

# Jiacheng Wan

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## RESEARCH INTERESTS

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My research interest focuses on the intersection of Operating Systems, Host Networking, and Datacenter Networks. I am also motivated to explore deeper and wider in other system areas including Storage, Computer Organization and Architecture, and Parallel and Distributed Computing. Currently I am working on Remote Direct Memory Access in datacenters from application design, NIC and switch programming to congestion control.

## EDUCATION

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| <b>Master of Science in Engineering in Computer Science</b><br>Johns Hopkins University                                       | Aug 2024 - Present<br>Baltimore, MD, USA         |
| <b>Master of Engineering in Electronic and Information Engineering</b> (Transfer to JHU)<br>Zhejiang University of Technology | Aug 2022 - Jun 2024<br>Hangzhou, Zhejiang, China |
| <b>Bachelor of Engineering in Computer Science and Technology</b><br>Southeast University                                     | Sep 2017 - Jun 2021<br>Nanjing, Jiangsu, China   |

## PUBLICATIONS & PATENTS

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- Abdous, S., Lu, J., **Wan, J.**, Sharafzadeh, E., Zhang, Y., & Ghorbani, S. (in press). *One to many: closing the bandwidth gap in AI datacenters with scalable multicast*. In **Proceedings of the 25th ACM Workshop on Hot Topics in Networks (HotNets '25)**. <https://doi.org/10.1145/3772356.3772425>
- Xie, C., Zhou, J., Gong, S., **Wan, J.**, Qian, J., Yu, S., Xuan, Q., & Yang, X. (2024). *PathMLP: Smooth path towards high-order homophily*. **arXiv**. <https://arxiv.org/abs/2306.13532v1>
- Hu, X., Huang, Y., **Wan, J.**, Liu, X., & Cheng, G. (2020, February 13). *A blockchain-based anti-counterfeiting and traceability method for Yangcheng Lake hairy crabs* [Chinese patent application **CN 202010090934.4**]. China National Intellectual Property Administration (CNIPA).

## CERTIFICATE & AWARDS

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| <b>Scholarship in College of Information Engineering</b><br>Zhejiang University of Technology                                                        | Dec 2022 |
| <b>Outstanding Student for Academic Excellence</b><br>Southeast University                                                                           | Dec 2019 |
| <b>Certificate for Information Security Engineer</b><br>Passing the Computer Technology and Software Professional Qualification Examination in China | May 2019 |
| <b>First Prize</b><br>National Olympiad in Informatics in Province                                                                                   | Dec 2015 |

## RESEARCH AND PROJECT EXPERIENCE

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| <b>JHU Department of Computer Science</b>   Baltimore, MD, USA<br>Scalable Multicast in AI Datacenters<br><i>Advisor: Prof. Soudeh Ghorbani</i> <ul style="list-style-type: none"><li>Test and implement multicast functionalities with NVIDIA DOCA libraries.</li><li>Participate in new collective operation library construction, especially for native RDMA parts.</li><li>Manage lab servers and configure Tofino programmable switch via coding both data plane and control plane.</li></ul> | Feb 2025 - Present |
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**JHU Department of Computer Science | Baltimore, MD, USA**

Sep 2024 - Jan 2025

Design and Implementation of V2X Testbed for Multipath Communication

*Advisor: Prof. Krishan Sabnani*

- Participated in system design and implemented data transmission for Raspberry Pi, mobile device, and server.
- Tested the system in various JHU shuttles and updated the system.

**ZJUT College of Information Engineering | Hangzhou, Zhejiang, China**

Nov 2022 - Jun 2024

Smart Contract Structural Vulnerability Detection

*Advisor: Prof. Qi Xuan*

- Focused on addressing structural vulnerabilities by static program analysis and Graph Neural Network training.
- Detected numerical vulnerabilities like overflow using methods like fuzzing detection and symbolic execution.

**SEU Department of Computer Science | Nanjing, Jiangsu, China**

Dec 2020 - Jun 2021

Design and Implementation of Blockchain-based Multi-UAV Communication and Collaboration System

*Advisor: Prof. Runqun Xiong*

- Developed a communication and collaboration system to enable communication between drones by ad-hoc network with an additional Network Interface Card and Optimized Link State Routing.
- Designed and implemented a vote function for user-defined group decision-making rules by building a private chain in Ethereum and writing dedicated Smart Contract to improve security.

**Teaching Experience**

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**JHU Department of Computer Science | Baltimore, MD, USA**

Sep 2025 – Present

*Teaching Assistant (EN.414/614 Computer Networks)*

- Primarily responsible for teaching-related tasks.
- Gradeing assignments and exams, addressing questions on Piazza, and hosting office hour.

**JHU Department of Computer Science | Baltimore, MD, USA**

Jan 2025 – May 2025

*Teaching Assistant (EN.414/614 Computer Networks)*

- Primarily responsible for teaching-related tasks.
- Grading assignments and exams, proctoring midterm and final exams, and hosting office hour.

**Professional Experience**

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**Jilin Province Jikeruan Information Technology Co., Ltd. | Changchun, Jilin, China**

Summer 2021

*Product Design Intern*

- Identified and classified APIs by analyzing URLs and HTTP packets.
- Preserved semantic components of URLs and formulated clustering rules to merge URLs under the same domain, and assessed similarities to merge URLs spanning multiple domains.

**Jilin Province Jikeruan Information Technology Co., Ltd. | Changchun, Jilin, China**

Summer 2020

*Product Design Intern*

- Developed extended functionalities for the Livestock Product Quality Safety Traceability System.
- Migrated the system to Hyperledger Fabric and wrote specific Chaincodes in Java.