

Xiyuan (TOMMY) GUO

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EDUCATION

University of Virginia

Charlottesville, VA | Sept 2024 - May 2028 (Expected)

- **Degree:** Bachelor of Science in Computer Science and Mathematics | GPA 3.89/4.00
- **Relevant Courses:** Software Development, Computer Systems and Organization, Data Structures and Algorithms, etc.

PROFESSIONAL EXPERIENCE

Full-Stack Developer, University of Virginia Research Laboratory

Charlottesville, VA | Oct 2025 - Present

- Engineered a scalable full-stack research platform, deploying containerized Node.js services on AWS EC2 via Docker to catalog rare earth element properties and facilitate global academic data retrieval.
- Created immersive data visualizations integrating Three.js rendering engines; generated interactive 3D atomic models to enable real-time structural inspection and analysis by research faculty.
- Architected a high-performance relational database schema using Amazon Aurora (PostgreSQL); optimized queries and indexing to reduce data retrieval latency by 40%, enabling instant rendering of high-fidelity material datasets.
- Deployed secure cloud infrastructure via AWS Amplify, integrating OAuth 2.0 and AWS WAF to streamline backend authentication and enforce strict access controls aligned with the AWS Well-Architected Security Pillar.

Software Engineer, Camden Nurseries

Sydney, Australia | May 2025 - Aug 2025

- Engineered a full-stack e-commerce platform, managing over 200 retail products via a dynamic React frontend and scalable Node.js backend APIs optimized for low-latency transaction processing using AWS CloudFront edge locations.
- Architected critical Node.js backend modules for secure session management while optimizing frontend performance through reusable React components, ensuring seamless cross-device compatibility.
- Ensured 99.9% system availability and operational elasticity across the regions by leveraging AWS Elastic Beanstalk for automated deployment and scaling, maintaining performance stability during peak usage.

Quantitative Analyst Intern, Hangzhou Landscaping

Hangzhou, China | Jun 2024 - Aug 2024

- Engineered quantitative financial models using Python (Pandas, NumPy) to evaluate over \$500,000 in procurement assets, automating cash-flow simulations and ROI analysis to optimize project viability and transparency.
- Developed a comprehensive risk-management framework by identifying, assessing, and monitoring key operational risks across 10,000+ transaction records; incorporated statistical scoring models and scenario-based sensitivity analysis.
- Synthesized macroeconomic trends and RSI indicators into automated intelligence reports, providing the primary data-driven framework for strategic capital allocation to mitigate risk and maximize ROI.
- Applied Monte Carlo simulation, regression-based forecasting, and statistical-analysis methods to evaluate financial scenarios and optimize investment strategies under conditions of high market volatility.

PROJECTS

Creator & Lead Maintainer, difi (Go, Git, Bubble Tea)

Dec 2025 - Present

- Engineered a Go-based Git diff TUI with Bubble Tea and Neovim support; reached #6 on Hacker News with 230+ GitHub stars while optimizing terminal-based workflows. Integrated complex version control for code review before PRs.

Open-Source Contributor, Neovim, Statue (Lua, C, SvelteKit)

May 2025 - Present

- Engineered high-performance components for Statue SSG and developed Lua-based Neovim optimizations to streamline low-latency workflows. Contributed to a thriving ecosystem over 100,000 active developers.

Creator & Lead Engineer, zsweep (Svelte, TypeScript)

Dec 2025 - Present

- Engineered a zero-latency Vim-emulated engine using a custom Finite State Machine and Supabase; reached #5 on Hacker News with 53+ GitHub stars and 1000+ active users. Support synchronization for real-time competitive states.

CERTIFICATIONS & SKILLS

- **Certifications:** AWS Certified AI Practitioner, AWS Certified Cloud Practitioner, USACO Silver
- **Tools:** JavaScript, AWS (Beanstalk, Aurora), K8s, React, Node.js, Svelte, Rails, Python, Java, Gradle, C, SQL, Nvim

LEADERSHIP & SERVICE EXPERIENCE

Firefighter, Plainfield NH Fire Department

Plainfield, New Hampshire | Sept 2022 - Apr 2024

- Orchestrated high-pressure emergency response for 100+ annual incidents; executed rapid situational assessments and critical decision-making during structure fires and hazardous material crises.