Joontaek Oh

Ph.D. candidate at Department of Electrical Engineering, KAIST, Daejeon, Korea

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RESEARCH INTEREST

Operating System, Linux kernel, Filesystem, EXT4, F2FS, XFS, Journaling, Log-structured Filesystem, Storage, SSD, Database systems, High-Performance storage system, Manycore scalability

EDUCATION

Korea Advanced Institute of Science and Technologies (KAIST)   Daejeon, Korea
Ph.D. candidate, Department of Electrical Engineering   *Mar. 2020 – Present*

Hanyang University   Seoul, Korea
Ph.D student, Department of Computer Software   *Sep. 2018 – Feb. 2020*

Hanyang University   Seoul, Korea
MS, Department of Computer Software   *Mar. 2016 – Aug. 2018*

The Korean Academic Credit Bank System   Seoul, Korea
BS, Department of Information Security Engineering   *Mar. 2013 – Aug. 2015*

PUBLICATIONS

Conferences

- [**USENIX FAST '23**] Joontaek Oh, Seung Won Yoo, Hojin Nam, Changwoo Min and Youjip Won, "CJFS : Concurrent Journaling for Better Scalability", In Proc. of USENIX Conference on File and Storage Technologies (FAST) 2023, Feb, 20-23, 2022
- [**USENIX ATC '22**] Juwon Kim, Minsu Jang, Danish Muhammad Teeshen, Joontaek Oh, and Youjip Won "IPLFS: Log-Structured File System without Garbage Collection", In Proc. of USENIX Annual Technical Conference (ATC) 2022, July. 11-13, 2022
- [**ACM SYSTOR '22**] Seung Won Yoo, Joontaek Oh, and Youjip Won "O-AFA: Order Preserving All Flash Array", in Proc. of The ACM International Systems and Storage Conference (SYSTOR), Haifa, Israel, June. 13-15, 2022
- [**USENIX FAST '22**] Dohyun Kim, Kwangwon Min, Joontaek Oh, and Youjip Won "ScaleXFS: Getting scalability of XFS back on the ring", In Proc. of USENIX Conference on File and Storage Technologies (FAST) 2022, Feb, 22-24, 2022
- [**USENIX FAST '22**] Joontaek Oh, Sion Ji, Yongjin Kim, and Youjip Won, "exF2FS: Transaction Support in Log-Structured Filesystem", In Proc. of USENIX Conference on File and Storage Technologies (FAST) 2022, Feb, 22-24, 2022
- [**ICISS '19**] Myeongseon Kim, Joontaek Oh, Youjip won, "Barrier enabled QEMU", In Proc. of ICISS 2019, Tokyo, Japan, Mar. 2019
- [**USENIX FAST '18**] Youjip Won, Jaemin Jung, Gyeongyeol Choi, Joontaek Oh, Seongbae Son, Jooyoung Hwang, Sangyeun Cho "Barrier Enabled IO Stack for Flash Storage", in proc. of USENIX Conference on File and Storage Technologies (FAST), Oakland, CA, USA, Feb. 12-15, 2018 (Awarded Best Paper)

Journals

- [**ACM TOS**] Youjip Won, Joontaek Oh, Jaemin Jung, Gyeongyeol Choi, Seongbae Son, Jooyoung Hwang, Sangyeun Cho "Bringing Order to Chaos: Barrier-Enabled I/O Stack for Flash Storage", ACM Transactions on Storage (TOS)
- [**ACM TOS**] Jinsoo Yoo, Joontaek Oh, Seongjin Lee, Youjip Won, Jin-Yong Ha, Jongsung Lee, Junseok Shim, "OrcFS: Orchestrated File System for Flash Storage", ACM Transactions on Storage (TOS), Vol. 14, Issue 2, Apr, 2018

Posters and Workshops

- [**ACM APSys '21**] Kyoungho Koo, Joontaek Oh, Kwangwon Min, Youngjin Kwon, Youjip Won, "C2J: Compulsory Compound Transaction for Journaling Filesystem", In Proc. of ACM SIGOPS Asia-Pacific Workshop on Systems (APSys), 2021
- [**USENIX FAST '19**] Joontaek Oh, Wonjong Lee, Youjip Won, "xF2FS: Supporting Multi-File Transaction in Log-Structured Filesystem", In Proc. of 17th USENIX Conference on File and Storage Technologies (FAST), 2019

- [**IEEE NVMSA '18**] <u>Joontaek Oh</u>, and Youjip Won. "Embedded DBMS Design for In-Vehicle Information Management." 2018 IEEE 7th Non-Volatile Memory Systems and Applications Symposium (NVMSA). IEEE, 2018.
- [**USENIX FAST '16**] Jinsoo Yoo, <u>Joontaek Oh</u>, and Youjip Won. "Preserving Bi-Modal Utilization for Segment Cleaning in Modern Log-Structured Filesystem", In Proc. of 14th USENIX Conference on File and Storage Technologies (FAST), 2016

EXPERIENCE

TA, Programming Structure for Electrical Engineering (EE 209) *Korea Advanced Institute of Science and Technologies (KAIST)*	Mar. 2021 – June 2021 *Daejeon, Korea*
TA, Introduction to Operating Systems (EE 415) *Korea Advanced Institute of Science and Technologies (KAIST)*	Sep. 2020 – Dec. 2020 *Daejeon, Korea*
TA, Commissioned Education of IO Subsystem *Samsung Advanced Technology Training Institute*	July 2020 – July 2020 *Suwon-si, Korea*
TA, Unix Kernel Design (EE 488) *Korea Advanced Institute of Science and Technologies (KAIST)*	Mar. 2020 – June 2020 *Daejeon, Korea*
TA, Introduction to Operating Systems (EE 415) *Korea Advanced Institute of Science and Technologies (KAIST)*	Sep. 2019 – Dec. 2019 *Daejeon, Korea*
TA, Commissioned Education of IO Subsystem *Samsung Advanced Technology Training Institute*	June 2019 – June 2019 *Suwon-si, Korea*
TA, Unix Kernel Design (EE 488) *Korea Advanced Institute of Science and Technologies (KAIST)*	Mar. 2019 – June 2019 *Daejeon, Korea*
TA, System Programming (CSE 4009) *Hanyang University*	Sep. 2018 – Dec. 2018 *Seoul, Korea*
TA, Commissioned Education of IO Subsystem *Samsung Advanced Technology Training Institute*	Aug. 2018 – Aug. 2018 *Suwon-si, Korea*
TA, Operating System (ELE 3021) *Hanyang University*	Mar. 2018 – June 2018 *Seoul, Korea*
TA, System Programming (CSE 4009) *Hanyang University*	Sep. 2017 – Dec. 2017 *Seoul, Korea*
TA, Operating Systems & System Programming (ITE 2032) *Hanyang University*	Sep. 2016 – Dec. 2016 *Seoul, Korea*
TA, Commissioned Education of Operating System *Samsung Electronics*	Aug. 2016 – Aug. 2016 *Suwon-si, Korea*
TA, Introduction to Operating System (ELE 3021) *Hanyang University*	Mar. 2016 – June 2016 *Seoul, Korea*

PROJECTS

High-Performance Exabyte Storage Systems | Samsung Electronics	May 2022 – May 2024
SNU-SKH Solution Research Center | SK Hynix	Sep. 2019 – Aug. 2023
Future Scalable OS | IITP	June 2018 – May 2023
Scalable IO Stack for future storage system | NRF	June 2017 – Mar. 2020
System Software for Byte Addressable NVM | KEIT/MOTIE	Mar. 2016 – May 2017

AWARDS AND HONORS

Best Ph.D. student Award | EE Dept., KAIST	Apr. 2023
Best TA Award | EE Dept., KAIST	Oct. 2020
Best Paper Award | USENIX FAST 2018	Feb. 2018

TECHNICAL SKILLS

Languages: C/C++, Python, SQL (MySQL, SQLite), R
Developer Tools: gcc/g++, gdb, Git, QEMU, gnuplot, vim, Emacs