

张杰

tel: +8619910031394 | email: jiezh@pku.edu.cn

张杰博士现任北京大学计算机学院助理教授、特聘研究员、博士生导师，获得优秀青年科学基金海外项目（海外优青）、英特尔学术英才计划荣誉学者、ACM SIGSE 新星奖、博雅青年学者。他长期从事存储系统和专用处理器的研究和设计，致力于从计算机体系结构层面出发，解决大数据和人工智能时代对于高性能存储系统的需求，突破冯诺依曼体系结构下数据迁移的瓶颈以及内存墙的限制。负责和参与科技部重点研发项目（课题负责人）、国家自然科学基金重点项目（北大负责人）、韩国自然科学基金，得到华为、江波龙、三星电子、海力士、英特尔和西部数据的资助。自 2014 年起，在计算机国际会议及期刊上发表了 50 余篇论文，包括计算机体系结构与系统顶级会议 ISCA (CCF-A, 三篇)、OSDI (CCF-A)、HPCA (CCF-A, 七篇)、MICRO (CCF-A, 两篇)、ASPLOS (CCF-A)、FAST (CCF-A)、DAC (CCF-A) 和 Eurosys (CCF-A)，是该方向发表高水平论文最多的青年学者之一。申请人的论文得到美日韩德等国家和地区的学者引用 (Google Scholar 他引 609 余次)。引用源包括著名大学研究机构（如伊利诺伊大学、威斯康辛大学、加州大学圣地亚哥分校、宾州州立大学等）的国际知名学者（如 ACM/IEEE fellow）发表于顶级国际会议和期刊（如 OSDI、ISCA、HPCA、FAST、MICRO、ASPLOS 等）的重要论著。论文获 2019 年韩国计算机大会 (KCC) 最佳演讲论文奖和 2019 年非易失性内存研讨会 (NVMW) 优秀论文提名奖。在存储领域的研究成果被列为 KAIST50 年重大突破之一，并被多家新闻媒体报道。

工作经历

北京大学，北京，中国

计算机学院

KAIST, Daejeon, Korea

Electrical Engineering (Computing Division)

助理教授，博导

2021 年 7 月–至今

博士后

March 2020 年 3 月 –2021 年 5 月

教育经历

Yonsei University, Incheon, Korea

PhD in Engineering

Advisor: Dr. Myoungsoo Jung

August 2015 – Feb 2020

University of Texas at Dallas, Richardson, Texas

PhD in Computer Engineering (transfer to Korea)

Advisor: Dr. Myoungsoo Jung

August 2014 – August 2015

University of Texas at Dallas, Richardson, Texas

Master of Science in Electrical Engineering

Advisor: Dr. Myoungsoo Jung

August 2012 – May 2014

Nanjing University of Posts and Telecommunications, Nanjing, China

BS in Communication Engineering (computer communication)

September 2008 – July 2012

论文发表情况

2024

TACO

Characterizing and Optimizing LDPC Performance on 3D NAND Flash Memories

CCF-A 期刊

Qiao Li, Yu Chen, Guanyu Wu, Yajuan Du, Min Ye, Xinbiao Gan, **Jie Zhang**, Zhirong Shen, Jiwu Shu, Chun Jason Xue

ACM Transactions on Architecture and Code Optimization

ISCA

Flagger: Cooperative Acceleration for Large-Scale Cross-Silo Federated Learning

CCF-A 会议

Aggregation

Xiurui Pan, Yuda An, Shengwen Liang, Bo Mao, Mingzhe Zhang, Qiao Li, Myoungsoo Jung, **Jie Zhang**

IEEE/ACM International Symposium on Computer Architecture

ASPLOS	Achieving Near-Zero Read Retry for 3D NAND Flash Memory
CCF-A 会议	Min Ye, Qiao Li, Yina Lv, Jie Zhang , Tianyu Ren, Daniel Wen, Tei-Wei Kuo, Chun Jason Xue ACM International Conference on Architectural Support for Programming Languages and Operating Systems
HPCA	StreamPIM: Streaming Matrix Computation in Racetrack Memory
CCF-A 会议	Yuda An, Yunxiao Tang, Shushu Yi, Li Peng, Xiurui Pan, Guangyu Sun, Zhaochu Luo, Qiao Li, Jie Zhang IEEE International Symposium on High-Performance Computer Architecture
HPCA	BeaconGNN: Large-Scale GNN Acceleration with Asynchronous In-Storage Computing
CCF-A 会议	Yuyue Wang, Xiurui Pan, Yuda An, Jie Zhang* , Glenn Reinman* IEEE International Symposium on High-Performance Computer Architecture
HPCA	LearnedFTL: A Learning-based Page-level FTL for Reducing Double Reads in Flash-based SSDs
CCF-A 会议	Shengzhe Wang, Zihang Lin, Suzhen Wu, Hong Jiang, Jie Zhang , Bo Mao IEEE International Symposium on High-Performance Computer Architecture
HPCA	Midas Touch: Invalid-Data Assisted Reliability and Performance Boost for 3D High-Density Flash
CCF-A 会议	QiaoLi, Hongyang Dang, Zheng Wan, Congming Gao, Min Ye, Jie Zhang , Tei-Wei Kuo, Chun Jason Xue IEEE International Symposium on High-Performance Computer Architecture

2023

NVMW	Optimizations of Linux Software RAID System for Next-Generation Storage
	Shushu Yi, Yanning Yang, Yunxiao Tang, Zixuan Zhou, Junzhe Li, Yue Chen, Myoungsoo Jung, Jie Zhang , The 14 th Annual Non-volatile Memories Workshop
SAC	BcBench: Exploring Throughput Processor Designs based on Blockchain Benchmarking
	Xiurui Pan, Yue Chen, Shushu Yi, Jie Zhang , The 38 th ACM/SIGAPP Symposium on Applied Computing
CAL	Intelligent SSD Firmware for Zero-Overhead Journaling
SCI 3 区	Hanyeoreum Bae, Donghyun Gouk, Seungjun Lee, Jiseon Kim, Sungjoon Koh, Jie Zhang , Myoungsoo Jung, IEEE Computer Architecture Letters (CAL)

2022

HotStorage	ScalaRAID: Optimizing Linux Software RAID System for Next-Generation Storage
	Shushu Yi, Yanning Yang, Yunxiao Tang, Zixuan Zhou, Junzhe Li, Yue Chen, Myoungsoo Jung, Jie Zhang ,

14th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage 22)

THPC

Survey on Storage-Accelerator Data Movement

Zixuan Zhou, Shushu Yi, [Jie Zhang](#),

CCF Transaction on High Performance Computing

NVMW

Integrating New Photonic-Based Heterogeneous Memory into Throughput Accelerators

[Jie Zhang](#), Myoungsoo Jung,

The 13th Annual Non-volatile Memories Workshop

NVMW

HAMS: Hardware Automated Memory-over-Storage for Large-scale Memory Expansion

[Jie Zhang](#), Miryeong Kwon, Donghyun Gouk, Sungjoon Koh, Nam Sung Kim,

Mahmut Taylan Kandemir, Myoungsoo Jung

The 13th Annual Non-volatile Memories Workshop

2021

MICRO

Ohm-GPU: Integrating New Optical Network and Heterogeneous Memory into GPU

CCF-A 会议

Multi-Processors

[Jie Zhang](#), Myoungsoo Jung,

The 54th Annual IEEE/ACM International Symposium on Microarchitecture

ISCA

Revamping Storage Class Memory with Hardware Automated Memory-Over-Storage

CCF-A 会议

Solution

[Jie Zhang](#), Miryeong Kwon, Donghyun Gouk, Sungjoon Koh, Nam Sung Kim,

Mahmut Kandemir, Myoungsoo Jung,

The IEEE/ACM International Symposium on Computer Architecture

NVMW

Architecting Throughput Processors with New Flash

[Jie Zhang](#), Myoungsoo Jung,

The 12th Annual Non-volatile Memories Workshop

NVMW

DRAM-less Accelerator for Energy Efficient Data Processing

[Jie Zhang](#), Gyuyoung Park, David Donofrio, John Shalf, Myoungsoo Jung

The 12th Annual Non-volatile Memories Workshop

NVMW

Manycore-Based Scalable SSD Architecture Towards One and More Million IOPS

[Jie Zhang](#), Miryeong Kwon, Michael Swift, Myoungsoo Jung,

The 12th Annual Non-volatile Memories Workshop

2020

ISCA

ZnG: Architecting GPU Multi-Processors with New Flash for Scalable Data Analysis

CCF-A 会议

[Jie Zhang](#), Myoungsoo Jung,

The IEEE/ACM International Symposium on Computer Architecture

FAST

Scalable Parallel Flash Firmware for Many-core Architectures

张杰

tel: +8619910031394 | email: jiezh@pku.edu.cn

CCF-A 会议	Jie Zhang , Miryeong Kwon, Michael Swift, Myoungsoo Jung, <i>The 18th USENIX Conference on File and Storage Technologies</i>
HPCA	DRAM-less: Hardware Acceleration of Data Processing with New Memory
CCF-A 会议	Jie Zhang , Gyuyoung Park, David Donofrio, John Shalf, Myoungsoo Jung <i>26th IEEE International Symposium on High-Performance Computer Architecture</i>
ISPASS	Data Direct I/O Characterization for Future I/O System Exploration
CCF-C 会议	Mohammad Alian, Yifan Yuan, Jie Zhang , Ren Wang, Myoungsoo Jung, Nam Sung Kim <i>The IEEE International Symposium on Performance Analysis of Systems and Software</i>
CAL	FastDrain: Removing Page Victimization Overheads in NVMe Storage Stack
SCI-3 区	Jie Zhang , Miryeong Kwon, Sanghyun Han, Nam Sung Kim, Mahmut Kandemir and Myoungsoo Jung <i>IEEE Computer Architecture Letters (CAL)</i>
2019	
HPCA	FUSE: Fusing STT-MRAM into GPUs to Alleviate Off-Chip Memory Access Overheads
CCF-A 会议	Jie Zhang , Myoungsoo Jung, Mahmut Kandemir, <i>25th IEEE International Symposium on High-Performance Computer Architecture</i>
IISWC	Faster than Flash: An In-Depth Study of System Challenges for Emerging Ultra-Low Latency SSDs
	Sungjoon Koh, Junkyeok Jang, Changrim Lee, Miryeong Kwon, Jie Zhang , Myoungsoo Jung, <i>The 2019 IEEE International Symposium on Workload Characterization</i>
DAC	FlashGPU: Placing New Flash Next to GPU Cores
CCF-A 会议	Jie Zhang , Miryeong Kwon, Hyojong Kim, Hyesoon Kim, Myoungsoo Jung, <i>The 56th Design Automation Conference (DAC)</i>
TPDS	Exploring Fault-Tolerant Erasure Codes for Scalable All-Flash Array Clusters
CCF-A 期刊	Sungjoon Koh, Jie Zhang , Miryeong Kwon, Jungyeon Yoon, David Donofrio, Nam Sung Kim, Myoungsoo Jung, <i>IEEE Transactions on Parallel and Distributed Systems (TPDS)</i>
NVMW	Addressing Fast-Detrapping for Reliable 3D NAND Flash Design
	Mustafa Shihab, Jie Zhang , Myoungsoo Jung, Mahmut Kandemir, <i>10th Annual Non-Volatile Memories Workshop -- Nominated as Memorable Paper Award</i>
KCC	Maximizing GPU Cache Utilization with Adjustable Cache Line Management
	Jie Zhang , Myoungsoo Jung, <i>Korean Computer Congress (KCC), 2019 -- Nominated as Excellent Paper Award</i>

2018

OSDI	FlashShare: Punching Through Server Storage Stack from Kernel to Firmware for
CCF-A 会议	Ultra-Low Latency SSDs <i>Jie Zhang, Miryeong Kwon, Donghyun Gouk, Changlim Lee, Mohammad Alian, Myoungjun Chun, Mahmut Kandemir, Nam Sung Kim, Jihong Kim, Myoungsoo Jung,</i> <i>13th USENIX Symposium on Operating Systems Design and Implementation</i>
MICRO	Amber: Enabling Precise Full-System Simulation with Detailed Modeling of All SSD
CCF-A 会议	Resources <i>Donghyun Gouk, Miryeong Kwon, Jie Zhang, Sungjoon Koh, Wonil Choi, Nam Sung Kim,</i> <i>Mahmut Kandemir, Myoungsoo Jung,</i> <i>The 51st Annual IEEE/ACM International Symposium on Microarchitecture</i>
TACO	ReveNAND: A Fast-Drift Aware Resilient 3D NAND Flash Design
CCF-B 期刊	<i>Mustafa Shihab, Jie Zhang, Myoungsoo Jung, Mahmut Kandemir,</i> <i>ACM Transactions on Architecture and Code Optimization (TACO), 2018</i>
Eurosys	FlashAbacus: A Self-governing Flash-based Accelerator for Low-power Systems
CCF-A 会议	<i>Jie Zhang, Myoungsoo Jung,</i> <i>The European Conference on Computer Systems (EuroSys), 2018</i>
IPDPS	CIAO: Cache Interference-Aware Throughput-Oriented Architecture and Scheduling for
CCF-B 会议	GPUs <i>Jie Zhang, Shuwen Gao, Nam Sung Kim, Myoungsoo Jung,</i> <i>32nd IEEE International Parallel & Distributed Processing Symposium (IPDPS), 2018</i>

2017

CAL	SimpleSSD: Modeling Solid State Drive for Holistic System Simulation
SCI-3 区	<i>Myoungsoo Jung, Jie Zhang, Ahmed Abulila, Miryeong Kwon, Narges Shahidi, John Shalf,</i> <i>Nam Sung Kim and Mahmut Kandemir,</i> <i>IEEE Computer Architecture Letters (CAL), 2017</i>
IISWC	Understanding System Characteristics of Online Erasure Coding on Scalable, Distributed and Large-Scale SSD Array Systems
	<i>Sungjoon Koh, Jie Zhang, Miryeong Kwon, Jungyeon Yoon, David Donofrio, Nam Sung Kim,</i> <i>Myoungsoo Jung,</i> <i>IEEE International Symposium on Workload Characterization (IISWC), 2017</i>
IISWC	TraceTracker: Hardware/Software Co-Evaluation for Large-Scale I/O Workload Reconstruction
	<i>Miryeong Kwon, Jie Zhang, Gyuyoung Park, Wonil Choi, David Donofrio, John Shalf,</i> <i>Mahmut Kandemir, Myoungsoo Jung,</i> <i>IEEE International Symposium on Workload Characterization (IISWC), 2017</i>

张杰

tel: +8619910031394 | email: jiez@pku.edu.cn

NPC	An In-depth Performance Analysis of Many-Integrated Core for Communication Efficient
CCF-C 会议	Heterogeneous Computing <i>Jie Zhang, Myoungsoo Jung,</i> <i>IFIP International Conference on Network and Parallel Computing (NPC), 2017</i>
NPC/IJPP	Enabling Realistic Logical Device Interface and Driver for NVM Express Enabled Full
CCF-C 会议	System Simulations <i>Donghyun Gouk, Jie Zhang, Myoungsoo Jung,</i> <i>IFIP International Conference on Network and Parallel Computing (NPC) and Invited for</i> <i>International Journal of Parallel Programming (IJPP), 2017</i>

2016

HPCA	DUANG: Fast and Lightweight Page Migration in Asymmetric Memory Systems
CCF-A 会议	<i>Hao Wang, Jie Zhang, Gieseok Park, Sharmila Shridhar, Myoungsoo Jung, Nam Sung Kim,</i> <i>IEEE Symposium on High Performance Computer Architecture (HPCA), 2016</i>
ASBD	A Study for Block-level I/O Trace Reconstruction on All-Flash Arrays <i>Miryeong Kwon, Jie Zhang, Gyuyoung Park, Myoungsoo Jung,</i> <i>Workshop on Architectures and Systems for Big Data (ASBD@ISCA), 2016</i>
NVMSA	An In-Depth Study of Next Generation Interface for Emerging Non-Volatile Memories <i>Wonil Choi, Jie Zhang, Shuwen Gao, Jaesoo Lee, Myoungsoo Jung, Mahmut Kandemir,</i> <i>IEEE Non-Volatile Memory Systems and Applications Symposium (NVMSA), 2016</i>
INFLOW	ROSS: A Design of Read-Oriented STT-MRAM Storage for Energy-Efficient Non-Uniform Cache Architecture <i>Jie Zhang, Miryeong Kwon, Chanyoung Park, Myoungsoo Jung, Songkuk Kim,</i> <i>USENIX Workshop on Interactions of NVM/Flash with Operating Systems and Workloads</i>
INFLOW	Couture: Tailoring STT-MRAM for Persistent Main Memory <i>Mustafa Shihab, Jie Zhang, Shuwen Gao, Josep Sloan, Myoungsoo Jung,</i> <i>USENIX Workshop on Interactions of NVM/Flash with Operating Systems and Workloads</i>

2015

ASBD	CoDEN: A Hardware/Software CoDesign Emulation Platform for SSD-Accelerated Near Data Processing <i>Jie Zhang, Damian Szmulewicz, Erick Macias, Myoungsoo Jung,</i> <i>The 5th Workshop on Architecture and System for Big Data (ASBD), 2015</i>
PACT	NVMMU: Direct Solid State Disk Access for GPU-Accelerated Data Processing
CCF-B 会议	<i>Jie Zhang, David Donofrio, John Shalf, Myoungsoo Jung,</i> <i>The 24th International Conference on Parallel Architecture and Compilation Techniques</i>

张杰

tel: +8619910031394 | email: jiezh@pku.edu.cn

ICCD	OpenNVM: An Open-Sourced FPGA-based NVM Controller for Low Level Memory
CCF-B 会议	Characterization <i>Jie Zhang, Gieseok Park, David Donofrio, Mustafa Shihab, John Shalf and Myoungsoo Jung, The 33rd International Conference on Computer Design (ICCD), 2015</i>
PACT-SRC	Integrating 3D Resistive Memory Cache into GPGPU for Energy-Efficient Data Processing <i>Jie Zhang, David Donofrio, John Shalf and Myoungsoo Jung, International Conference on parallel Architecture and Compilation Techniques (PACT) – ACM SRC 2nd Runner Award, 2015</i>
FAST-WiP	Shared Non-Volatile Memory Cache for Energy-Efficient High Throughput GPU Computing <i>Jie Zhang and Myoungsoo Jung, USENIX Conference on File and Storage Technologies Working in Progress (FAST WiP), 2015</i>

2014

HotStorage	Power, Energy, and Thermal Considerations in SSD-Based I/O Acceleration <i>Jie Zhang, Myoungsoo Jung, 6th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage 14), 2014</i>
------------	--

专利发表情况

- “Memory controlling device and computing device including the same”, Myoungsoo Jung, Donghyun Gouk, Miryeong Kwon, Sungjoon Koh, Jie Zhang, America (US20190171566A1)
- “Flash-based accelerator and computing device including the same”, Myoungsoo Jung, Jie Zhang, America (US10824341B2, US20180321859, US20170285968)
- “基于闪存的加速器和包含其的计算设备”, Myoungsoo Jung, Jie Zhang, China (CN107291424)
- “基于闪存的加速器及包括该加速器的计算设备”, Myoungsoo Jung, Jie Zhang, China (CN109460369)
- “Resistance switching memory-based accelerator”, Myoungsoo Jung, Gyuyoung PARK, Jie Zhang, America (US20180321880A1)
- “PARALLEL PROCESSING UNIT, COMPUTING DEVICE INCLUDING THE SAME, AND THREAD SCHEDULING METHOD”, Jie Zhang, Myoungsoo Jung, America (WO2018021620)
- “MEMORY CONTROL APPARATUS AND COMPUTING DEVICE INCLUDING SAME”, JUNG MYOUNGSOO, GOUK DONGHYUN, KWON MIRYEONG, KOH SUNGJOON, 정명수, JIE ZHANG, 국동현, 권미령, 고성준 장치에, Korea (KR1020180126267)
- “COMPUTING DEVICE, METHOD OF PROCESSING INPUT/OUTPUT REQUEST, AND RECORDING MEDIUM”, Jie Zhang, Myoungsoo Jung, Donghyun Gouk, Miryeong Kwon, Sungjoon Koh, America (pending)
- “FLASH-BASED COPROCESSOR”, Jie Zhang, Myoungsoo Jung, America (pending)
- “FLASH STORAGE DEVICE AND METHOD OF SCHEDULING PAGE VICTIMIZATION”, Jie Zhang, Myoungsoo Jung, America (pending)

研究经历

Research Assistant, Computer Architecture and Memory System Lab	2013 年 9 月 – 2021 年 5 月
<ul style="list-style-type: none">Cache and memory system optimization in GPGPU and multi-core system.Non-volatile memory (including Spin-transfer torque magnetic random-access memory and Phase Change	

Last update: April 22, 2024

张杰

tel: +8619910031394 | email: jiez@pku.edu.cn

Random Access Memory) characterization and optimization.

- Performance, power and thermal optimizations of Solid State Disk (SSD).
-

学术活动情况

Journal Paper Review/Sub-review

- IEEE Transactions on Computer
- ACM Transactions on Storage
- ACM Transactions on Architecture and Code Optimization
- ACM Transactions on Computer Systems
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Computer Architecture Letters
- IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems

Conference Paper Review/Sub-review

- MICRO'24'18 '16
 - ISCA'24
 - HPCA'24'18 '16
 - USENIX ATC'23
 - ChinaSys'22
 - SAC'22
 - HotStorage'20
 - DAC'20 '19
 - NVMSA'17 '16
 - ICCD'19 '18 '17 '15
 - IPDPS'18 '16
 - DATE'19
 - ASPLOS'19 '18 '17
-

演讲情况

- Invited talk, "ZnG: Architecting GPU Multi-Processors with New Flash for Scalable Data Analysis", Intel Computational Storage Lab, 2020
- Presentation, "ZnG: Architecting GPU Multi-Processors with New Flash for Scalable Data Analysis", ISCA, online, 2020
- Presentation, "DRAM-less: Hardware Acceleration of Data Processing with New Memory", HPCA, San Diego, CA, 2020
- Presentation, "Scalable Parallel Flash Firmware for Many-core Architectures", FAST, Santa Clara, CA, 2020
- Presentation, "FUSE: Fusing STT-MRAM into GPUs to Alleviate Off-Chip Memory Access Overheads", HPCA, Washington DC, 2019
- Presentation, "FlashGPU: Placing New Flash Next to GPU Cores", DAC, Las Vegas, NV, 2019
- Presentation, "Maximizing GPU Cache Utilization with Adjustable Cache Line Management", Jeju, South Korea, 2019
- Presentation, "FlashShare: Punching Through Server Storage Stack from Kernel to Firmware for Ultra-Low Latency SSDs", OSDI, Carlsbad, CA, 2018
- Presentation, "FlashAbacus: A Self-governing Flash-based Accelerator for Low-power Systems", Eurosys, Porto, Portugal, 2018

张杰

tel: +8619910031394 | email: jiez@pku.edu.cn

-
- Presentation, "CIAO: Cache Interference-Aware Throughput-Oriented Architecture and Scheduling for GPUs", IPDPS, Vancouver, Canada, 2018
 - Presentation, "An In-depth Performance Analysis of Many-Integrated Core for Communication Efficient Heterogeneous Computing", NPC, Anhui, China, 2017
 - Presentation, "ROSS: A Design of Read-Oriented STT-MRAM Storage for Energy-Efficient Non-Uniform Cache Architecture", Inflow, Savannah, GA, 2016
 - Presentation, "Couture: Tailoring STT-MRAM for Persistent Main Memory", Inflow, Savannah, GA, 2016
 - Presentation, "CoDEN: A Hardware/Software CoDesign Emulation Platform for SSD-Accelerated Near Data Processing", ASBD, Portland, OR, 2015
 - Presentation, "NVMMU: Direct Solid State Disk Access for GPU-Accelerated Data Processing", PACT, San Francisco, CA, 2015
 - Presentation, "Integrating 3D Resistive Memory Cache into GPGPU for Energy-Efficient Data Processing", PACT SRC, San Francisco, CA, 2015
 - Presentation, "OpenNVM: An Open-Sourced FPGA-based NVM Controller for Low Level Memory Characterization", ICCD, New York city, NY, 2015
 - Presentation, "Shared Non-Volatile Memory Cache for Energy-Efficient High Throughput GPU Computing", FAST WiP, Santa Clara, CA, 2015
 - Presentation, "Power, Energy, and Thermal Considerations in SSD-Based I/O Acceleration", HotStorage, Philadelphia, PA, 2014

教学经历

- Computer Architecture (Fall'22)
- Introduction of Computer System (Fall'22)
- IIT 3002 Operating Systems (Fall'15, Fall'16)
- IIT 6036 Computer Organization and Design (Fall'15, Fall'16)
- IIT 7024 Advanced System Architecture (Spring'16)

获奖情况

- 2023: 英特尔学术英才计划荣誉学者
- 2022: ACM SIGCSE 新星奖
- 2021: Our storage-class memory research is selected as KAIST breakthrough 50 years
- 2020-2021: Korean BK21+ Scholarship
- 2020: HPCA travel grant
- 2019: Annual Non-Volatile Memories Workshop (NVMW) -- Nominated as Memorable Paper Award
- 2019: Korea Computer Congress (KCC) -- Best Presentation Paper Award
- 2018: OSDI travel grant
- 2015: ACM Student Research Competition 2nd Runner Award