Alex Gulko

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# EDUCATION

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| 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, Electron.js, Android Studio, Jira, SolidWorks

**Coursework**: Data Structures, Asymptotic Analysis of Algorithms, Calculus, Linear Algebra

# EXPERIENCE

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| **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

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| **American Electric Power – Technology Intern, 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)
* 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

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| 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#

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| 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

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| **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 track items forgotten by surgeons in patients during operations
* 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

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| **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

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| **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

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| **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

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| **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