Guochao Xie

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EDUCATION

The Chinese University of Hong Kong, Shenzhen

Bachelor of Science in Computer Science and Engineering, GPA: 3.837, Major GPA: 3.928   09/2017 – 05/2021

- Dean's List (2018, 2019) | Academic Performance Scholarship (Class B) (2018, 2019)
- **UG Student Teaching Fellow:** *Data and Knowledge Management, Computational Laboratory (Python), Data Structures and Algorithms, Programming Paradigms(C++).*

University of California, Berkeley   06/2019 – 08/2019

Summer Session, GPA: 4.000

Relevant Courses: *Operating System and System Programming, Game Theory, Programming, Computer Architecture, Database, Cloud Computing, Parallel and Distributed Computing, Software Engineering, Blockchain.*

PROJECTS

The Chinese University of Hong Kong, Shenzhen | Shenzhen, China   02/2020 – 07/2020

Undergraduate Researcher, supervised by Prof. Yeh-Ching Chung

- **Research Topic**: A hybrid expired-key eviction algorithm to significantly reduce the memory usage for in-memory key-value database.
- Analyze the randomized expiration algorithm adopted by the latest implementation of Redis.
- Propose a novel bucket-based hybrid algorithm and implement it on the stand-alone Redis 5.0.
- Add a new feature to YCSB to support data expiration generation and complete the experiments alone.

Shenzhen Research Institute of Big Data | Shenzhen, China   02/2019 – 05/2020

Undergraduate Researcher, supervised by Dr. Yupeng Li

- **Research Topic**: Activity-Sharing Ride Sharing: an innovative ride sharing model and its heuristic algorithm.
- Propose ASRS, an innovative way of ride sharing developed from the Activity-based Ride Sharing, where each passenger is also an activity participant and our system tries to join different passengers with the same activity together for the win-win-win paradigm between passengers, business and our system.
- Model the whole problem as a Binary Integer Programming and show it is NP hard.
- Propose a heuristic algorithm to solve the problem.
- **Result**: two patents for the model and the algorithm respectively submitted by Didi Chuxing.

Interdisciplinary Contest in Modelling (MCM/ICM)   01/2019

- Lead a three-person team to design an evacuation plan for Louvre based on MST, implement and simulate its performance using Python in 120 hours. **Result**: Meritorious Winner

PUBLICATIONS

Xie, Guochao. Chung, Yeh-Ching. *Bucket-Based Expiration Algorithm: Improving Eviction Efficiency for In-Memory Key-Value Database.* In **The International Symposium on Memory Systems (MEMSYS) 2020.**

WORKING EXPERIENCE

Shenzhen Research Institute of Big Data | Shenzhen, China   06/2018 – 08/2018

Software Engineer Intern

- **Topic:** CUHK(SZ) Campus Heatmap Mini App.
- Design and implement a campus heatmap application collaborating in a two-person team.
- Use Ajax to query real-time data from RESTful backend and WeChat SDK to build a mobile mini app.
- Have served over 4,500 users for 2 years and could have an estimated monthly revenue of $1000.

SKILLS

Programming Languages: Python, Go, C, C++, JavaScript, MATLAB, SQL, Java.

Frameworks: YCSB, Redis, MxNet, Numpy, Pandas, React, Django, Flask, Gin, MySQL, Markdown, Latex.