

Ryan Dielhenn

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Experience

Confluent

SOFTWARE ENGINEER

- Collaborated across engineering teams to improve reliability, observability, and security during Kafka's transition to a ZooKeeper-free architecture (KRaft).
- Adapted Cluster Linking to support KRaft, enabling cross-cluster replication without ZooKeeper.
- Integrated metrics pipelines to monitor cluster health and quorum state in KRaft mode.

Mountain View, CA

January 2021 – July 2022

Confluent

SOFTWARE ENGINEERING INTERN

- Improved Kafka usability as a Summer 2020 intern by implementing dynamic client reconfiguration, allowing clients configurations to be updated without restarting producer and consumer clients.
- Enhanced Confluent Cloud's rebalance tooling with asynchronous replica support.
- Continued contributing to Apache Kafka during Fall 2020 while completing my undergraduate degree.

Mountain View, CA

May 2020 – August 2020

University of San Francisco

RESEARCH ASSISTANT

- Conducted research on distributed systems and edge computing architectures under faculty supervision.
- Designed and implemented a geospatial indexing system (Geopresence) optimized for IoT and low-power devices, using RoaringBitmap for bitmap compression and HyperLogLog++ for approximate cardinality estimation.
- Benchmarked prototypes and demonstrated hyper-local, location-aware queries (e.g., retrieving air quality data directly from nearby sensors instead of centralized APIs).

San Francisco, CA

January 2020 – December 2020

TEACHING ASSISTANT — BIG DATA & OPERATING SYSTEMS

- Led weekly office hours, provided project design/debugging support, and evaluated student assignments.

August 2019 – May 2020

ASSISTANT SYSTEMS ADMINISTRATOR

- Automated updates and maintenance tasks for Linux lab machines, reducing manual overhead for IT staff.
- Diagnosed and resolved hardware/software issues for faculty and students in a high-demand academic environment.

May 2019 – August 2019

Projects

EDA Dashboard

Los Angeles, CA

HIGH-PERFORMANCE DATA EXPLORATION TOOL

September 2025 - Present

- Developed an interactive data exploration dashboard using FastAPI and DuckDB to make large-scale dataset analysis intuitive and efficient.
- The platform includes dedicated modules for exploring data distributions, uncovering correlations, assessing fairness, and detecting data drift.
- Leveraged DuckDB's columnar storage and query optimization to enable sub-second browser-based analysis of datasets with millions of rows without loading entire datasets into memory.

Zephycache

Los Angeles, CA

A SELF-HEALING DISTRIBUTED CACHE

August 2025 - Present

- Designing and building a distributed caching system in Go using consistent hashing, with automatic rebalancing and fault tolerance.
- Integrating etcd for cluster membership, lease management, and peer discovery to ensure coordination and liveness guarantees.
- Developing monitoring and benchmarking tools to measure routing efficiency, replication overhead, and recovery times under simulated failures.
- Planning a gossip-based membership and failure detection subsystem to reduce reliance on centralized coordination and improve scalability.

Education

California State University, Los Angeles

Los Angeles, CA

M.S. IN COMPUTER SCIENCE (IN PROGRESS)

Expected 2026

- Relevant Coursework: Advanced Artificial Intelligence, Advanced Software Engineering, Data Science

University of San Francisco

San Francisco, CA

B.S. IN COMPUTER SCIENCE, MINOR IN MATHEMATICS, GPA: 3.75

2016 – 2020

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

Technical Skills

Languages Java, Scala, Go, C, Python, JS

Technologies Kafka, Spark, Docker, Git, Netty

Concepts Distributed Systems, Systems Design, ML