Jonathan **Xu**

Software Engineer

jonathan_z.xu@yahoo.com | www.jonathan-xu.com | https://github.com/ViciousCupcake | https://www.linkedin.com/in/xujonathan

Education

University of California, Los Angeles (UCLA) — *Los Angeles, CA.*

B.S. in Computer Science (GPA: 3.99/4.00) — *Sep. 2020 - Mar. 2024*

- Completed ABET accredited degree, *Summa Cum Laude*, with Dean's Honors
- Coursework: Data Structures, Algorithms, Artificial Intelligence, Machine Learning, Operating Systems, Databases, Natural Language Processing

Work Experience

Google LLC. — *Seattle, WA.*

Software Engineer - Storage Systems — *Jun. 2024 - Present*

- Developed high-availability control plane infrastructure for Persistent Disk, **managing millions of disks** backing compute workloads globally
- Built **high-reliability distributed services** responsible for disk lifecycle operations (create, attach, snapshot, resize, delete) with strict SLOs
- Designed and implemented the architectural overhaul of the Storage Pool telemetry stack, achieving **five-nines reliability** for monitoring critical storage metrics at the **petabyte scale** while significantly improving data fidelity and testability, unblocking **$XXmm** in customer deals
- Spearheaded the authoritative design for a new block storage backup and restore system, enhancing data durability during unforeseen outages

www.BruinWalk.com — *Los Angeles, CA.*

Director — *Feb. 2021 - Mar. 2024*

- Oversaw professor review website technical development with **direct fiscal impact on organization stakeholders**
- Managed a cross-functional team of 20+ engineers to redesign the entire webpage, resulting in a **10% increase in active users** and handling **8M pageviews and 1.5M sessions** in 2022, using Docker, Kubernetes, Nginx technologies on DigitalOcean, AWS, and Cloudflare infrastructure

Medication Reconciliation Research Group at UCLA — *Los Angeles, CA.*

Undergraduate Researcher — *Dec. 2021 - Mar. 2024*

- Developed novel reconciliation algorithm to parse and cross-examine natural language medication prescriptions for consistency and correctness
- Launched **SaaS prescription consistency verifier** with funding from **UCLA TRAG Grant** and integration with US National Library of Medicine
- Engineered web application backed by distributed cluster-based processing pipeline to ensure throughput, and deployed on Heroku

Google LLC. — *Sunnyvale, CA.*

Software Engineering Intern — *Jun. 2023 - Sep. 2023*

- Enabled security compliance for Google Generative AI by building a C++/SQL pipeline to backfill Customer-managed Encryption Keys (CMEK) across distributed databases, ensuring **zero data loss** and **seamless user experience** during migration
- Conducted **end-to-end testing** to drive its creation and successful launch, taking full accountability for its development and timely release
- Hosted knowledge-sharing sessions, designed, productionized, and **unblock product launches** for two major products: Agent Assist & Dialogflow

Google LLC. — *New York, NY.*

Software Engineering Intern — *Jun. 2022 - Sep. 2022*

- Launched a novel, extensible, and highly available C++ framework for Google Ads, to match RTB Advertisement Size requests to advertisers, serving **millions of queries per second**. Integrated with existing advertisement serving platforms for seamless customer experience
- Pioneered core design and development through extensive **functional and canary testing** using global traffic-diversion experiments

Cepton Inc. — *San Jose, CA.*

Software Engineering Intern — *Jul. 2021 - Sep. 2021*

- **Surpassed calibration precision by 60%** compared to customer specification, by designing optical sensor extrinsic calibration software through **machine learning analysis of LiDAR point cloud**. Performed data analysis on real-time network data using Python, NumPy, Scikit
- Trained Gaussian & Kernelized models and optimized preprocessing using K-Means clustering & Bounding Box regressions

Certificates & Awards

Gold Division	USA Computing Olympiad (USACO) – One of the top in a national programming competition	*Online*
Scholarship	Ann Tsu-Ann Tai and Kam Sing Tso Centennial Undergraduate Scholarship in Computer Science	*Los Angeles, CA.*
4th Place Team	Texas University Interscholastic League (UIL) Invitational in Computer Science	*Houston, TX.*

Skills

Proficient	C++, C, Java, HTML, CSS, Python, Bash, SQL, Django
Familiar	Docker, Kubernetes, Nginx, JavaScript, React.js, MongoDB, OpenCV, OpenMP, NumPy, Verilog, Lisp, Haskell, MapReduce
Tools Used	AWS, GCP, Terraform, DigitalOcean, Cloudflare, Git, Mercurial, Balena, Heroku, Raspberry Pi, Windows & UNIX Environment