Ryan Dielhenn

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Technical Skills

Languages	Go, Rust, Java, C, Python, Scala, SQL
Infrastructure	Docker, Linux Systems Administration, Prometheus, Grafana, Git, Kafka, etcd, DuckDB, Scripting/Automation (Python, Bash)
Networking	TCP/IP, UDP, BGP, OSPF, DNS, DHCP, Gossip Protocols, Phi-accrual Failure Detection
Concepts	Distributed Systems, High-Performance Data Processing, Network Observability, Cluster Replication, API Design

Projects

SlateDB & OpenData

Open Source Contributor *February 2026 – Present*

- Contributing to SlateDB, an embedded key-value storage engine on object storage; simplified the builder API by consolidating compactor configuration, improving developer experience.
- Contributing to OpenData, a collection of databases sharing a unified object storage foundation via SlateDB; implemented TSDB benchmarks, added scalar argument support for PromQL expressions, and Prometheus metadata API support.

ZephyrCache

Distributed Systems Project *July 2025 – Present*

- Built a distributed cache in Go with consistent hashing for request routing and etcd for dynamic node registration, service discovery, and lease-based failure detection.
- Achieved 49k ops/sec with 32 concurrent clients over HTTP, benchmarked on a virtual Docker bridge network with inter-node latency monitoring.
- Deployed a Prometheus/Grafana observability stack to monitor network throughput, HTTP latency distributions, and container resource utilization across nodes.

Experience

Confluent *Mountain View, CA*

Software Engineer *January 2021 – July 2022*

- Contributed to Apache Kafka's migration from ZooKeeper to KRaft, improving observability and reliability of the distributed consensus layer in Java/Scala.
- Built metrics pipelines in Java/Scala to monitor cluster health, quorum state, and inter-broker communication patterns for KRaft; updated Confluent Cloud tooling in Go to integrate new metrics.
- Contributed to Confluent Cloud's Cluster Linking integration with KRaft architecture for cross-cluster replication.

Confluent *Mountain View, CA*

Software Engineering Intern *May 2020 – August 2020*

- Implemented dynamic client reconfiguration in Java/Scala for Apache Kafka, enabling runtime updates to producer/consumer settings (including connection, security, retry, and ack configurations) without service restarts.
- Enhanced Confluent Cloud's rebalance tooling with asynchronous replica movement support.
- Continued contributing to Apache Kafka during Fall 2020 while completing undergraduate degree.

University of San Francisco *San Francisco, CA*

Undergraduate Researcher *January 2020 – May 2020*

- Developed a C implementation of Geopresence, a bitmap-based geospatial indexing system using RoaringBitmap compression and HyperLogLog++ for efficient location queries on IoT devices.
- Implemented C-based adaptive grid index achieving 17x speedup over Java; outperformed R-tree indexing by 400x at scale (1M+ points) while R-trees showed advantages on sparse datasets (<7K points).

Education

California State University, Los Angeles *Los Angeles, CA*

M.S. in Computer Science (In Progress), GPA: 4.0 *Expected 2026*

- **Thesis:** Machine Learning Approaches to Trust and Reputation in Networked Environments.
- Developing a bare-metal Raspberry Pi cluster to evaluate Byzantine Fault Tolerance using UDP-based Gossip protocols and Phi-accrual failure detection.
- Relevant Coursework: Advanced Computer Networking (BGP, OSPF, TCP/IP), Software Engineering, Artificial Intelligence, Machine Learning.

University of San Francisco *San Francisco, CA*

B.S. in Computer Science, Minor in Mathematics, GPA: 3.75 *2016 – 2020*

- Relevant CS Coursework: Operating Systems, Computer Architecture, Data Structures & Algorithms, Big Data, Software Development, Programming Language Paradigms, Senior Capstone
- Relevant Math Coursework: Linear Algebra, Formal Methods (Logic and Proof), Calculus I & II, Modern Algebra