Tianchen Zhong

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Education

Carnegie Mellon University (CMU) Pittsburgh, PA

Master of Science in Information Networking; GPA: 3.95/4.0 Aug. 2017 - May 2019

- **Related Courses**: Intro to Computer Systems, Cloud Computing, Search Engine, Distributed System, Artificial Intelligence, Practical Data Science

Southeast University (SEU) Nanjing, China

Bachelor of Engineering in Information Engineering; GPA: 3.89/4.0 (91.64/100) Aug. 2013 - June 2017

- **Related Courses**: Data Structures and Algorithm, Database System, Machine Learning, Computer Architecture, BigData, Computer Vision, Computer Network

Skills

- **Programming Language**: Java, Python, C, JavaScript, SQL, Golang, Scala
- **Cloud**: AWS: EC2, S3, Lambda, DynamoDB, RDS, EMR, Azure: CosmosDB, Functions, App service,Blob Storage, Event Hubs, GCP: Dataproc, Compute Engine, Kubernetes Engine, Datastore, Functions
- **DataBase and Big Data**: MySQL, HBase, MongoDB, CosmosDB, Spark, Hadoop MapReduce, Kafka

Internship

Walmart Inc Bentonville, AR

Software Engineer Intern in Sam's Club Cloud infrastructure team May - Aug. 2018

- Developed **Azure CosmosDB** resource auto scaling system both backend and frontend with **Java Spring** Framework and **ReactJS**, reducing 70% cost by only using high capacity in scheduled time.
- Designed and Implemented **RESTful API** and highly scalable backend that can manage autoscaling of 1000's of **CosmosDB** instances with **Azure Web App**, **CosmosDB**, **Functions**, **Event Hubs**.
- Won third prize in Walmart Codeception Hackathon with implementing Java backend for a location focused social media platform for Walmart associates.

Projects

Twitter Analytics Web Service Feb. - May 2018

- Performed data Extracted, Transform and Load on 300 million (1TB) of raw tweet messages using **Spark**.
- Built a RESTful web service using Undertow framework, with **MySQL** and HBase as back-end on **AWS**.
- Applied load balancing strategy to handle 4 types of intensive read/write queries and achieved an average of 10,000 QPS (queries per second) in 2 hours live test, within a maximum cost of $0.85/h on **AWS**.
- Optimized web service by using thread pool, refining database schema, tuning parameters on backend database. Utilized **JMeter** as load generator to test our web service.

Lucene Based Search Engine Jan. - May 2018

- Implemented a text-based search engine indexed with Lucene API on corpus of 500, 000 + documents from ClueWeb09 dataset in **Java**.
- Developed a custom search engine with diversification, query expansion and learning to rank capability, supporting retrieval models including Ranked Boolean, BM25, and language statistic model like Indri.
- Evaluated the models developed by varying parameter values, analyzed trends, ambiguities discovered from the conducted experiments.

HayStack File System Implementation Mar. 2018 - Apr. 2018

- Designed and implemented HayStack Photo File System in Facebook paper with **Golang**.
- Utilized **Cassandra** and **Redis** to emulate object file system in cloud virtual machine.

University Chatbot May - July 2017

- Designed a chatbot to answer questions related to my university via Microsoft Bot Framework in **C#**.
- Developed a **Python** web crawler to extract information from websites and saved them in **SQL server**.
- Implemented natural language processing to analyse key words in the question improved answers correctness, deployed the service on **Azure**, achieving top 32 out of 1000 in Beauty of Programming competition.