Justin Zhang

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Education

Rensselaer Polytechnic Institute (RPI) Expected May 2027
B.S. Computer Science; B.S. Mathematics; Dual B.S. ITWS | GPA: 3.94 *Troy, NY*

- **Relevant Coursework**: Data Structures and Algorithms, Computer Organization, Machine Learning from Data

Experience

Software Development Engineer Intern June 2026 – Aug. 2026
Amazon Web Services (AWS), EBS Fleet Engineering *Boston, MA*

- Shipped an hourly Lambda across 115 production zones that catches live AWS AppConfig drift.
- Added drift dashboards and an alarm that also fires if the checker itself silently stops running.
- Built the first system to surface source versus live config drift, which CloudFormation misses.
- Cut the operator reconcile step from roughly 25 minutes to 2 with a one-command tool.

Software Engineer Intern June 2025 – Aug. 2025
Citco *Jersey City, NJ*

- Built a Python ETL over 1,000+ Bitbucket repositories feeding an engineering metrics dashboard.
- Moved services into containers on EKS behind Jenkins CI/CD, cutting release time by 75%.
- Automated AWS infrastructure provisioning with Terraform, cutting spin-up time by 90%.

Undergraduate Researcher Jan. 2026 – July 2026
Rensselaer Polytechnic Institute *Troy, NY*

- Built a hybrid model predicting coffee futures from market, ERA5 climate and MODIS satellite data.
- Found three pipeline bugs inflating my own result, fixed them, and reported the lower number.

Projects

Shubble (team project) | *Python, Flask, Redis* Sep. 2025 – Present

- Added Redis caching and invalidation that cut database queries 75% and fixed locking under peak load.
- Trained LSTM models for the team ETA predictions, which beat the posted schedule by 40% on error.
- Contributed to RPI's live shuttle tracker, which serves ETA predictions to 1,000+ daily riders.

CARPI Course Planner | *React, TypeScript, Tailwind* Jan. 2025 – Apr. 2025

- Built drag-and-drop course planning, catalog course cards and semester blocks for a team-built RPI planner.
- Set up the team React frontend in TypeScript with Vite and React Router, styled with Tailwind.

Limit Order Book and ITCH Replay | *C++, NASDAQ ITCH 5.0* Mar. 2026 – Aug. 2026

- Built a C++ limit order book with price-time priority and O(1) cancel through an intrusive list.
- Replayed a full AAPL trading day of real NASDAQ ITCH 5.0 data with zero unmatched messages.
- Pooled order and price level allocation with a free list, so steady state does no per-order malloc.

Additional Experiences

Webmaster Apr. 2024 – Aug. 2025
Philippine American League, RPI *Troy, NY*

- Built and ran a React and MongoDB site for 1,500+ students with an OAuth-secured admin area.

Undergraduate Mentor Jan. 2024 – Jan. 2026
RPI Computer Science Department *Troy, NY*

- Mentored 300+ students in formal logic, combinatorics, algorithms, and proof-based reasoning.

Technical Skills

Languages: Python, TypeScript, JavaScript, C++, Java, SQL, Bash
Backend & Frontend: FastAPI, Flask, Node.js, REST, GraphQL, React, Tailwind
Databases: PostgreSQL, Redis, MySQL, MongoDB, DynamoDB
Cloud & Tooling: AWS (Lambda, DynamoDB, EKS, S3, API Gateway), Docker, Kubernetes, Terraform, Jenkins, Git
Awards & Certs: RPI Innovation Weekend Grand Prize ($5,000), HackRPI Best ML Hack, AWS Developer Associate