

Alex Gulko

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EDUCATION

The Ohio State University Columbus, Ohio
Bachelor of Science – Computer Science & Engineering + Artificial Intelligence

Expected graduation: May 2026
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, REST API, DNS, Auth0
- **Cloud:** AWS, CircleCI, Git
- **Databases:** MongoDB, SQL, GraphQL
- **Other:** Java, C, C++, C#, .NET, Linux, Android Studio, Jira, MATLAB, SolidWorks
- **Coursework:** Data Structures, 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
 - Tested my code on Argonne National Laboratory ThetaGPU Supercomputer
- American Electric Power – Technology Intern** 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)
 - 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 student organization with 4 officers and 100+ members
 - Organized 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