Alex Gulko

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EDUCATION

The Ohio State University Columbus, Ohio — Expected graduation: May 2026
Bachelor of Science – Computer Science & Engineering + Artificial Intelligence — **Major GPA: 4.0**

SKILLS AND TECHNOLOGIES

- **Machine learning**: Python, PyTorch, Jupyter, Pillow
- **Web development (full-stack)**: JavaScript, TypeScript, HTML, CSS, Node.js, Vue.js, Svelte, Vite, Auth0
- **Cloud**: AWS, CircleCI, GitHub
- **Databases**: MongoDB, SQL, GraphQL
- **Other**: Java, C, C++, C#, .NET, Linux, Android Studio, Jira
- **Coursework**: Discrete Structures (Graphs, Trees), Asymptotic Analysis of Algorithms, Calculus, Linear Algebra

EXPERIENCE

The Ohio State University – Researcher in Visualization and Machine Learning — 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 – Automated Testing Intern — May 2023 – Aug 2023

- Developed a static code analysis tool from scratch for a proprietary scripting language, expediting code reviews at AEP from multiple days to 300 milliseconds
- 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

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 for wine quality prediction and a model playground

Collision – Team Lead, Full-stack Engineer – 4th place at Hack OHI/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

ION – Primary Engineer — May 2021 – Jun 2021

- Started as a class project to create a Java video game, but went beyond the assignment and developed a graphics library
- Developed a physics simulation engine, user-friendly graphics API, and a framework for game and app creation
- Wrote 3D ray-casting engine and a Minecraft-like 3D game using this library on pure Java

LEADERSHIP EXPERIENCE AND VOLUNTEERING

Software Engineering Club – Founder, President — Sep 2023 – Present

- Started a club with 4 officers and 50+ members
- Organizing interactive workshops in full-stack web development
- Creating a program to provide any student with free cloud computing resources to launch their projects

Science Olympiad – Event Supervisor, Test Writer — Jan 2023 – Present

- Developed exams for Cybersecurity and WiFi Lab (E&M Physics, Radio transmission)
- Supervised events at Invitational and State Tournaments