

# Xiangpeng Hao

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## SUMMARY

As a database systems researcher, my work develops cloud-native data architectures that enable efficient and practical large-scale analytics.

## EDUCATION

**University of Wisconsin-Madison**, WI, USA  
*Ph.D. in Computer Science* Sep. 2021 - June 2026

**Simon Fraser University**, Vancouver, Canada  
*Bachelor of Science (Dual Degree), Computer Science* Sep. 2017 - June 2020

**Zhejiang University**, Hangzhou, China  
*Bachelor of Engineering (Dual Degree), Computer Science* Sep. 2015 - June 2020

## SELF-RAISED

**InfluxData Inc.**, for LiquidCache, USD \$75,000 Sep. 2024 - Aug. 2026

## FUNDING

**SpiralDB Inc.**, for LiquidCache, USD \$50,000 Sep. 2025 - Aug. 2026

**BauPlan Inc.**, for LiquidCache, USD \$25,000 Sep. 2025 - Aug. 2026

## PUBLICATIONS

**Xiangpeng Hao**, Andrew Lamb, Jacopo Tagliabue, Andrea Arpaci-Dusseau, Remzi Arpaci-Dusseau. **LiquidEvict: Beyond Optimal Eviction Policy.** *In preparation*

**Xiangpeng Hao**, Andrew Lamb, Yibo Wu, Andrea Arpaci-Dusseau, Remzi Arpaci-Dusseau. **LiquidCache: Efficient Pushdown Caching for Cloud-Native Data Analytics.** *Proceedings of the VLDB Endowment (PVLDB) 2025*

**Xiangpeng Hao**, Badrish Chandramouli. **Bf-Tree: A Modern Read-Write-Optimized Concurrent Larger-Than-Memory Range Index.** *Proceedings of the VLDB Endowment (PVLDB) 2024*

**Xiangpeng Hao**, Xinjing Zhou, Xiangyao Yu, Michael Stonebraker. **Towards Buffer Management with Tiered Main Memory.** *ACM SIGMOD International Conference on Management of Data 2024*

Xinjing Zhou, **Xiangpeng Hao**, Xiangyao Yu, Michael Stonebraker. Tiered-Indexing: Optimizing Access Methods for Skew. *The VLDB Journal 34, 45 (2025).*

Jing Liu, **Xiangpeng Hao**, Andrea Arpaci-Dusseau, Remzi Arpaci-Dusseau, Tej Chajed. Shadow Filesystems: Recovering from Filesystem Runtime Errors via Robust Alternative Execution. *USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage) 2024*

Hokeun Cha, **Xiangpeng Hao**, Tianzheng Wang, Huanchen Zhang, Aditya Akella, Xiangyao Yu. Blink-hash: An Adaptive Hybrid Index for In-Memory Time-Series Databases. *Proceedings of the VLDB Endowment (PVLDB) 2023*

Jiaxin Lin, Tao Ji, **Xiangpeng Hao**, Hokeun Cha, Yanfang Le, Xiangyao Yu, Aditya Akella. Towards Accelerating Data Intensive Application's Shuffle Process Using SmartNICs *ACM SIGMETRICS/IFIP Performance 2022*

Baotong Lu, **Xiangpeng Hao**, Tianzheng Wang, Eric Lo. Scaling Dynamic Hash Tables on Real Persistent Memory. (invited) *ACM SIGMOD Record 2021*

**Xiangpeng Hao**, Lucas Lersch, Tianzheng Wang, Ismail Oukid. PiBench Online: Interactive Benchmarking of Persistent Memory Indexes. *Proceedings of the VLDB Endowment (PVLDB) 2020 demo*

Baotong Lu, **Xiangpeng Hao**, Tianzheng Wang, Eric Lo. DASH: Scalable Hashing on Persistent Memory. *Proceedings of the VLDB Endowment (PVLDB) 2020*

Lucas Lersch, **Xiangpeng Hao**, Ismail Oukid, Tianzheng Wang, Thomas Willhalm. Evaluating Persistent Memory based Range Indexes. *Proceedings of the VLDB Endowment (PVLDB) 2020*

**Xiangpeng Hao**, Brian Funt, Hanxiao Jiang. Evaluating Color Constancy on the new MIST dataset of Multi-Illuminant Scenes. *Color and Imaging Conference (CIC) 2019*

**Xiangpeng Hao**, Brian Funt. A Multi-illuminant Synthetic Image Test Set. *Color Research and Application*

## INVITED TALKS

LiquidCache: Efficient Pushdown Caching for Cloud-Native Data Analytics.

*Joint DB seminar at TUD and TUN, November 2025*

*Bauplan Labs, November 2025*

*UIUC Systems Research Mini Workshop, October 2025*

*Bengaluru Systems, August 2025*

*University of Washington System Lab, July 2025*

*University of Wisconsin-Madison, May 2025*

*Carnegie Mellon University CyLab, January 2025*

*Carnegie Mellon University DB Group, January 2025*

*Chicago DataFusion Meetup, December 2024*

*InfluxData, December 2024*

On the Nature of String.

*DC Systems, August 2025*

Bf-Tree: A Modern Read-Write-Optimized Concurrent Larger-Than-Memory Range Index.

*Cornell University DB Group, June 2024*

## WORK EXPERIENCE

### **InfluxData**

Software Engineer Intern - Andrew Lamb

Remote, US

May 2024 - Aug. 2024

### **Microsoft Research**

Research Intern - Badrish Chandramouli

Redmond, WA

May 2023 - Aug. 2023

### **Google**

Software Engineer Intern (Ph.D.) - Yixin Luo

Sunnyvale, CA

May 2022 - Aug. 2022

## STUDENTS

Yibo Wu, Undergraduate.

Sep. 2024 - Present

## MENTORED

Nikhil Nayak, Undergraduate.

Jan. 2025 - Present

JP Guthi, Graduate.

Jan. 2025 - Present

Proteet Paul, Graduate.

Mar. 2025 - Present

Hrishikesh Shinde, Graduate.

May 2025 - Present

Saeshu Karthika Murugan Indumathi, Undergraduate.

June 2025 - Present

Zixuan Peng, Undergraduate.

Sep. 2025 - Present

Brandon Wee, Undergraduate.

Oct. 2025 - Present

## REFERENCES

### **Remzi H. Arpaci-Dusseau**

Grace Wahba Professor and Vilas Distinguished Achievement Professor at University of Wisconsin-Madison

remzi@cs.wisc.edu

### **Andrea C. Arpaci-Dusseau**

Susan Beth Horwitz WARF Professor at University of Wisconsin-Madison

arpaci@cs.wisc.edu

### **Tianzheng Wang**

Associate Professor at Simon Fraser University

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### **Badrish Chandramouli**

Partner Research Manager in the data systems group at Microsoft Research

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