

HOKEUN CHA

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RESEARCH INTERESTS

Database systems
Storage systems
Distributed systems

EDUCATION

University of Wisconsin-Madison, Wisconsin, USA

Ph.D. in Computer Science

Jan. 2021 - Present

- Advisor: Prof. Xiangyao Yu

Sungkyunkwan University, Suwon, South Korea

M.S. in Electrical and Computer Engineering

Sep. 2018 - Aug. 2020

- Advisor: Prof. Beomseok Nam
- Thesis: Leveraging Byte-Addressability of Persistent Memory for B+-tree

B.S. in Computer Science and Engineering

Mar. 2012 - Aug. 2018

B.B.A in Business Administration

Mar. 2012 - Aug. 2018

WORK & RESEARCH EXPERIENCE

Intel Corporation, Oregon, USA

Software Engineer Intern in DataPlatforms Future Technology Team

Summer, 2022

- Performance study in storage systems for Microsoft SQL Server

University of Wisconsin-Madison, Wisconsin, USA

Research Assistant in Database Group

May. 2021 - Present

- Designing scalable index structures

Sungkyunkwan University, Suwon, South Korea

Researcher in Convergence Research Institute

Sep. 2020 - Dec. 2020

- Disaggregating persistent memory over RDMA networks

Research Assistant in Data-Intensive Computing Lab.

Sep. 2018 - Aug. 2020

- Designing index structures
 - Write-optimized B+-tree for persistent memory
 - Cacheline-conscious extendible hashing for persistent memory

PUBLICATIONS

- [1] “*B^{link}-hash: An Adaptive Hybrid Index for In-Memory Time-Series Databases*”
Hokeun Cha, Xiangpeng Hao, Tianzheng Wang, Huanchen Zhang, Aditya Akella, Xiangyao Yu
Proceedings of the VLDB Endowment, 2023. [\[pdf\]](#)
- [2] “*Pivotal B+ tree for Byte-Addressable Persistent Memory*”
Jonghyeon Yoo, **Hokeun Cha**, Wonbae Kim, Wook-Hee Kim, Sung-Soon Park, Beomseok Nam
IEEE Access, vol. 10, pp. 46725-46737, 2022. [\[doi\]](#)
- [3] “*B³-tree: Byte-Addressable Binary B-Tree for Persistent Memory*”
Hokeun Cha, Moohyeon Nam, Kibeom Jin, Jiwon Seo, and Beomseok Nam
ACM Transactions on Storage (TOS), vol. 16, no. 3, Aug. 2020. [\[doi\]](#)
- [4] “*Write-Optimized Dynamic Hashing for Persistent Memory*”
Moohyeon Nam, **Hokeun Cha**, Young-ri Choi, Sam H. Noh, and Beomseok Nam
Proceedings of the 17th USENIX Conference on File and Storage Technologies (FAST), Feb. 2019. [\[pdf\]](#)

TEACHING EXPERIENCE

University of Wisconsin-Madison, Wisconsin, USA

Teaching Assistant

- CS564: Database Management Systems

Spring, 2021

Sungkyunkwan University, Suwon, South Korea

Teaching Assistant

- SWE3021: Multi-core Computing
- SWE3006: Programming Languages

Fall, 2019

Spring, 2019

INVITED TALKS

- [1] “*Write-Optimized Dynamic Hashing for Persistent Memory*”,
Korea Software Congress (KSC), Pyeongchang, South Korea

Dec. 2019

HONORS

CS Departmental Scholarship

University of Wisconsin-Madison, Wisconsin, USA

Spring - Fall, 2021

Merit-based Scholarship for Graduate Students

Sungkyunkwan University, Suwon, South Korea

Fall, 2018 - Spring, 2020

Merit-based Scholarship for Undergraduate Students

Sungkyunkwan University, Suwon, South Korea

Spring, 2013

OTHER EXPERIENCE

Shinhan Bank, Shanghai, China

- Business management intern

Winter, 2017

Korea Exchange & Happy Foundation Corp., Seoul, South Korea

- Volunteer service of school education and facility renovation in Laos

Winter, 2016

Childfund Korea, Seoul, South Korea

- Volunteer service of letter translation (English ↔ Korean)

Sep. 2015 - Sep. 2018

Military Service, South Korea

- Served in Republic of Korean Army

Oct. 2013 - Jul. 2015

Wable Company, Seoul, South Korea

- Marketing intern

Nov. 2012 - Jun. 2013