Gage Howe
gagehowe@tamu.edu
linkedin.com/in/gage-howe
gagehowe.dev

Education

Texas A&M University, B.A. Computer Science, Major GPA: 3.9, US Citizen 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, Operating Systems, Robotics and Spatial Intelligence, Scientific Computing, Artificial Intelligence

Experience

Teaching Assistant @ Texas A&M University Jan 2025 – Present

- Serving as the sole Teaching Assistant for CSCE 441: Computer Graphics

Undergraduate Researcher @ TAMU Undergraduate Research Scholars Aug 2024 – Dec 2024

- Researched hardware and software solutions for accurate magnet tracking platforms for healthcare and authentication.
- Adapted a commercially available keyboard to track the positions of magnets with a range of 6 inches and developed a live heatmap program to track the position of the stylus.
- Implemented mathematical and machine learning algorithms including quaternions, neural networks, and particle swarm optimization.

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#.

Projects

FrontierMap

- Developed an iOS and web augmented reality application for finding optimal wifi extender placement in a house.
- Implemented using Next.js, Flask, OpenCV, Numpy, Scipy, and SwiftUI, with a Dockerized server deployed to Google Cloud Run.

Learnix Web

- Developed an interactive platform for learning Linux commands, providing users with lessons and their own persistent sandbox Linux environment.
- Implemented using Flask, React, Docker, MongoDB, Auth0, and Terraform, and deployed to Google Cloud.

Galaxy Simulator

- Implemented using C++, OpenGL, CMake, and ImGUI, as well as matrices and various laws of motion.
- Leveraged multithreading, Barnes-Hut Approximation, Octrees, and Runge Kutta/Verlet Integration to improve performance by 5000% over a naïve solution and simulate and visualize ten thousand objects at 90 steps per second.

Evolutionary Automaton

- Developed a 3-dimensional cellular automaton designed to simulate mutation and natural selection.
- Implemented in Rust for high-performance, multithreaded, and stable operation.

Skills

Languages: C++, Rust, Python, Java, JavaScript, C#, Golang, SQL, HTML, CSS
Technologies & Concepts: Git, Linux, SQL, Web Development, React.js, Node.js, REST, OpenGL, CRUD, Databases, CI/CD, waterfall, agile, six sigma, Microsoft Office, object oriented design, open source, SDLC, systems programming
Soft Skills: Oral & written communication, teamwork, presentation, public speaking

Awards & Certifications

- **Eagle Scout**, Boy Scouts of America
- Aggie Coding Club - **Best Project Manager** Fall 2023
- **HackerRank Certifications** – Python (basic), Go (basic), JavaScript (basic)
- **Won Best Use of Auth0** at HackRice, Rice University's official hackathon
- **Won 3rd Place in the Frontier Challenge at HackUTD**, The United States' biggest hackathon
- **Won Best in Programming and 3rd Place Overall at** A&M Game Developers Fall 2024 Game Jam
- **Won 1st Overall** and **MVP** at Sea Aggie Coding Club Hackathon 2024
- **Dean's Honor Roll** at Texas A&M Engineering