Jack Stoltz

646-799-5047 | jstoltz6@gatech.edu | linkedin.com/in/jack-stoltz | github.com/JackStoltz | jackwstoltz.com

Education

Georgia Institute of Technology December 2027
BS Computer Engineering | Threads: Systems Architecture, Distributed Systems, & Software Design GPA: 3.71/4.00

Experience

AMD May 2026 – August 2026
Software Engineer Intern – CPU Performance Team Austin, TX

- Engineered AI agent over 4TB+ of CPU experiment data via MongoDB MCP, cutting perf triage from ∼2 hours to 5 mins
- Orchestrated LLM-driven execution across 30+ tools with persistent memory, schema-aware queries & constrained outputs
- Automated IPC uplift computation for over 10K configs with Pandas ETL & SQLite caching, replacing manual comparison
- Shipped React interface visualizing IPC, L3 hit rate, latency, & bandwidth deltas across SoC regressions, adopted by team

Intel Jun 2025 – Dec 2025
Software Engineer Intern – GPU Validation Infrastructure Team Chandler, AZ

- Built Python/C++ E2E pipeline validating PSMI signal integrity across GPU memory fabric, deployed in GT/SM clusters
- Accelerated trace validation throughput 1.73× using SYCL GPU kernels, coalesced memory access, and parallel reductions
- Root-caused 40+ SystemVerilog RTL failures through waveform & trace analysis, resolving defects in the Nova Lake stack
- Migrated ∼3k lines of legacy Perl validation code to Python, verifying output parity against the original implementation

AquaBots Lab (VIP) @ Georgia Tech Jan 2026 – May 2026
Lead Undergraduate Researcher – Computer Vision Team Atlanta, GA

- Spearheaded 6-person team in designing and implementing computer vision models for salmon detection and classification
- Enhanced YOLOv8 with PyTorch CNN for depth-contour extraction, boosting detection mAP by 20% in underwater footage
- Evaluated fish scale classifiers with AlexNet and 2-stream architectures, achieving 80%+ accuracy on lab-annotated datasets
- Conducted RGB/depth ablation studies across turbidity levels, identifying failure modes & limits of depth-assisted detection

College of Engineering @ Georgia Tech Jan 2026 – May 2026
Teaching Assistant – Programming HW/SW Systems (ECE 2035) Atlanta, GA

- Taught recitations for 60+ students on dynamic/static memory allocation, register-level execution, and HW/SW interaction
- Held office hours weekly guiding students in debugging C++ memory faults, RISC-V assembly, and microcontroller projects
- Modernized recitation slides by rebuilding legacy decks with updated visuals, live-coding demos, & aligned practice problems

BrainBoost (VIP) @ Georgia Tech Jan 2025 – May 2025
Undergraduate Researcher – AI/Software Team Atlanta, GA

- Built Python NLP pipeline with NLTK parsing student math input into ASTs, classifying operators, operands, & identifiers
- Architected React frontend and SQL persistence layer enabling students to define and manipulate mathematical expressions
- Surveyed 200+ students on the math expression input sandbox, using results to guide interface and usability improvements

Projects

Multithreaded OS Scheduler | *C, pthreads, Linux* Apr 2026 – May 2026

- Implemented core scheduler logic in C for synchronizing up to 16 concurrent worker threads through a shared ready queue
- Built a thread-safe queue with pthread mutexes and condition variables, blocking idle threads to eliminate any busy-waiting
- Designed FIFO & Round-Robin policies with fine-grained locking across mutexes preventing deadlock & reducing contention

Offline RAG System (Hermedoc) | *Python, LLaMA, LlamaIndex, Flask* Nov 2025 – Jan 2026

- Designed a secure fully offline RAG system enabling DoD-restricted industries to query their private data locally via LLaMA
- Generated embeddings with Hugging Face + LlamaIndex and managed local Chroma vector database for contextual retrieval
- Developed cross-functional React + Flask UI, streamlining data upload and chatbot interaction for non-technical end users

Vision-Controlled Robotic Arm | *Python, C++, OpenCV, Arduino* Oct 2024 – Nov 2024

- Implemented real-time gesture recognition with MediaPipe and OpenCV, enabling webcam-based control of the arm's axes
- Interfaced Python vision pipeline with Arduino C++ firmware, allowing seamless actuation of the servo motors from gestures

Skills & Interests

Languages: Python, C, C++, C#, Java, JavaScript/TypeScript, SystemVerilog, SQL
Frameworks & Libraries: CUDA, HIP, OpenMP, React, Node.js, Flask, Pandas, PyTorch
Tools & Platforms: Git/GitHub, Unix/Linux, PostgreSQL, MongoDB, Azure, Docker, AWS
Interests: Running, Travel, Puzzles, Reading, Weightlifting, Film, History, Linguistics, Poker