

# Seung-seob Lee

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I am passionate about building scalable, developer-friendly computing systems for disaggregated data centers, particularly to support emerging applications such as AI workloads through the co-design of systems and networking layers. More broadly, I am interested in embedded systems, operating systems, and AI-serving systems to enhance the performance and efficiency of modern computing environments.

## Work Experience

2026 Feb – Research Scientist, Yale University, New Haven, Connecticut, U.S.

present

2022 Feb – Associate Research Scientist, Yale University, New Haven, Connecticut, U.S.

2026 Jan

2020 Feb – Postdoctoral Associate, Yale University, New Haven, Connecticut, U.S.

2022 Jan

2015 Sept – Research Intern, Microsoft Research Asia, Beijing, China (9 months)

2016 May

## Education

2011–2019 M.S./Ph.D., Computer Science, Yonsei University, South Korea.

2007–2010 B.S., Computer Science, Yonsei University, South Korea.

## Publications

### o Conference

Y. Pan, Y. Lala, M. Unal, Y. Ren, **Seung-seob Lee**, A. Bhattacharjee, A. Khandelwal, and S. Kashyap, “Scalable Far Memory: Balancing Faults and Evictions,” in *Proceedings of the ACM SIGOPS 31st Symposium on Operating Systems Principles (SOSP)*, 2025.

**Seung-seob Lee**, J. Putta, Z. Mao, and A. Khandelwal, “Spirit: Fair Allocation of Interdependent Resources in Remote Memory Systems,” in *Proceedings of the ACM SIGOPS 31st Symposium on Operating Systems Principles (SOSP)*, 2025.

I. Gim, Z. Ma, **Seung-seob Lee**, and L. Zhong, “Pie: A Programmable Serving System for Emerging LLM Applications,” in *Proceedings of the ACM SIGOPS 31st Symposium on Operating Systems Principles (SOSP)*, 2025.

Y. Tang, **Seung-seob Lee**, A. Bhattacharjee, and A. Khandelwal, “PULSE: Accelerating Distributed Pointer-Traversals on Disaggregated Memory,” in *Proceedings of the 30th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2025.

C. Li, **Seung-seob Lee**, M. H. Yun, and L. Zhong, “Blindfold: Confidential Memory Management by Untrusted Operating System,” in *Proceedings of Network and Distributed System Security Symposium (NDSS)*, 2025. 🏆 Distinguished Paper Award.

I. Gim, G. Chen, **Seung-seob Lee**, N. Sarda, A. Khandelwal, and L. Zhong, “Prompt Cache: Modular

Attention Reuse for Low-Latency Inference,” in *The Seventh Annual Conference on Machine Learning and Systems (MLSys)*, 2024.

**Seung-seob Lee**, Y. Yu, Y. Tang, A. Khandelwal, L. Zhong, and A. Bhattacharjee, “MIND: In-Network Memory Management for Disaggregated Data Centers,” in *Proceedings of the ACM SIGOPS 28th Symposium on Operating Systems Principles (SOSP)*, 2021.

T. Kim, **Seung-seob Lee**, C. K. Kim, and S. Lee, “Poster Abstract: Caching Scheme for Internet of Vehicles Using Parked Vehicles,” in *Proceedings of the 17th ACM Conference on Embedded Networked Sensor Systems (SenSys)*, 2019.

**Seung-seob Lee** and S. Lee, “Poster Abstract: Deep Reinforcement Learning-based Resource Allocation in Vehicular Fog Computing,” in *IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS)*, 2019.

H. Kim, **Seung-seob Lee**, and S. Lee, “Dynamic Extended Access Barring for Improved M2M Communication in LTE-A Networks,” in *IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, 2017.

S. Lee, K. Kim, Y. H. Kim, and **Seung-seob Lee**, “Motion Analysis in Lower Extremity Joints during Ski Carving Turns using Wearable Inertial Sensors and Plantar Pressure Sensors,” in *IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, 2017.

**Seung-seob Lee**, H. Shi, K. Tan, Y. Liu, S. Lee, and Y. Cui, “Smart and Secure: Preserving Privacy in Untrusted Home Routers,” in *Proc. of the 7th ACM SIGOPS Asia-Pacific Workshop on Systems (APSys)*, 2016.

**Seung-seob Lee**, H. Kim, and S. Lee, “K-Tier Relay Node Placement in Heterogeneous LTE Networks,” *IEEE Mobile Services (MS)*, 2015.

M. Kim, Y. Kim, **Seung-seob Lee**, and S. Lee, “Poster: Multi-path Transport Protocol for Vehicle-to-Grid Communications,” *IEEE Vehicular Networking Conference (VNC)*, 2014.

○ Journal

T. Kim, H. Park, Y. Jin, **Seung-seob Lee**, and S. Lee, “Partition Placement and Resource Allocation for Multiple DNN-based Applications in Heterogeneous IoT Environments,” *IEEE Internet of Things Journal*, 2023.

S. Lee, S. Lee, and **Seung-seob Lee**, “Deadline-Aware Task Scheduling for IoT Applications in Collaborative Edge Computing,” *IEEE Wireless Communications Letters*, vol. 10, no. 10, pp. 2175–2179, 2021.

**Seung-seob Lee**, H. Shi, K. Tan, Y. Liu, S. Lee, and Y. Cui, “S2Net: Preserving Privacy in Smart Home Routers,” *IEEE Transactions on Dependable and Secure Computing*, vol. 18, no. 3, pp. 1409–1424, 2021.

**Seung-seob Lee** and S. Lee, “Resource Allocation for Vehicular Fog Computing Using Reinforcement Learning Combined With Heuristic Information,” *IEEE Internet of Things Journal*, vol. 7, no. 10, pp. 10450–10464, 2020.

**Seung-seob Lee**, T. Kim, S. Lee, K. Kim, Y. Kim, and N. Golmie, “Dynamic Channel Bonding Algorithm for Densely Deployed 802.11ac Networks,” *IEEE Transactions on Communications*, vol. 67, pp. 8517–8531, Dec. 2019.

M.-S. Kim, Y. Kim, **Seung-seob Lee**, S. Lee, and N. Golmie, "A User Application-based Access Point Selection Algorithm for Dense WLANs," *PLOS ONE*, vol. 14, pp. 1–23, Jan. 2019.

Y. Kim, **Seung-seob Lee**, and S. Lee, "Coexistence of ZigBee-based WBAN and WiFi for Health Telemonitoring Systems," *IEEE Journal of Biomedical and Health Informatics*, vol. 20, pp. 222–230, Jan. 2016.

**Seung-seob Lee**, S. Lee, K. Kim, and Y. Kim, "Base Station Placement Algorithm for Large-Scale LTE Heterogeneous Networks," *PLOS ONE*, vol. 10, pp. 1–19, Oct. 2015.

**Seung-seob Lee**, S. Lee, K. Kim, D. Griffith, and N. Golmie, "Optimal Deployment of Pico Base Stations in LTE-Advanced Heterogeneous Networks," *Computer Networks*, vol. 72, pp. 127 – 139, Oct. 2014.

**Seung-seob Lee** and S. Lee, "User-Centric Offloading to WLAN in WLAN/3G Vehicular Networks," *Wireless Personal Communications*, vol. 70, pp. 1925–1940, June 2013.

## Research Grants

2025–2028 NSF SaTC: "Fortifying and Enriching Confidential Computing Environments," \$900,000, Co-PI (PI: Prof. Khandelwal)

## Patents

2016 "Method for Optimizing Cell Scanning Interval for Cell Reselection in Wireless Communication System and Apparatus Therefor," South Korea, Registration No. 10-1667587-0000

2015 "Method and Apparatus for Base Station Location and Cell Type Determination in LTE-Advanced Heterogeneous Network," South Korea, Registration No. 10-1482909-0000

## Teaching

2023 Guest-lecturer, *Big Data Systems:Trends & Challenges*, Yale University

2022 Co-instructor, *Computer Networks*, Yale University

2014 Teaching Assistant, *Understanding on State of the Art Technologies and Thesis in Computer Science*, Yonsei University

2013, 2014 Teaching Assistant, *Discrete Mathematics*, Yonsei University

2013 Teaching Assistant, *Data Structures*, Yonsei University

## Fellowships and Awards

2025 Distinguished Paper Award, Network and Distributed System Security Symposium (NDSS)

2022 Athena Post-doctoral Fellowship (NSF National AI Institute)

2014–2016 Brain Korea (BK) 21 Research Scholarship

2007–2010 National Science & Technology Scholarship, funded by Korea Student Aid Foundation

## Professional Activities/Services

IEEE Transactions on Mobile Computing, Reviewer

IEEE Internet of Things Journal, Reviewer

IEEE Journal of Biomedical and Health Informatics, Reviewer

IEEE Wireless Communications Magazine, Reviewer

ACM SOSP '21, Artifact evaluation committee

ACM CoNEXT '17, Student Workshop, Student-staff