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)