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
- **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   *Syndney, 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 - Apr2024**

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