

# 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**

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## 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

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## 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 for a proprietary scripting language to ensure AEP's code quality
  - Expedited 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

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## ENGINEERING PROJECTS

- Grape I/O – Web Engineer – 1<sup>st</sup> 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 – 4<sup>th</sup> 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

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## 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