Jackson Belanger

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EDUCATION

Georgia Institute of Technology Atlanta, GA
Bachelor of Science in Computer Science | GPA: 3.96 Expected May 2027

- Coursework: Computer Architecture, Networking & Processors, Artificial Intelligence, Data Structures & Algorithms

WORK EXPERIENCE

Software Engineer Intern May 2025 – Aug 2025
Roblox San Mateo, CA

- Developed a custom Kubernetes controller using Go that orchestrates percentage-based rollouts for service deployments.
- Implemented an in-memory expectations store to verify desired state against live cluster state, enforcing cache consistency.
- Built out CLI tool that allows ~2,000 engineers to securely deploy new service versions to company-owned data centers.

Software Engineer Intern June 2024 – Aug 2024
Fidelity Investments Boston, MA

- Engineered key features for Fidelity's career portal for applicants and recruiters using Java, Postgres, Angular, and Spring.
- Reduced load times by 40% by implementing caching with Redis, optimizing GraphQL queries, and improving server logic.
- Wrote Python scripts to automate recruiter workflows and candidate tracking, saving recruiters around 5 hours per week.

Software Developer Intern May 2023 – May 2024
Tree-Plenish Remote

- Developed a full-stack Flask web application, enabling rules-based app notifications and automated order tracking emails.
- Improved retention rate by 20% by analyzing the factors predictive of a client returning using Python, Pandas, and NumPy.

PROJECTS

Windows Virtualization Platform | C++, KVM, QEMU, libvirt, Linux, SPICE

- Engineered a virtualized Windows environment management system, featuring dynamic VM provisioning, persistent memory state with disk backing, and low-latency display streaming via SPICE. Allows users to use Windows through a web browser.

Five-Stage Pipelined RISC CPU | C, Assembly, Digital Logic, Processor Design, Hazard Resolution

- Implemented a five-stage pipelined RISC CPU in CircuitSim, cutting execution latency through parallelization, a custom forwarding unit, and single-bubble load hazard resolution. Achieved a 4.6x latency cut over non-pipelined baseline.

Competitive Stock Trading Platform | TypeScript, Redux, Redis, Express.js, Node.js, React Native, MongoDB

- Built a highly engaging head-to-head stock trading platform. Implemented REST APIs and WebSockets for real-time data synchronization. Optimized system performance with efficient caching, data streaming, matchmaking, and trade processing.

ACTIVITIES & AWARDS

Undergraduate Researcher Aug 2025 – present
Future Computing @ Georgia Tech | C++, CUDA, GPU/CPU memory hierarchy, AI systems, HPC

- Researching LLM inference optimization, focusing on overcoming GPU HBM memory limits for long-context inference.
- Developing compression-in-flight in llama.cpp to compress KV cache blocks during HBM spill to reduce bandwidth strain.

Quant Trading Analyst Jan 2024 – Dec 2024
Trading Club @ Georgia Tech | C++, Python, Pandas, NumPy, Options Theory

- Model sector ETFs' volatility surfaces based on the volatilities of the largest components with principal component analysis.
- Completed an intensive quantitative finance bootcamp covering options theory (Black-Scholes, Greeks), stat arb, and more.

3rd Place in Harvard Trading Competition March 2024
Harvard Undergraduate Quantitative Traders

- Competed in ranked games testing skills in market making, betting, mental math, and making decisions under uncertainty.

TECHNICAL SKILLS

Languages: C++, Python, C, Java, JavaScript, Go, Swift, TypeScript, HTML/CSS, SQL, GraphQL
Frameworks and Libraries: React, Angular, Node.js, Express.js, Spring Boot, Flask, React Native, Redux, Pandas, Redis
Developer Tools: Git, GitHub, Kubernetes, MongoDB, PostgreSQL, AWS, Docker, Firebase, Postman, Jenkins, Gradle
Concepts: Operating Systems, Optimization, Debugging, Unit Testing, Databases, Cloud Computing, Version Control, Agile