Alexander Bui

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Education

Texas A&M University College Station, TX
Bachelor's of Science, Computer Engineering *Aug 2024 — May 2027*
- Cumulative GPA: 4.0/4.0

Work Experience

Software Engineer Intern Jan 2025 — Present
GravityIntel
- GravityIntel is an AI startup founded in 2024, supported by organizations such as AWS, NVIDIA, Couchbase, Atlassian, GitHub, Shakti Cloud, and Lambda, with over $150,000 raised in credits.
- As a Software Engineering Intern, I engineered a full-stack web application leveraging agentic AI to automate the analysis, management, and evaluation of government contract bids.
  - Architected a hybrid data solution using PostgreSQL for relational data and Couchbase for NoSQL and high-performance vector search to manage complex bid information.
  - Integrated infrastructure with Docker and Docker Compose for isolated, reproducible development environments.
  - Developed a responsive, user-friendly interface with React, enhancing user experience and engagement.

Taco Cabana, Line Cook/Cashier Summer 2023 — Summer 2024
Fazoli's, Line Cook Summer 2022

Projects

Aggie Events | *React, NextJS, ExpressJS, PostgreSQL, Docker* Sep 2024 — Present
- Designed and developed a full-stack web application to crowdsource event and organization information for the Texas A&M campus.
- Built a REST API backend with Node.js, Express.js and PostgreSQL capable of handling complex search queries.
- Engineered robust authentication and session management systems with OAuth 2.0 to safeguard user interactions.
- Enhanced website deployment speeds by 250% through a custom CI/CD pipeline using Docker and Bash.

OpenGL Graphics Engine | *C++, OpenGL, CMake* Apr. 2023 — Present
- Built a graphics pipeline from scratch using OpenGL and C++, implementing rendering with an Entity-Component-System (ECS) architecture, supporting lighting, textures, and custom model loading.
- Accelerated broad-phase physics collision detection with static and dynamic bounding volume hierarchies.

CUDA Accelerated Raytracer | *Python, CUDA* May 2024 — Sep 2024
- Developed a raytracer to explore raytracing algorithms and material rendering, leveraging JIT compilation with the Taichi library for rapid prototyping and runtime optimization.
- Applied GPU parallelization techniques, including kernels and thread synchronization, to achieve over 20x performance improvement.

Leadership

Project Manager Sep. 2024 — Present
Texas A&M University *College Station, TX*
- Led a 27-member software engineering team, mentoring in full-stack web development and streamlining task management.
- Managed version control, issue tracking, and deployment scripts using Git.
- Recognized as **Best Project Manager** for Fall 2024.

Skills

- **Technologies**: C/C++, JavaScript, Python, SQL, Java, TypeScript, HTML/CSS, React, NextJS, Node.js, ExpressJS, PostgreSQL, Docker, CUDA, Git, Linux, OpenGL, Bash
- **Skills**: Oral & Written Communication, Public Speaking, Teamwork, Leadership, Mentoring, Web Development
- **Interests**: Hiking, Blogging, Cybersecurity, Traveling, Cooking, Game Development, Science Fiction