Binyao Jiang

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Education

University of Illinois at Urbana-Champaign (UIUC), Champaign, IL **[09/2019 – 05/2021]**

Master of Science in Computer Science

- Overall GPA: 4.0/4.0

Shanghai Jiao Tong University (SJTU), Shanghai, China **[09/2015 – 06/2019]**

Bachelor of Science in Computer Science

- Overall GPA: 3.85/4.0 Major GPA: 3.97/4.0 Rank: 4/142
- Zhiyuan Honor Degree; National Scholarship (2016, 2017); Academic Excellence Scholarship Type A (2016).

Work Experience

Internship at Linkedin: Apache Samza Stream Processing Framework **[05/2020 – 08/2020]**

- Developed a **log4j2** appender inside Samza library to programmatically create output **Kafka** topic and convert all incoming user logs and framework logs to Avro schema compatible logs and write to Kafka.
- Collaborated frequently with other teams to finalize the design, interface and rollout plans.
- With the proposed log4j2 appender, **thousands of** Samza jobs inside Linkedin can migrate their Samza logs to Linkedin centralized logging platform for log aggregation, log search and log visualization.

Teaching Assistant at UIUC: CS498 DSO Cloud Computing Applications **[01/2020 – 05/2020]**

- Improved and maintained **Docker** based autograder for **Hadoop** and **Storm** course projects.

Research Assistant at UIUC: NetFlash **[01/2020 – 05/2020]**

- Designed and built datacenter-level network-storage co-scheduling system to minimize the impact of network congestion and storage garbage collection.

Internship at Microsoft: Linux FPGA High Performance Driver **[07/2018 – 01/2019]**

- Designed and implemented ring-buffer communication interface with high throughput and low latency, including features of kernel bypass and interrupt support in user space. Achieved **25Mpps** throughput with a small batch size.
- Integrated into **RocksDB** and **FIO** (Flexible I/O tester) to show system's performance under different workloads.
- Integrated into revised **Caffe** where JPEG decoding is offloaded to FPGA. Training with one NVIDIA P100 GPU, approximately **7 CPU cores** could be saved.
- Published in **ACM ICPP** 2019.
- Won **Award of Excellence** in Microsoft Research Asia Internship Program.

Research Assistant at SJTU: QR Codes Batch Reading APP **[05/2018 – 07/2018]**

- Presented a lightweight IFFT based QR code detection algorithm to identify each code in a batch QR codes image.
- Accelerated with parallel computing framework **RenderScript** which makes detection **14x** faster.
- Proposed an effective QR code tracking mechanism in preview mode to improve decoding accuracy.
- Implemented as an Android APP which can reading 1-160 QR codes in batch with **~95%** accuracy in **100-400ms**.
- Published as the first author in **IEEE INFOCOM** 2019.
- Won Best Mobile App Award in **ACM MobiCom** 2018.

Projects

RESTful and REACTive Web App **[01/2020 – 05/2020]**

- Created a **React** app containing list views, gallery views and detail views that allows users to query, view and filter different Pokemons by calling **RESTful** Pokemon API.
- Implemented DBMS RESTful API support based on **Node**, **Express** and **Mongoose**.

Distributed MapReduce-like System **[09/2019 – 12/2019]**

- Built a simple distributed **MapReduce**-like system from scratch using C++ with a naïve scheduler.
- Implemented a distributed log querier to grep all the log files across all machines.
- Developed a gossip-style heartbeating protocol for membership maintenance and failure detection.
- Created a reliable simple distributed file system with replica control, data block support and file caching.

Technical Skills

- **Programming Languages:** C/C++, Java, Python, HTML/CSS/JavaScript, Matlab, Verilog.
- **Tools:** Linux, Samza, Kafka, log4j2, Docker, Hadoop, Storm, Android SDK, Git, React, Node, Express, Mongoose.