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

WORK 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 for new hardware
  - Write-optimized B+-tree for persistent memory
  - Cacheline-conscious extendible hashing for persistent memory

PUBLICATIONS

[1] *"Towards Accelerating Data Intensive Application's Shuffle Process Using SmartNICs"*
Jiaxin Lin, Tao Ji, Xiangpeng Hao, **Hokeun Cha**, Yanfang Le, Xiangyao Yu, Aditya Akella
Proceedings of the ACM on Measurement and Analysis of Computing Systems (SIGMETRICS), Jun. 2023.

[2] *"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, Feb. 2023.

[3] *"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, Apr. 2022.

[4] *"B³-tree: Byte-Addressable Binary B-Tree for Persistent Memory"*
Hokeun Cha, Moohyeon Nam, Kibeom Jin, Jiwon Seo, Beomseok Nam
ACM Transactions on Storage (TOS), vol. 16, no. 3, pp. 1–27, Jul. 2020.

[5] *"Write-Optimized Dynamic Hashing for Persistent Memory"*
Moohyeon Nam, **Hokeun Cha**, Young-ri Choi, Sam H. Noh, Beomseok Nam
Proceedings of the 17th USENIX Conference on File and Storage Technologies (FAST), Feb. 2019.

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   *Fall, 2019*
- SWE3006: Programming Languages   *Spring, 2019*

TALKS

[1] *"Write-Optimized Dynamic Hashing for Persistent Memory"*,   *Dec. 2019*
Invited talk at Korea Software Congress (KSC), Pyeongchang, South Korea

HONORS

CS Departmental Scholarship   *Spring - Fall, 2021*
University of Wisconsin-Madison, Wisconsin, USA

Merit-based Scholarship for Graduate Students   *Fall, 2018 - Spring, 2020*
Sungkyunkwan University, Suwon, South Korea

Merit-based Scholarship for Undergraduate Students   *Spring, 2013*
Sungkyunkwan University, Suwon, South Korea

OTHER EXPERIENCE

Shinhan Bank, Shanghai, China   *Winter, 2017*
- Business management intern

Korea Exchange & Happy Foundation Corp., Seoul, South Korea   *Winter, 2016*
- Volunteer service of school education and facility renovation in Laos

Childfund Korea, Seoul, South Korea   *Sep. 2015 - Sep. 2018*
- Volunteer service of letter translation (English ↔ Korean)

Military Service, South Korea   *Oct. 2013 - Jul. 2015*
- Served in Republic of Korean Army

Wable Company, Seoul, South Korea   *Nov. 2012 - Jun. 2013*
- Marketing intern