Haoyu Li

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Education

Jun 2020 (Expected)	**Shanghai Jiao Tong University**, Shanghai, China M.E. in Software Engineering, advisor: Prof. Haibo Chen GPA: 3.9 / 4.0
Jun 2018	**Shanghai Jiao Tong University**, Shanghai, China B.E. in Software Engineering, advisor: Prof. Binyu Zang GPA: 3.6 / 4.3

Research Interests

- Programming Languages
- Machine Learning Systems
- Operating Systems
- Computer Architecture

Research Experiences

@Institute of Parallel and Distributed Systems, SJTU, Advisor: Prof. Haibo Chen

Current	A Non-volatile Memory Friendly Garbage Collector Explore assumption mismatches between existing garbage collectors and emerging Intel Optane byte-addressable non-volatile memory. Attempt to improve the GC performance on NVM to a comparable level of DRAM.
Nov 2017 - Jul 2018	ScissorGC: Scalable and Efficient Compaction for Java Full Garbage Collection Solve the region dependency problem and improve object copying efficiency in ParOld GC with up to 5.6X GC throughput improvement and 61.8% application speedup. **Open-sourced at here, and submitted to OpenJDK at here**
Oct 2016 - Oct 2017	Espresso: Brewing Java For More Non-Volatility with Non-volatile Memory Provide a general persistent heap design to manage persistent data in Java runtime, and a safe persistence programming model to persist application data with 256X speedup at best.
Sep 2016 - Dec 2016	Tiger Programming Language Compiler Implement a compiler that compiles Tiger language into X86 assemble code, according to *Modern Compiler Implementation in C*.
Jun 2016 - Sep 2016	JOS: An Exo Kenel Lab Implement booting, memory management, user environments, and preemptive multitasking of an exokernel-like system, according to the course lab from *MIT 6.828 Operating System Engineering*.

@Department of System Software, Alibaba Group, Advisor: Sanhong Li

Sep 2018 - Jul 2019	Platinum: A CPU-Efficient Concurrent Garbage Collector for Tail-Reduction of Interactive Services Utilize idle cores to run mutator threads during Parallel Scavenge GC, and leverage MPK and RTM to protect mutators' concentrated working sets from being collected. Implement a concurrent collector with low CPU consumption.

Publications

[**VEE'19**] <u>Haoyu Li</u>, Mingyu Wu, Binyu Zang, and Haibo Chen. 2019. ScissorGC: scalable and efficient compaction for Java full garbage collection. In Proceedings of the 15th ACM SIGPLAN/SIGOPS International Conference on Virtual Execution Environments

[**APSys'18**] <u>Haoyu Li</u>, Mingyu Wu, and Haibo Chen. 2018. Analysis and Optimizations of Java Full Garbage Collection. In Proceedings of the 9th Asia-Pacific Workshop on Systems
Best Paper Runner Up

[**ASPLOS'18**] Mingyu Wu, Ziming Zhao, <u>Haoyu Li</u>, Heting Li, Haibo Chen, Binyu Zang, and Haibing Guan. 2018. Espresso: Brewing Java For More Non-Volatility with Non-volatile Memory. In Proceedings of the Twenty-Third International Conference on Architectural Support for Programming Languages and Operating Systems

Scholarships and Honors

Oct	2019	National Scholarship, Ministry of Education of China
Jun	2018	Outstanding Graduate, Shanghai Jiao Tong University
Nov	2017	Xin Dong Network Inc. Scholarship
Nov	2017	Academic Progress Scholarship, Shanghai Jiao Tong University
Nov	2017	National Encouragement Scholarship, Ministry of Education of China
Nov	2016	National Encouragement Scholarship, Ministry of Education of China
Nov	2017	Academic Excellent Scholarship, Shanghai Jiao Tong University
Nov	2016	Academic Excellent Scholarship, Shanghai Jiao Tong University
Nov	2015	Academic Excellent Scholarship, Shanghai Jiao Tong University

Teaching Experience

Spring	2019	Teaching Assistant of Operating System(SE315)
Fall	2018	Teaching Assistant of Principle and Technology of Compiler(SE302)

Social Experiences

Nov 2017	Volunteer in Symposium on Operating Systems Principles, Shanghai
Jun 2016 - Sep 2017	Vice-minister of Library Students' Administration Committee, SJTU
Jun 2014 - Jun 2015	Cofounder and President of Martial Arts Association, SJTU