Alex Gulko

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EDUCATION

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

Expected graduation: May 2025
Major GPA: 4.0

SKILLS AND TECHNOLOGIES

Programming languages: C++, C, C#, Python, JavaScript, TypeScript, Java, MATLAB
Machine learning: PyTorch, Jupyter, Pillow
Web development (full stack): HTML, CSS, Node.js, Vue.js, Svelte, Vite, REST API, WebSocket, DNS
Cloud: AWS, CircleCI, Git
Databases: MongoDB, SQL, GraphQL
Other: .NET, Linux, Android Studio, Jira, 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

Uncountable – Team Lead, Software Engineer – 1st place at Hack OHI/O out of 200+ teams Oct 2023
- Made surgeries safer using computer vision
- Used a custom-tuned YOLOv8 model to find tools forgotten by surgeons in patients during operations
- Developed an Electron.js cross-platform 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 a 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 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

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