

JAMES LI

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EDUCATION

University of Southern California

Expected May 2026

Bachelor of Science in Computer Engineering and Computer Science

GPA: 3.96, Presidential Scholarship recipient, Dean's List.

Relevant coursework: Data Structures, Embedded Systems, Linear Algebra, Differential Equations, Discrete Math, Multivariable Calculus, Algorithms, Computing Systems, Distributed Systems, Internetworking, Digital Circuits

EXPERIENCE

Roblox

May 2024 – August 2024

Software Engineer Intern

- Built an end-to-end deployment system in Go for Roblox game instances to run in Kubernetes. This was the first major edge workload, encompassing 75% (around 14,900) of all edge data center servers, to be fully migrated from the legacy Nomad/Hashicorp-based architecture. This involved the incorporation of automatic OS patching with host setup and drain, adding support for specialized game server worker nodes in Kubernetes clusters, and the integration of game instance log exporting, telemetry, and networking. It also laid the groundwork for the future migration of all other edge workloads.
- Created a build and deployment system for host-level server health checks, which revealed hundreds of unhealthy hosts with stalled Docker daemons, allowing them to be reprovisioned and returned to serving production traffic.

BottleUp

May 2023 – January 2024

Software Engineer

- Responsible for the development of business-critical user and vendor mobile apps with React Native in TypeScript while collaborating directly with the CEO to offer improvements and refine the product.
- Hired and managed junior developers to assist in the development of front-end components.
- Developed the payments system and order fulfillment backend with PostgreSQL and Typescript.

AI Insurance

June 2023 – July 2023

QA Tester

- Uncovered fundamental bugs and crashes in the company's new insurance application platform, which would otherwise have permanently corrupted customer data.

Firefly

March 2023 – June 2023

Co-Founder/Software Engineer

- Built the product's embeddable widget and customer-facing dashboard website with React/Next.js, Typescript, and PostgreSQL, resulting in a win for Judge's Choice at LavaLab's Demo Night.
- Worked with project manager to develop a business model and determine the product's core valuable proposition.
- Collaborated with designer to create and refine a smooth and instantly understandable user interface.

Upful.ai

January 2023 – May 2023

Technical Intern

- Worked with the CTO to build the backend analytics pipeline with AWS Glue and PySpark to track the successfulness of the product's coaching recommendations.
- Generated valuable insights into differing product effectiveness for various classes of users.

PROJECTS

Connect 4 on an FPGA | Verilog, Python

April 2024 - May 2024

- Worked on the VGA video graphics module, created Python scripts to convert images into Verilog demux components, and optimized the pixel-by-pixel drawing circuit to output the correct color within the narrow pixel clock deadline.
- Drew all of the artwork with Aseprite.

Infinite Procedural Terrain Generator | C++, OpenGL, CMake

October 2022

- Uses multi-threading to efficiently generate a landscape in a low-poly art style.
- Wrote a custom Poisson Distribution module, allowing for concurrent chunk generation with no loading time.
- Created a purpose-built mesh generator to seamlessly stitch together discrete Delaunay Triangulations.

TECHNICAL SKILLS

Languages: Go, JavaScript, TypeScript, Python, C++, C, Verilog, SQL, Java, GLSL, HTML/CSS

Frameworks: React, Next.js, React Native, Node.js, Qt/QML, Pandas, Numpy, PySpark, d3.js, Bootstrap, Puppeteer, Plotly

Technologies: Kubernetes, Prometheus, Grafana, Nomad, Consul, Vault, Terraform, ArgoCD, GitOps, AWS, PostgreSQL, Chef, Ansible, Stripe, MongoDB, Stripe, OpenGL, WebGL, Linux, Git, Cloudflare, AMD Vivado