DANIEL ZARRINI

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💼 WORK EXPERIENCE

Google Payments, Tokyo, JP   April 2022 - November 2025
Software Engineer
- Engineered a near real-time disbursement algorithm with automated bank account rebalancing, transforming a batch process into an event-driven system handling 10,000+ transactions daily
- Designed and implemented robust authentication and authorization mechanisms, securely onboarding 6 external payment partners
- Led infrastructure planning, capacity analysis, and performance testing for production releases

Google Ads, Mountain View, CA   March 2020 - April 2022
Software Engineer
- Enhanced the Google Ads pipeline, ensuring extreme reliability and low-latency service for hundreds of millions of customers
- Built a high-availability data storage and disaster recovery system for upstream teams
- Engineered a 40% increase in data ingestion system bandwidth through advanced sharding, partition balancing, and dynamic traffic shaping mechanisms
- Increased query performance by approximately 200% via indexing, optimal caching, and data restructuring

Google Cloud, Sunnyvale, CA   February 2018 - March 2020
Software Engineer
- Led a technical team within Google Cloud Platform's Networking Organization
- Contributed to the GCP Control Plane, meeting strict low-latency and high-availability requirements
- Architected the transformation of a data processing pipeline from a periodic batch to a real-time, edge-triggered system
- Optimized existing systems, significantly reducing CPU utilization by 33% and latency by 1000x
- Recipient of Google Cloud Feat of Engineering Award

NetScout Systems, Colorado Springs, CO   January 2017 - February 2018
Software Design Engineer
- Developed algorithms for determining nearest switch and packet flow envelopes across the network
- Built a data processing pipeline responsible for handling 20K EPS with near real-time event delivery

🗄 TECHNICAL STRENGTHS

- **Programming:** C++ == Java > Python == Ruby
- **Databases:** Google Spanner, MongoDB, MySQL, PostgreSQL
- **Cloud:** AWS (EC2, S3, Lambda), GCP (Google App Engine, GCE, Cloud Spanner), Terraform

🎓 EDUCATION

Colorado School of Mines, Golden, CO   August 2012 - August 2016
Major: Computer Science and Petroleum Engineering   Overall GPA: 3.815
Magna Cum Laude and Dean's List

🚀 PATENTS AND INVENTIONS

Plato Anomaly Detection, Patent Number 10467087   2017
Developed monitoring technology using adaptive statistical analysis to reduce false positives and accurately detect data center infrastructure anomalies.

⚙ NOTABLE PROJECTS

- **Celestial Sphere** Interactive 3D visualization of 10,000 stars from the Hipparcos Star Catalog.
- **High FPS GIF** Benchmarked GIF89a animation frame rate limits across modern browsers.
- **Lichess Analysis** Statistical analysis of 201M+ chess games to visualize key board squares.
- **Ultimate word in Wordle** Applied information theory to find the optimal Wordle opening word.
- **Lost in Yamanote** Geospatial analysis to find the point farthest from any Tokyo train station.
- **Catch Pikachu** Built a game using the PICO-8 fantasy console with Lua and collision physics.