Gage Howe
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gagehowe.dev

Education

Texas A&M University, B.A. Computer Science, Major GPA: 3.8 Aug 2022 – May 2026

- Relevant Courses: Program Design, DSA, Computer Organization, Database Systems, Programming Languages, Computer Graphics, Software Engineering, Computer Systems, Design and Analysis of Algorithms, Research

Experience

Undergraduate Researcher @ TAMU Undergraduate Research Scholars August 2024 – Present

- Researching hardware and software solutions for accurate magnet tracking platforms for healthcare and security, using neural network and particle swarm optimization.
- Adapted a commercially available keyboard to track magnets with a range of 6 inches, and developed a live heatmap program to track the position of the stylus.
- Authoring a research paper accepted for submission to the UGR program, with plans for a 2-year embargo upon publication

Curriculum Developer @ Smart Core Labs May 2024 – Present

- Developed and implemented Python curriculum for data structures and algorithms.
- Taught data structures and algorithms in Python, Java, C++, and Lua to high school students.
- Demonstrated ability to learn, apply, and teach new technologies quickly.

Research Assistant @ Texas A&M Live Lab Nov 2023 – Dec 2023

Programming Instructor @ iCode Jun 2023 – Aug 2023

- Taught game development and web development using Lua, JavaScript, HTML/CSS, and C#.
- Developed strong communication skills by explaining complex technical concepts to students.

Team Member @ Chick-Fil-A May 2021 – Aug 2021

Projects

Learnix Web

- Developed an interactive platform for learning Linux commands, providing users with lessons and a persistent sandbox Linux environment. Available at http://35.225.39.137/
- Implemented using Flask, React, Docker, MongoDB, Auth0, and Terraform, and deployed to Google Cloud.

Space simulator

- Implemented using C++, OpenGL, CMake, and ImGUI, as well as quaternions, matrices, Kepler's laws of planetary motion, and Newton's law of universal gravitation.
- Leveraged multithreading, Barnes-Hut Approximation, Octrees, and Verlet Integration to improve performance by 10000% over a naïve solution and simulate ten thousand objects at 20 steps per second.

Evolution Simulator

- Developed a 3-dimensional cellular automaton designed to simulate mutation and natural selection.
- Improved performance by ~1200% by implementing spatial partitioning and multithreading.

Portfolio Website

- Created a personal portfolio website showcasing my 20+ projects. Available at https://gagehowe.dev/

Skills

Languages: C++, Rust, Python, Java, JavaScript, C#, Golang, SQL, React.js, HTML, CSS
Technologies & Concepts: Git, Linux, SQL, Web Development, React, Node.js, REST, OpenGL, CRUD, Databases, CI/CD, waterfall, agile methodology
Soft Skills: Oral & written communication, teamwork, presentation, public speaking

Awards & Certifications

- **Eagle Scout**, Boy Scouts of America
- Aggie Coding Club - **Best Project Manager** Spring 2024
- **Mu Eta Sigma Math Honor Society**
- **HackerRank Certifications** – Python (basic), Go (basic), JavaScript (basic)
- Won **Best Use of Auth0** at Hack Rice