Abigale Kim

Curriculum Vitæ

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Department of Computer Sciences
University of Wisconsin–Madison

Education

2024–on **PhD in Computer Science**, University of Wisconsin–Madison, Advisor: Prof. Xiangyao Yu

Relevant Coursework: Foundations of Data Management, Game Theory, Optimization & Learning, High Performance Computing for Applications in Engineering

2023–2024 **MSc in Computer Science**, Carnegie Mellon University, Advisor: Prof. Andrew Pavlo

Relevant Coursework: Advanced Database Systems, Advanced Operating Systems and Distributed Systems, Deep Learning Systems, Computer Architecture

2018–2021 **BSc in Computer Science**, Carnegie Mellon University, Graduated with University Honors

Relevant Coursework: Operating System Design and Implementation, Database Systems, Optimizing Compilers, Introduction to Computer Security, Computer Graphics

Research Experience

2024–on **University of Wisconsin–Madison**, PhD researcher, Supervisor: Prof. Xiangyao Yu

Researching GPU-accelerated memory compaction and database systems.

2023–2024 **Carnegie Mellon University**, Master's researcher, Supervisor: Prof. Andrew Pavlo

Researching the database system extensibility ecosystem.

2020–2021 **Carnegie Mellon University**, Undergraduate researcher, Supervisor: Prof. Andrew Pavlo

Utilizing just-in-time (JIT) compilation techniques to increase index key comparator performance.

2019–2020 **Carnegie Mellon University**, Undergraduate researcher, Supervisor: Prof. Afsaneh Doryab

Researched the correlation between student performance and lifestyle factors, using data collected from smart devices.

Publications

2024 Anarchy in the Database: A Survey and Evaluation of Database Management System Extensibility. **Abigale Kim**, Marco Slot, David G. Andersen, Andrew Pavlo. To appear in VLDB 2025.

2021 Understanding Health and Behavioral Trends of Successful Students Through Machine Learning Models. **Abigale Kim**, Fateme Nikseresht, Janine Dutcher, Michael Tumminia, Daniella Villalba, Sheldon Cohen, Kasey Creswel, J. Creswell, Anind Dey, Jennifer Mankoff, and Afsaneh Doryab. IHIET-AI 2021.

Talks

2024 Anarchy in the Database: A Survey and Evaluation of Database Management System Extensibility, PGConf.dev 2024. [Slides] [Video]

2023 Database Management System Extensibility, Parallel Data Retreat 2024. slides

Posters

2025 GPU Databases - The New Modality of Database Analytics, University of Wisconsin–Madison, Prospective Student Visit Days 2025. poster

2023 Survey of Database Management System Extensibility, Parallel Data Retreat, 2023. poster

Experience

2024–2024 **TileDB Inc.**, Software Engineer

Developed a Rust API for the TileDB storage engine.

2022–2023 **TileDB Inc.**, Software Engineer

Redesigned query engine to support complex predicates. Worked on data pipelining features.

2021–2021 **YugabyteDB**, Software Engineering Intern

Implemented cluster mapping-update integration during asynchronous tablet split.

2020–2020 **Amazon Web Services, Redshift**, Software Development Engineering Intern

Designed and implemented a scalable service improving Redshift database cold-start performance.

2019–2019 **Amazon**, Future Engineer Software Development Engineering Intern

Developed web publishing platform used by 6,000 Amazon content merchandisers,

Awards

2022 **Senior Leadership Recognition**, Awarded to graduating seniors from Carnegie Mellon University who have made an unparalleled impact on the CMU community.

Teaching

2023–2023 **Carnegie Mellon University**, Database Systems Teaching Assistant

2021–2021 **Carnegie Mellon University**, Introduction to Computer Systems Head Teaching Assistant

2020–2021 **Carnegie Mellon University**, Introduction to Computer Systems Teaching Assistant

2019–2020 **Carnegie Mellon University**, Principles of Imperative Computation Teaching Assistant