

# SeongJae Park

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## Experience (Last 10 years)

**Staff Software Engineer, *Crusoe***, Oct 2025 - Present

- Developing Linux kernel for Crusoe Cloud.

**Software Engineer, *Meta***, Sep 2024 - Oct 2025

- Developed Linux kernel for Meta infrastructure.
- Developed access-aware memory tiering, fleet-wide access pattern observability system and memory management subsystem optimizations (madvise() and zswap).

**Kernel Development Engineer, *Amazon***, Sep 2019 - Sep 2024

- Developed Amazon Linux kernels for AWS internal/external users.
- Developed, upstreamed, and maintained Linux kernel DAMON subsystem.
- Developed DAMON features for AWS products including Aurora Serverless v2.
- Helped adoption of DAMON on other products including SK hynix' CXL memory SDK.

**Graduate Research Assistant, *DCSLAB, Seoul National University***, Sep 2012 - Aug 2019

- Researched for high performance and scalability of memory management systems.
- Developed memory access pattern tracers and automated memory hint injection systems.
- Developed a NUMA-aware RCU extension and a scalable virtual memory system using it.
- Developed a physically contiguous memory allocator for THP and DMA.

## Education

- Ph.D., Computer Science and Engineering at Seoul National University (Aug 2019)
- B.S., Electrical Engineering / Information and Computer Engineering (dual degree) at Ajou University (Feb 2009)

## Selected Research and Projects

### Data Access-aware Linux Kernel Memory Management Optimizations

- Developing/maintaining DAMON: kernel subsystem for access-aware system operations.
- Being used for memory auto-scaling (Aurora Serverless v2) and tiering (SK hynix HMSDK).
- Published papers in *MIDDLEWARE'19 industry* and *HPDC'22*.

### Automated Data Access Pattern Monitoring and Access-aware Memory Management

- Developed static data access pattern analysis and automated hint injection.
- Presented in *FAST'19 WiP session* and published a paper in *HotStorage'19*.

### An RCU Extension for High Performance and Scalability of Updates

- Developed an RCU extension and a scalable memory management system with the extension.
- A paper published in *EuroSys'20*.

### Guaranteed Contiguous Memory Allocator

- Developed a Contiguous Memory Allocator that guarantees success and short latency.
- Papers published in *EWiLi 2015* and *Transactions on Computers*.

## Selected Publications And Presentations

- **DAMON Presentation and Discussion Talks.** SeongJae Park,  
*Kernel Recipes 2025,*  
*Linux Storage | Filesystem | MM & BPF Summit, 2023-2025, FOSDEM 2025,*  
*Open Source Summit North America, 2023-2025,*  
*Kernel Memory Management Microconference at LPC, 2024,*  
*Open Source Summit Europe, 2023-2024,*  
*The Linux Kernel Summit, 2019-2023.*
- **DAMON Community Meetups.** SeongJae Park. *Linux Plumbers Conference, 2022-2023,*  
*Open Source Summit North America, 2024.*
- **DAOS: Data Access-aware Operating System.** SeongJae Park, Madhuparna Bowmik,  
Alexandru Uta. *ACM Symposium on High-Performance Parallel and Distributed Computing*  
(HPDC), June 2022.
- **An HTM-Based Update-side Synchronization for RCU on NUMA systems.**  
SeongJae Park, Paul E. McKenney, Laurent Dufour, Heon Y. Yeom. *ACM European*  
*Conference on Computer Systems (EuroSys), April 2020.*
- **Profiling Dynamic Data Access Pattern with Controlled Overhead and Quality.**  
SeongJae Park, Yunjae Lee, Heon Y. Yeom. *ACM/IFIP International Middleware Conference*  
(MIDDLEWARE) *Industry, December 2019.*
- **Automating Context Based Access Pattern Hint Injection for System Performance and**  
**Swap Storage Durability.** SeongJae Park, Yunjae Lee, Heon Y. Yeom. *USENIX Workshop on*  
*Hot Topics in Storage and File Systems (HotStorage), July 2019.*
- **GCMA: Guaranteed Contiguous Memory Allocator.** SeongJae Park, Minchan Kim,  
Heon Y. Yeom. *Transactions on Computers (TC), March 2019.*  
*The Linux Kernel Summit, November 2018.*
- **Scalable Serializable Snapshot Isolation for Multicore Systems.** Hyuck Han,  
SeongJae Park, Hyungsoo Jung, Alan Fekete, Uwe Rohm, Heon Y. Yeom.  
*IEEE 30th International Conference on Data Engineering (ICDE), March 2014.*