Wonsup Yoon

Ph.D. Student, KAIST

Email : wsyoon@kaist.ac.kr
https://www.pusnow.com

Education

- **KAIST** — Republic of Korea
  Ph.D. in Computer Science; GPA: 4.01/4.30 — *Sep. 2019 – present*
  - **Co-advisors**: Sue Moon and Youngjin Kwon.
- **KAIST** — Republic of Korea
  M.S. in Computer Science; GPA: 3.95/4.30 — *Sep. 2017 – Aug. 2019*
  - **Co-advisors**: Sue Moon and Youngjin Kwon.
  - **Thesis title**: A Memory Management Layer for Disaggregated Data Center.
- **Yonsei University** — Republic of Korea
  B.S. in Electrical and Electronic Engineering; GPA: 4.01/4.30 — *Mar. 2013 – Feb. 2017*
  - **Minor**: Computer Science

Experience

- **Advanced Networking Lab, KAIST** — Republic of Korea
  Teaching Assistant — *2017 - 2022, 2024*
  - **Introduction to Computer Networks (CS341)**. Taught and developed KENS (KAIST Educational Network System) project assignments. Worked on extending KENS for memory safety, build system, development environment, and teaching ecosystem.
  - **Distributed Algorithms and Systems (CS443)**. Taught Raft consensus algorithm project assignments.
  - **Graduate Operating Systems (CS530)**. Taught operating system project assignments based on OSv unikernel.
- **Institute of Language and Information Studies, Yonsei University** — Republic of Korea
  Technical Assistant and Software Developer — *2013 - 2017*
  - **Yonsei Corpus Searcher**. Developed efficient a search-filter-sort application for the Yonsei Korean corpus.
  - **Yonsei Dictionary Searcher**. Developed efficient web-based and .net-based search applications for the Yonsei Korean dictionary.
  - **Dictionary searcher for the National Institute of Korean Language**. Developed a dictionary search web application for Korean language.
  - **TOPIK Word Searcher for National Institute for International Education**. Developed an education-level-based dictionary search application used for TOPIK (Test Of Proficiency In Korean).

Research Interest

My broad research interests are:

- **Virtualization**: unikernels, microVM, and containers.
- **Networking**: RDMA, virtio, and programmable NICs.
- **Datacenter**: resource disaggregation, microsecond-scale systems, and tail-optimized systems.

Awards and Honors

- **SIGCOMM '23 Travel Grants (USD 1500)** — ACM SIGCOMM
  Awarded for travel to present at the ACM SIGCOMM 2023 conference. — *Sep. 2023*
- **Best Paper Award** — APNet'23
  Awarded for the paper "Host Efficient Networking Stack Utilizing NIC DRAM". — *Jun. 2023*
- **Best TA Award** — KAIST
  Awarded for teaching the class Introduction to Computer Networks (CS341). — *Jul. 2021*

- **Awarded High Honors (Top 3%)** — Yonsei University
  Awarded for outstanding performance in coursework. — *Aug. 2016 and Feb. 2017*
- **The National Scholarship for Science and Engineering** — Korea Student Aid Foundation
  Awarded for outstanding performance in coursework. — *Dec. 2015 and Sep. 2016*
- **Yonsei Internal Scholarship** — Yonsei University
  Awarded for outstanding performance in coursework. — *Sep. 2015 and Mar. 2016*
- **Awarded Honors (Top 10%)** — Yonsei University
  Awarded for outstanding performance in coursework. — *Feb. 2015, Aug. 2015, and Feb. 2016*
- **Korea Telecom Scholarship** — Korea Telecom
  Awarded for outstanding performance in coursework. — *Aug. 2015*

Publications

- Jisu Ok, **Wonsup Yoon**, and Sue Moon. Poster: Pushing RDMA into Milliseconds RTT Communication. In *Proceedings of the 20th International Conference on emerging Networking EXperiments and Technologies (Poster Session) (CoNEXT '24 Posters).* 2024.
- **Wonsup Yoon**, Jisu Ok, Sue Moon, and Youngjin Kwon. Poster: Designing a Memory Disaggregation System for Cloud. In *Proceedings of the ACM SIGCOMM 2023 Conference Posters and Demos (SIGCOMM '23 Posters and Demos).* 2023.
- Byeongkeon Lee, Donghyeon Lee, Jisu Ok, **Wonsup Yoon**, and Sue Moon. Host Efficient Networking Stack Utilizing NIC DRAM. In *Proceedings of the 7th Asia-Pacific Workshop on Networking (APNet).* 2023.
- **Wonsup Yoon**, Jisu Ok, Jinyoung Oh, Sue Moon, and Youngjin Kwon. DiLOS: Do Not Trade Compatibility for Performance in Memory Disaggregation. In *Proceedings of the Eighteenth European Conference on Computer Systems (EuroSys).* 2023.
- **Wonsup Yoon**, Jinyoung Oh, Jisu Ok, Sue Moon, and Youngjin Kwon. DiLOS: adding performance to paging-based memory disaggregation. In *Proceedings of the 12th ACM SIGOPS Asia-Pacific Workshop on Systems (APSys).* 2021.
- **Wonsup Yoon**, Jinyoung Oh, Sue Moon, and Youngjin Kwon. Accelerating disaggregated data centers using unikernel. In *Proceedings of the ACM SIGCOMM 2020 Conference Posters and Demos (SIGCOMM '20 Posters and Demos).* 2020.
- Keunhong Lee, Jeehoon Kang, **Wonsup Yoon**, Joongi Kim, and Sue Moon. Enveloping Implicit Assumptions of Intrusive Data Structures within Ownership Type System. In *Proceedings of the 10th Workshop on Programming Languages and Operating Systems (PLOS@SOSP).* 2019.

Invited Talks

- **Efficient Memory Disaggregation Systems Using Unikernel** — KIISE KCC'24
  Invited for doctorial forum. — *2024*
- **DiLOS: Do Not Trade Compatibility for Performance in Memory Disaggregation** — KIISE KCC'24
  Invited for top conference session. — *2024*
- **DiLOS: Do Not Trade Compatibility for Performance in Memory Disaggregation** — Samsung GTS'23
  Invited for the Samsung Global Technology Symposium. — *2023*
- **Designing a Latency-Optimized Scheduler for Memory Disaggregation** — EuroDW'23
  Invited for the 17th EuroSys doctoral workshop. — *2023*

Professional Activities

- **EuroSys'22 Shadow PC** — EuroSys
  Served as a member of a shadow PC. — *2022*