Jiawei Zhang

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**Education**

**Huazhong University of Science & Technology** Sep.2018 – Jun.2021

Master of Computer Architecture GPA: 3.86/4 (Rank 11/55)

**Chang’an University** Sep.2014 – Jun.2018

Bachelor of Network Engineering GPA: 3.84/4 (Rank 1/32)

**Technical Skills:** C/C++(4yrs), Python(2yrs), Linux, Vim, Git, Shell, GDB, CMake.

**Work Experience**

* **Tencent Inc., Shenzhen** **Jul.2019 – Present**

***Backend development Intern***

* [**Static CDN Cache Model System**] Developed a distributed log replay-based cache model analysis system to generate MRC (*Miss Ratio Curve*). **Python** handles logical transactions, and **C++** programs are responsible for computing tasks. The main novelty is to learn from the idea of MapReduce and decompose tasks for **parallel** **computing** to save hardware resources.
* [**Characterizing CDN Cache Workloads**] Conducted detailed analysis of the IO workload from multi-tiers of the CDN cache from the perspective of recency and frequency, and applied different cache strategies (FIFO, LRU, SLRU, BloomFilter, etc.) to evaluate cache performance to gain best caching configuration for different workload characteristics. When SLRU is applied, the miss ratio can be reduced by 10%.

**Projects**

* **SSD Based Photo Cache Optimization**, Group Research Project  **Sep.2018 – Apr.2020**
* Proposed an admission policy called “one-time-access-exclusion”, filtered one-time access photos, to improve cache space utilization and reduce invalid writes to SSDs after analyzing the access of characteristics of QQ albums.
* Used **machine learning** methods with some social information in the photos to train a classifier which could predict whether the photo is one-time-access or not, and its **accuracy is over 85%**.
* Applied this classifier to cache with basic replacement algorithms could **improve the hit rate by about 2.7% to 20.9%** relatively, and **the amount of data written to the SSD was significantly** **reduced about 59.7% to 87.3%** relatively.

The paper was published in [ACM Transaction on Storage](https://dl.acm.org/doi/10.1145/3397766) .

**Activity**

* **Teaching assistant in HUST** **May – Jun.2019/2020**
* Worked as a TA for bachelor course “Algorithm Analysis and Design”. Mainly responsible for the preparation and teaching of experimental lessons.
* In order to create a good experimental environment, write experimental framework code using **C++** to test and verify students’ code.

**Awards**

* National Scholarship 2015
* National Inspirational Scholarship 2016/2017
* ACM 2nd prize of Chang’an University 2017
* Outstanding graduates of Chang’an University 2018.
* Outstanding thesis award of Chang’an University 2018.