Alex Yoon

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Education

The University of Texas at Austin — Austin, TX
Bachelor of Science in Computer Science, GPA: 3.76/4.00 — *Aug 2022 – May 2026*

- **Relevant Coursework:** Operating Systems, Computer Architecture, Data Structures & Algorithms, Web Search & Information Retrieval, Neural Networks, Natural Language Processing (NLP), Computer Graphics, Competitive Programming, Linear Algebra, Calculus, Discrete Math

Technical Skills

Languages: Python, Java, C/C++, JavaScript, TypeScript, HTML/CSS, PHP, ARM Assembly, x86-64 Assembly
Frameworks & Libraries: React, Flask, FastAPI, Express.js, Node.js, PyTorch, NumPy, pandas, Matplotlib
Database & Tools: PostgreSQL, MySQL, MongoDB, CUDA, Git, Docker, AWS, Vim

Experience

Paycom — Irving, TX
Software Development Engineer Intern — *May 2025 – Present*

- Developed automation features for enterprise payroll platform using PHP backend and React/TypeScript frontend
- Collaborated with senior developers on system architecture and code reviews for deployment
- Researched AI-based recommendations; prototyped ranking and scoring system to model user form behavior

Projects

HiFi AI Chatbot Platform | *Python, TensorFlow, Flask, JavaScript* | GitHub — Oct 2023

- Built intelligent chatbot web application in 24-hour hackathon, winning 2nd place among 700+ participants
- Implemented machine learning models using TensorFlow and PyTorch, selecting optimal model with A/B testing
- Integrated Weather and IP APIs to provide personalized responses based on user location and conditions
- Developed responsive web interface with Flask backend and JavaScript frontend for real-time chat interactions

ARM CPU Emulator | *C, Assembly, Computer Architecture* — Mar 2024

- Designed and implemented ARM processor emulator in C supporting chArm-v2 instruction set for computer architecture course
- Built 5-stage pipeline architecture (fetch, decode, execute, memory, writeback) to simulate modern CPU execution
- Implemented instruction parsing, register file management, and memory hierarchy for realistic processor simulation
- Debugged complex pipeline hazards and data dependencies to ensure correct instruction execution order

Physarum Slime Mold Simulation | *JavaScript, WebGPU, WGSL, Computer Graphics* — May 2025

- Developed real-time biological simulation using WebGPU compute shaders for computer graphics coursework
- Implemented parallel particle system with custom WGSL shaders to simulate slime mold foraging behavior
- Designed efficient GPU-accelerated algorithms for thousands of simultaneous agent interactions and trail systems
- Created interactive visualization with real-time parameter adjustment and performance optimization

Leadership & Achievements

Texas THON — Austin, TX
Associate Director of Programming — *Aug 2022 – Present*

- Lead cross-functional team organizing fundraising events, generating $130,094 for Dell Children's Medical Center
- Coordinate programming initiatives and manage event logistics for 1,000+ participants annually

MLH HackTX 2023 — Austin, TX
2nd Place Winner (700+ participants) — *Oct 2023*

- Developed innovative solution in 24-hour hackathon, competing against 700+ talented developers

CodePath TIP 102 Fellowship — Remote
Technical Interview Prep Fellow — *Jun 2024 – Aug 2024*

- Completed intensive 10-week program solving 150+ data structures and algorithms problems