# Nan Qin

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## SKILLS

Programming Languages: Java, C#, JavaScript, Python, Bash, C/C++, Clojure, SQL.
Framework: ASP.NET, Entity Framework, Node.js, D3, Angular, Hadoop, Spark, Zookeeper, Apache Thrift.
Software: Git & Github, Elasticsearch, PostgreSQL, MongoDB, Redis, OAuth, Docker, Nginx, Amazon AWS.
Specific Skills: Algorithms & Data Structures, Cloud Development, Web Development.

## EXPERIENCES

Software Engineering Intern — Kabbage Inc, Atlanta, Georgia
June 2019 – August 2019

- Worked with senior engineers to develop Kabbage data platform using ASP.NET and Entity Framework. Code was integrated into real products and deployed into production environment.
- Added a retry policy when loading user bank transactions, which avoided inconsistent failure.
- Migrated the bank search service to Elasticsearch, which largely increased throughput compared to the original regex match with SQL database.

Undergraduate Research Assistant — Distributed Computing Systems Group, University of Minnesota
January 2018 – May 2018

- Implemented a quorum and eventual consistency models for Wiera distributed storage system.
- Designed a dynamic quorum selection, which reduced latency by 30% compared to a random selection.
- Responsible for writing Wiera tutorials and creating testcase.

## PROJECTS

1. Linux Web-Based Monitoring (https://monitor.qinnan.dev)

- Used microservices architecture to develop a Linux monitoring system with Node.js and Angular.
- Wrote maintainable code by Implementing separate auth, data access, and permission services and using RESTful APIs for intern-services communication.
- Employed MongoDB to provide flexibility of data schema compared to a traditional RDBMS.

2. PubSub Framework

- Used Apache Thrift API to construct a publish-subscribe system focused on throughput and fault tolerance.
- Utilized Redis to cache client metadata along with multithreading in the client-side library, which improved throughput by 40%.
- Achieved fault tolerance by using Zookeeper with backup servers and logging.

3. Visualization of Ford GoBike (https://gobike.qinnan.dev)

- Visualized Ford GoBike dataset with D3 and Leaflet map to help the analysis of bike distribution.
- Reduced the original CSV raw data size by 80% with a compressed data structure.
- Employed heatmaps and interactive bar charts to efficiently present the usage trending.

## EDUCATION

Computer Science, Master of Science — September 2018 – Expected **December 2019**
Georgia Institute of Technology — GPA: 3.88

Computer Science, Bachelor of Science — September 2015 - May 2018
University of Minnesota, Twins Cities — GPA: 3.88

### Relevant Coursework

1. Algorithms & Data Structures 2. Program Design & Development. 3. Operating Systems. 4. Mobile & Ubiquitous Computing 5. Special Issues in Could Computing 6. Programming Languages 7. Information Visualization.