

HAODONG LU

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EDUCATION

Huazhong University of Science and Technology, Hubei, China

◊ B.S. in Computer Science, expected July 2024

2020 - Present

◊ Cumulative GPA: 3.87 / 4.00

University of California, Berkeley, Berkeley, CA, USA

◊ Exchange Program Study

Jan 2023 - Jun 2023

◊ Cumulative GPA: 4.00 / 4.00

EXPERIENCE

Research Assistant

Oct 2023 - Present

Big Data & System Team, Key Laboratory of Service Computing and Systems Ministry of Education & Amp, Huazhong Uni. of Science & Tech. *Wuhan, Hubei, China*

- Co-leading the research of "RPAttention", an optimization of KVCache memory management policy for LLM.
- Exploring more optimizations of the operation of LLM based on compilation techniques.

Research Assistant

May 2023 - Aug 2023

Database Group, University of Wisconsin-Madison.

Madison, WI, USA (Hybrid)

- Re-implemented the main part of the tile-based lightweight integer compression in GPU with the optimization.
- Explored more efficient bit-packing compression and optimization techniques in the context of GPU.

Research Assistant

Jun 2022 - Jan 2023

Distributed Systems Team, Key Laboratory of Service Computing and Systems Ministry of Education & Amp, Huazhong Uni. of Science & Tech. *Wuhan, Hubei, China*

- Co-led the research of extending the sandwich arbitrage strategy and proposed a "Lasagne" strategy on Ethereum.
- Conducted several experiments to evaluate the strategy and optimized arbitrage speed (1.53x) and accuracy.
- Developed an efficient arbitrage system for the "Lasagne" strategy and the related paper.
- Led a "XETH" project: An open-source platform for Ethereum data intelligence analysis and management.

Research Intern

Jan 2022 - Feb 2022 & Jul 2022 - Present

Parallel Data Storage Lab, PingCAP Inc. & The Wuhan National Lab for Optoelectronics

Wuhan, Hubei, China

- Participated in the Talent Plan of PingCAP Inc. and completed the TinyKV project.
- Co-Realized offloading the compaction operation of LSM-tree to the DPU hardware accelerators based on RocksDB.
- Implement a simple RDMA-based RPC and co-developed a lightweight client-server file system running separately on DPU and CPU.
- Contributed to the paper "DComp: Efficient Offload of LSM-tree Compaction with Data Processing Units".
- Exploring more efficient and smarter Offload of Compaction with AI (RL & LLM) and new hardware.

Research Assistant

Oct 2020 - Dec 2021

National Key Laboratory of Digital Manufacturing Equipment and Technology

Wuhan, Hubei, China

- Co-developed an adsorption mobile processing robot system for large-scale aircraft variable-curvature skin.
- Co-invented a perception-fused prosthetic hand, responsible for developing perceptual acquisition modules and perceptual feedback modules.
- Developed desktop and web applications tracking and displaying robots' real-time position.
- Eliminated accumulated errors using AprilTags visual fiducial system, thus achieving centimeter-level positioning.

PUBLICATION

AWARDS & SCHOLARSHIPS

◇ School Innovation Scholarship	Oct 2023
◇ First Prize: 17 th "Challenge Cup" National College Student Curricular Academic Science & Technology Works Competition	Apr 2022
◇ Grand Prize: 13 th Hubei Province "Challenge Cup" College Student Curricular Academic Science & Technology Works Competition	May 2021
◇ Grand Prize: 8 th "Qiushi Cup" College Student Academic Science & Technology Works Competition	Apr 2021
◇ First Prize: 17 th "Mindray Cup" College Student Robot Competition	Apr 2021
◇ School Merit Student Scholarship	Oct 2021
◇ School Innovation Scholarship	Oct 2022
◇ National Hisense Scholarship	May 2022
◇ National Huawei's "Smart Base" Scholarship	May 2022
◇ School Freshman Excellence Scholarship	Apr 2021
◇ School Freshman Self-improvement Scholarship	Apr 2021

PATENTS

Perception-fused prosthetic hand (co-inventor), CN Patent CN215192638U Issued Dec 17, 2021

- A fused perceptual prosthetic hand includes perceptual acquisition modules, perceptual feedback modules, and a prosthetic hand body, realizing moving and grabbing through electromyographic signals.

Grinding head for achieving self-adaptive flexible constant-force grinding function of grinding and polishing unit (co-inventor), CN Patent CN214923415U Issued Nov 30, 2021

- An industrial-grade grinding head for high-quality and high-precision flexible and constant-pressure machining on large variable-curvature workpiece surfaces.

SOCIETY MEMBERSHIPS

Team Dian, Hubei, China

- **Leader of Web Group** Sep 2021 - Present
- Led a "KIDPOSE" web project and implemented the back-end module using Java with Springboot.
- Built the team wiki and the official website.

Team FOCUS, Hubei, China

- **Leader** Oct 2020 - Present
- Daily organization and management of the team.
- Led projects about amphibious robots and the web.
- Co-led the Preparation for the 17th "Challenge Cup" National Competition.

Team STAR, Hubei, China

- **Member** Sep 2021 - Present
- Researched databases and distributed key-value storage with PingCAP Inc.

Organization Department of The School Youth Committee, Hubei, China

- **Assistant of the Comprehensive Management Office** Oct 2020 - Present
- Serviced voluntarily for public spaces and underrepresented groups.
- Organized large-scale conferences and cultural and sports activities.
- Coordinated the work of departments of the committee.

- Participated in social practice activities including high-school presentations and the "Three Rural Areas" Social Practice, gaining the prize of **School Excellent Practice Individual** in July 2021.

SKILLS & LANGUAGES

- ◇ **Programming Languages:** Java, C++, Golang, C, JavaScript, NodeJS, Solidity, Python, SQL, x86 Assembly
- ◇ **Engineering Skills:** Linux, MySQL, TiDB, Git
- ◇ **Markup Languages:** LATEX, Markdown
- ◇ **Soft Skills:** Self-motivated, Naturally Curious, Excellent Communication Skills, Can-do Attitude
- ◇ **Languages:** Chinese (native), English (fluent)