data for multiple people to find a time slot within given constraints when everyone is available (Google OAuth 2.0 API, Vue.js, Node.js, Express.js)
- Assisted teammates in areas outside of their direct area of expertise, redistributed tasks, and rapidly reassessed the backlog when one of the teammates dropped out of the competition

LEADERSHIP AND VOLUNTEERING

Software Engineering Club — Founder, President — Sep 2023 - Present
- Started a student organization with 4 officers and over 200 members
- Taught workshops in full-stack web development, cloud computing, and Python, helping students enrich their skills
- Created an accelerator for student projects that provides free cloud computing, mentorship, and domain names

Science Olympiad — Event Supervisor, Test Writer for Invitationals and States — Jan 2023 - Present
- Developed exams for Cybersecurity, Detector Building (Electronics, Chemistry), and WiFi Lab (E&M Physics, Radio)
- Supervised at Invitational and State Tournaments