

Xiong Ding

PHYSICS PH.D. • SOFTWARE ENGINEER

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Skills

Programming : C++, Python, Java

Skills : Kafka, Mysql, Postgres, ElasticSearch, Kubernetes

Industry Experience

Ziphq **Software Engineer** **San Francisco, CA, USA** **04/18/2022 – Present**

Infrastructure _____

- **Tech Lead of Core Infra**
 - Mentor junior engineers, help them become domain owners, and guide them toward success.
 - Quarterly team planning; accountable for priorities, execution, and outcomes.
 - Debug the most challenging technical issues and production bugs.
- **Launches & Major Projects**
 - Design the traffic routing strategies in a multi-cell/datacenter setup.
 - Migrated Ziphq's primary database from MySQL to Aurora PostgreSQL, improving performance and scalability.
 - Introduced Kafka; built the company-wide streaming platform and inbound webhook framework.
 - Drove adoption of database CDC streams across multiple product teams.
 - Upgraded Kubernetes from v1.19 → v1.24.
 - Built numerous internal productivity tools for product engineering teams.
- **Tools & Technologies:** Python, Kafka, Postgres, Kubernetes

Citadel LLC **Software Engineer** **Chicago, IL, USA** **09/03/2019 – 03/18/2022**

Reconciliations and Control infra team _____

- **Build rec&control system v3:**
 - Co-designed the new reconciliation system from scratch; transferred domain knowledge from the legacy system to new team members.
 - Built core infrastructure components: Kafka C++ client, Datadog C++ client, logging modules, and more.
 - Developed the core matching service using Apache Arrow; optimized the hot path for maximum runtime performance.
- **Other responsibilities:**
 - Main contributor for disaster recovery (DR) planning and execution. Successfully executed multiple data center failovers with zero user impact.
 - Maintained and enhanced the v2 system; acted as POC for production issues.
 - Automated Futures/Options, FTR (Financial Transmission Right), and other OTC product reconciliation workflows.
- **Tools & Technologies:** C++ Boost, Apache.Arrow, Spring Boot, MS SQL server, Kafka

Airbnb **Software Engineer** **San Francisco, CA, USA** **05/22/2017 – 08/27/2019**

Search ranking team _____

03/01/2019 – 08/27/2019

- **Main contribution:**
 - Migrated the heaviest batch job from RDD to Dataset, reducing runtime from 3 hours to 30 minutes.
 - Developed a new method to attribute user searches to final bookings, doubling the size of training data.
- **Tools & Technologies:** Spark, Hive, Airflow, Scala

Home infra team _____ **05/22/2017 – 2/28/2019**

- **Technical owner of the review platform:**
 - Built the next-generation review service supporting multiple business verticals.
 - Migrated 340M+ reviews and 1B+ review categories to a new schema with zero downtime.
 - Partnered with the storage team to build a derived data store offering low-latency aggregated review metrics (counts, rating histograms, etc.), cutting tail latency by 50%.
 - Migrated the EC2-hosted Elasticsearch cluster to AWS-managed Elasticsearch and upgraded the ES version from 1.4.5 → 6.2.1.
- **Tools & Technologies:** Dropwizard, Chef, Airflow, Elasticsearch, Mcrouter Cache, Powergrid(multithreading)

Education

Ph.D. in Physics	GPA: 3.86/4.0	Georgia Institute of Technology	Atlanta, GA, USA	08/15/2012 – 05/05/2017
M.S. in Computer Science & Engineering	GPA: 3.86/4.0	Georgia Institute of Technology	Atlanta, GA, USA	01/01/2016 – 06/01/2016
B.S. in Physics	GPA: 3.75/4.0	Wuhan University	Wuhan, China	09/01/2008 – 06/05/2012

Selected publications

[1] **X.Ding**, H. Chaté, P. Cvitanović, E. Siminos, and K. A. Takeuchi , *Estimating the dimension of an inertial manifold from unstable periodic orbits* , *Phys. Rev. Lett.* **117**, 024101 (2016)

[2] **X. Ding** and P. Cvitanović , *Periodic Eigendecomposition and its application in Kuramoto-Sivashinsky system* , *SIAM J. Appl. Dyn. Syst.* **15**, 1434–1454 (2016)