# Guochao Xie

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## EDUCATION

**EPFL**

*Master of Computer Science – Software Systems*                                        09/2021 - 07/2023

**The Chinese University of Hong Kong, Shenzhen**

*Bachelor of Science in Computer Science and Engineering*, Rank in Class: 2nd        09/2017 – 07/2021
- Presidential Award for Outstanding Students (2021)
- Dean's List & Academic Performance Scholarship (Class B, 40k RMB) (2018, 2019, 2020)

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

*Summer Session*, Courses: *Operating System and System Programming, Game Theory.* GPA: 4.000

## PROJECTS

**Semester Project Student,** *supervised by Prof. Sanidhya Kashyap*                   09/2021 – now

Robust Scalable Systems Software Lab EPFL | Lausanne, Switzerland
- Ongoing project in Linux kernel scalability.

**Bucket-Based Expiration Algorithm,** *supervised by Prof. Yeh-Ching Chung*           02/2020 – 07/2020

The Chinese University of Hong Kong, Shenzhen | Shenzhen, China
- **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.

**Activity-Sharing Ride Sharing,** *supervised by Dr. Yupeng Li*                       02/2019 – 05/2020

Shenzhen Research Institute of Big Data | Shenzhen, China
- **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 problem as a Binary Integer Programming and show it is NP hard and propose a heuristic algorithm.
- **Result**: two patents for the model and the algorithm respectively submitted by Didi Chuxing.

## PUBLICATION

**Xie, Guochao**. Chung, Yeh-Ching. *Bucket-Based Expiration Algorithm: Improving Eviction Efficiency for In-Memory Key-Value Database.* **https://doi.org/10.1145/3422575.3422797**.

## WORKING EXPERIENCES

**CTO of Start-Up**                                                                    07/2020 – now

Apartsa Co. Ltd. | Shenzhen, China
- Leader of the technical team of 5 students.
- **Graduation Album Project (2021)**: Reach over **600,000 active users** in **5** days. Build with *serverless* framework and maintain with a budget of **$50 per month**. Collaborate with another 2 experienced designer and programmer.

**UG Student Teaching Fellow**                                            09/2019 - 05/2021

The Chinese University of Hong Kong, Shenzhen | Shenzhen, China

- **Teaching Courses**: *Data and Knowledge Management, Computational Laboratory (Python), Data Structures and Algorithms, Programming Paradigms(C++), Computer Organization and Architecture.*
- Hold tutorial sessions for 1-2 hours weekly and provide office hours in English.

**Software Engineer Intern**                                             06/2018 - 08/2018

Shenzhen Research Institute of Big Data | Shenzhen, China

- **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 (Excellent):** Python, Go, C, C++, JavaScript.

**Programming Languages (Good):** MATLAB, Java, SQL, Scala, Rust.

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