

# Xiong Ding

PHYSICS PH.D. · SOFTWARE ENGINEER

☎ (+1) 678-882-9228 | ✉ dingxiong203@gmail.com | 🏠 www.cns.gatech.edu/~xiong/ | 🐙 github.com/dingxiong | 🔗 www.linkedin.com/in/xiong-ding

## Skills

**Programming :** C++, Python, Java

**Skills :** Numerical PDE, Matrix analysis, MS SQL server, Elasticsearch, Kafka, Spark, Airflow

## Industry Experience

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

**Infra structure** \_\_\_\_\_

- **Onboard Kafka and build a streaming platform**
  - Onboard AWS MSK and wrap the producer/consumer library to be used our engineers.
  - Set up database CDC and use mutation events from database to drive various async computations.
- **Onboard OLAP database Clickhouse**
  - Evaluate various OLAP databases and chose Clickhouse to power Zip insight functionality.
- **Used framework & tools:** AWS, Kafka, Clickhouse, Kubernetes

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

**Reconciliations and Control infra team** \_\_\_\_\_

- **Build rec&control system v3:**
  - Help design the new reconciliation system from scratch. Share my knowledge about the old system to all new members in the team.
  - Build infra components of the new system such as Kafka C++ client, datadog C++ client, logging module and so on.
  - Help build the core matching C++ service using Apache Arrow. Optimize the matching process, especially the hot path to reduce run time as much as possible.
- **Disaster Recovery:**
  - Main contributor for disaster recovery (DR) planning and execution.
  - Write the scripts that submit CName change requests, change load balance configuration, sync files between different data centers, and etc.
  - Successfully switch R&C data centers multiple times with no user impact.
- **Other responsibilities:**
  - Maintain v2 system and add business features on a regular basis. Maintain a good relationship with business side and act as POC for production issues.
  - Help automate Futures/Options, FTR (Financial Transmission Right), and a few other OTC products reconciliation process.
- **Used framework & tools:** C++ Boost, Apache.Arrow, Spring Boot, multithreading, MS SQL server, Kafka, Datadog

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

**Search ranking team** \_\_\_\_\_

**03/01/2019 – 08/27/2019**

- **Main contribution:**
  - migrate the heaviest job from RDD to Dataset, whose runtime was reduced from 3h to 30m.
  - Use a new way to attribute user searches to their final bookings, which doubled the size of training data.
- **Used framework & tools:** Spark, Hive, Airflow, Scala

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

- **Main contributions:**
  - Build the next generation of review service for Airbnb. This is a review platform that supports different business verticals' reviews. We had successfully migrated 340+M reviews and 1B+ review categories to new review schema without downtime.
  - Collaborate with storage team to setup the derived data store to provide real-time review aggregated data, i.e., review counts, review rating histogram and so on, which improved the tail latency by half.
  - Migrate AWS EC2 review Elasticsearch cluster to AWS managed ES cluster. Also upgrade ES version from 1.4.5 to 6.2.1
- **Used framework & tools:** Dropwizard, Chef, Airflow, Elasticsearch, Mcrouter Cache, Powergrid(multithreading)

## Education

Ph.D. in Physics		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)