Keyun CHENG

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ABOUT ME

Keyun Cheng is a Ph.D. student supervised by Prof. Patrick P. C. Lee. He is a member of Applied Distributed System Lab (ADSLab). He received the B.Eng degree in Software Engineering from Sun Yat-Sen University in 2018, the M.Sc. degree in Computer Science from The Chinese University of Hong Kong in 2019. His research interests include distributed storage systems and erasure coding.

EDUCATION BACKGROUND

Aug. 2020 – Current	**THE CHINESE UNIVERSITY OF HONG KONG (CUHK)**	**Department of Computer Science and Engineering**
	Major: Ph. D. in Computer Science and Engineering	**GPA**: N/A **Ranking:** N/A
Sep. 2018 – Nov. 2019	**THE CHINESE UNIVERSITY OF HONG KONG (CUHK)**	**Department of Computer Science and Engineering**
	Major: M.Sc. in Computer Science	**GPA**: 3.80/4.00 **Ranking:** top 3
Sep. 2014 – June. 2018	**SUN YET-SEN UNIVERSITY (SYSU)**	**School of Data & Computer Science**
	Major: Software Engineering	**GPA**: 3.8/4.0 **Ranking:** 31/122

PUBLICATIONS

- **ParaRC: Embracing Sub-Packetization for Repair Parallelization in MSR-Coded Storage**
  Xiaolu Li, **Keyun Cheng**, Kaicheng Tang, Patrick P. C. Lee, Yuchong Hu, Dan Feng, Jie Li, and Ting-Yi Wu.
  Proceedings of the 21st USENIX Conference on File and Storage Technologies (FAST 2023), Santa Clara, CA, US, February 2023.
- **Balancing Repair Bandwidth and Sub-packetization in Erasure-Coded Storage via Elastic Transformation**
  Kaicheng Tang, **Keyun Cheng**, Helen H. W. Chan, Xiaolu Li, Patrick P. C. Lee, Yuchong Hu, Jie Li, and Ting-Yi Wu.
  Proceedings of IEEE International Conference on Computer Communications (INFOCOM 2023), New York, US, May 2023.
- **Fast Predictive Repair in Erasure-Coded Storage: Analysis, Design, and Implementation**
  Xiaolu Li, **Keyun Cheng**, Zhirong Shen, and Patrick P. C. Lee
  IEEE Transactions on Parallel and Distributed Systems (TPDS), 33(12), pp. 3400-3414, December 2022.
  (An earlier version appeared in DSN 2019)
- **Incorporating Temporal Prior from Motion Flow for Instrument Segmentation in Minimally Invasive Surgery Video**
  Yueming Jin, **Keyun Cheng**, Qi Dou, Pheng Ann Heng.
  Medical Image Computing and Computer Assisted Intervention (MICCAI), 2019, (**Oral**)

HONORS AND AWARDS

2020	● CUHK Postgraduate Studentship
2019	● Dean's List Scholarship, M.Sc. in CS, CUHK
2019	● First Prize Winner (top 3) of Distinguished Academic Performance Scholarship, M.Sc. in CS, CUHK
2017	● Second Class Scholarship of SYSU
2017	● Meritorious Winner of Mathematical Contest in Modeling
2016	● First Class Scholarship of SYSU
2016	● Third Prize of China Undergraduate Mathematical Contest in Modeling
2016	● Honorable Mention of Mathematical Contest in Modeling
2015	● Third Class Scholarship of SYSU
2015	● Third Prize of ACM programming competition of SYSU

ACADEMIC EXPERIENCE

Jun. 2019 – Present	**Distributed Dependable Storage System: Design and Implementation (Supervisor: Prof. Patrick P. C. Lee), CUHK**	**Group Member**

- We design and build dependable distributed storage systems. While we focus on erasure-coded storage with fault tolerance and storage savings, we design and implement efficient erasure coding schemes

and general techniques to improve the performance in erasure coded storage.

Sep. 2018 – Apr. 2019	**Robotic Surgical Instrument Segmentation (Supervisor: Prof. Pheng-Ann Heng), CUHK**	**Group Member**

- Incorporating temporal information for video segmentation using ConvLSTM and optical flow with standard U-Net-like backbone. Attention map calculated from previous prediction and motion flow may benefit future prediction using a special attention module.
- One paper as second author accepted in MICCAI 2019

WORKING EXPERIENCE

Aug 2019 – Jul. 2020	**CU Coding Limited**	**R&D Engineer**

- Storage technology R&D, especially the multi-cloud storage solution nCloud and DMS on cloud iNAS.
- Assisting the product maintenance and bug fixes
- Customer project management and support

INTERNSHIP EXPERIENCE

Apr 2017 – Jun. 2017 **Research & Development Technology Department of Bigo**

- Designed a crash log upload module in Android Client using Google Breakpad.
- Designed a crash analysis system that can be used to collect crash log from Android Client, make analysis. The results of analysis will be showed on web pages.
- Analyzed network abnormality from Android Client.

Dec 2017 – Apr. 2018 **AI group of Guangzhou Intelligence Communications Technology Co. Ltd. (Teligen)**

- Designed a graphical image annotation tool based on Github open-source project labelImg. The updated version of labelImg can be used to generate contours for objects in images and auto-label them using up-to-date deep learning technologies. Label files can be stored and transmitted using zeroc-ice.

ACTIVITIES

Aug. 2020 –	**CSE Department, CUHK**	**Teaching Assistant**
	AIST3020 Introduction to Computer Systems (Spring 2022, Spring 2023)	
	CSCI1120B Introduction to Computing Using C++ (Fall 2022)	
	CSCI4180 Introduction to Cloud Computing and Storage (Fall 2021)	
Sep. 2015 – Sep.2016	**School of Data & Computer Science, SYSU**	**Teaching Assistant**
	Probablity Theory and Statistics (Fall 2017)	
	Complexity Analysis for Engineering (Spring 2018)	

ADDITIONAL SKILLS

- **English Proficiency:** CET-4: 577 CET-6: 532 IELTS: 7.0 (L: 8.5 R: 7.0 W: 6.0 S: 5.5)
- **Computer Skills:** C C++ Python Java
- **Github:** https://github.com/keyuncheng
- **Hobbies:** Basketball Long-distance Running Guitar