

# Ju Hyoung Mun / CV

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Updated: November 13, 2023

## Professional Experiences

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<b>Postdoctoral Fellow</b> <i>Boston University, Computer Science Dept.</i>	<b>Boston, MA, USA</b> <i>2019 - Present</i>
<b>Postdoctoral Researcher</b> <i>Ewha w. University, Electronic and Electrical Engineering Dept.</i>	<b>Seoul, South Korea</b> <i>2018 - 2019</i>
<b>Engineer</b> <i>DMC R&amp;D Center, Samsung Electronics</i>	<b>Suwon, South Korea</b> <i>2007 - 2013</i>

## Education

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<b>Ph.D. in Electronic and Electrical Engineering</b> <i>Ewha w. University, Highest Honors</i>	<b>Seoul, South Korea</b>
<b>M.Sc. in Information Electronics Engineering</b> <i>Ewha w. University</i>	<b>Seoul, South Korea</b>
<b>B.Sc. in Information Electronics Engineering</b> <i>Ewha w. University</i>	<b>Seoul, South Korea</b>

## Teaching Engagements

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<b>Instructor</b> .....	
<b>Computer Networking</b> <i>Ewha w. University, undergrad course, approximately 70 students</i>	<i>Fall, 2015</i>
<b>Teaching Assistant</b> .....	
<b>CS 561: Data Systems Architectures</b> <i>Boston University, graduate course</i>	<i>Spring, 2021</i>
<b>CS 561: Data Systems Architectures</b> <i>Boston University, graduate course</i>	<i>Spring, 2020</i>
<b>Data System Design and Lab</b> <i>Ewha w. University, undergrad course</i>	<i>Fall, 2018</i>
<b>Network Algorithms</b> <i>Ewha w. University, graduate course</i>	<i>Spring, 2016</i>
<b>Data Communication for Multimedia</b> <i>Ewha w. University, undergrad course</i>	<i>Fall, 2006</i>
<b>VLSI System Design and Lab</b> <i>Ewha w. University, undergrad course</i>	<i>Spring, 2006</i>
<b>Data Communication for Multimedia</b> <i>Ewha w. University, undergrad course</i>	<i>Fall, 2005</i>
<b>Digital Engineering</b> <i>Ewha w. University, undergrad course</i>	<i>Spring, 2005</i>

## Honors and Awards

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<b>Best Demonstration Award</b> <i>International Conference on Very Large Data Bases</i>	<i>2023</i>
<b>Fellowship for International Post-Graduate Researchers</b> <i>National Research Foundation of Korea</i>	<i>2019</i>

## Graduate School Award for Dissertation with Highest Honors

*Ewha w. University*

2018

## Best Paper Award (Bronze) and Best Poster Presentation

*International Conference on Electronics, Information, and Communication (ICEIC)*

2018

## Qualcomm Innovation Award

*Qualcomm Korea*

2017

## Excellent Academic Paper Award

*Ewha w. University*

2015

## Conference and Journal Papers

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- [1] **Ju Hyoung Mun**, Konstantinos Karatsenidis, Tarikul Islam Papon, Shahin Roozkhosh, Denis Hoornaert, Ahmed Sanaullah, Ulrich Drepper, Renato Mancuso, and Manos Athanassoulis, "On-the-fly Data Transformation in Action", in Proceedings of the VLDB Endowment, Vol. 16(12), 2023. **(Best Demonstration Award)**
- [2] Renato Mancuso, Shahin Roozkhosh, Denis Hoornaert, **Ju Hyoung Mun**, Tarikul Islam Papon, and Manos Athanassoulis, "Software-Shaped Platforms", Proceedings of the Cyber-Physical Systems and Internet of Things Week (CPS-IoT Week Workshops), 2023.
- [3] Tarikul Islam Papon, **Ju Hyoung Mun**, Shahin Roozkhosh, Denis Hoornaert, Ahmed Sanaullah, Ulrich Drepper, Renato Mancuso, and Manos Athanassoulis, "Relational Fabric: Transparent Data Transformation", in Proceedings of the IEEE International Conference on Data Engineering (IEEE ICDE), 2023.
- [4] Shahin Roozkhosh, Denis Hoornaert, **Ju Hyoung Mun**, Tarikul Islam Papon, Ahmed Sanaullah, Ulrich Drepper, Renato Mancuso, and Manos Athanassoulis "Relational Memory: Native In-Memory Accesses on Rows and Columns", in Proceedings of the 26th International Conference on Extending Database Technology (EDBT 2023), March 2023.
- [5] **Ju Hyoung Mun**, Zichen Zhu, Aneesh Raman, and Manos Athanassoulis, "LSM-Trees Under (Memory) Pressure", in Proceedings of the International Workshop on Accelerating Data Management Systems Using Modern Processor and Storage Architectures (ADMS), 2022.
- [6] Zichen Zhu, **Ju Hyoung Mun**, Aneesh Raman, and Manos Athanassoulis, "Reducing Bloom Filter CPU Overhead in LSM-Trees on Modern Storage Devices", in Proceedings of the International Workshop on Data Management on New Hardware (DaMoN), 2021.
- [7] **Ju Hyoung Mun** and Hyesook Lim, "FIB sharing using Bloom filters in named data networking", Applied Science, vol. 9, no. 15, 2019.
- [8] **Ju Hyoung Mun** and Hyesook Lim, "Cuckoo Bloom Filter", in Proceedings of International Conference on Electronics, Information, and Communication (ICEIC), 2019.
- [9] **Ju Hyoung Mun** and Hyesook Lim, "Updatable Complement Bloom Filter", in Proceedings of International Conference on Electronics, Information, and Communication (ICEIC), 2018. **(Best Paper Award (Bronze) and Best Poster Presentation)**
- [10] **Ju Hyoung Mun** and Hyesook Lim, "Cache Sharing using Bloom filters in named data networking", Journal of Network and Computer Applications Elsevier Science, vol. 90, pp. 74-82, 2017.
- [11] Jungwon Lee, Hayoung Byun, **Ju Hyoung Mun**, and Hyesook Lim, "Utilizing 2-D LeafPushing for Packet Classification", Computer Communications, vol. 103, pp. 116-1129, 2017.
- [12] **Ju Hyoung Mun**, Jungwon Lee, and Hyesook Lim, "A New Bloom Filter Structure for Identifying True Positiveness of a Bloom Filter", in Proceedings of IEEE International Conference on High-Performance Switching and Routing (HPSR) , 2017.
- [13] **Ju Hyoung Mun** and Hyesook Lim, "New Approach for Efficient IP Address Lookup Using a Bloom Filter in Trie-Based Algorithms", IEEE Transactions on Computers, vol. 65, no. 5, pp. 1558-1565, 2016.
- [14] **Ju Hyoung Mun** and Hyesook Lim, "Cache Content Sharing Using Bloom Filter in Named Data Network", in Proceedings of ACM/IEEE Symposium on Architectures for Networking and Communication Systems (ANCS), 2016.
- [15] **Ju Hyoung Mun** and Hyesook Lim, "On Reducing False Positives of a Bloom Filter in Trie-Based Algorithms", IEE Transactions on Smart Processing and Computing, vol. 4, no. 3, pp. 163-168, 2015.
- [16] **Ju Hyoung Mun** and Hyesook Lim, "On Reducing False Positives of a Bloom Filter in Trie-Based Algorithms" in Proceedings of ACM/IEEE Symposium on Architectures for Networking and Communication Systems (ANCS), 2014.
- [17] Hyesook Lim and **Ju Hyoung Mun**, "High-Speed Packet Classification Using Binary Search on Length", in Proceedings of ACM/IEEE Symposium on Architectures for Networking and Communication Systems (ANCS), 2007.
- [18] Hyesook Lim and **Ju Hyoung Mun**, "An Efficient IP Address Lookup Algorithm Using a Priority-Trie", in Proceedings of IEEE Global Communications Conference (GLOBECOM), 2006.

- [19] **Ju Hyoung Mun**, Hyesook Lim, and Changhoon Yim, "Binary Search on Prefix Lengths for IP Address Lookup", IEEE Communications Letters, vol. 10, no. 6, pp. 492-494, 2006.
- [20] **Ju Hyoung Mun**, Myung-Ryong Nam, and Sung Min Park, "Four-Channel CMOS Photoreceiver Array for Parallel Optical Interconnects", in Proceedings of IEEE International Symposium on Circuits and Systems (ISCAS), 2005.

## Invited Talks

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- [1] "Relational Memory: Native In-Memory Accesses on Rows and Columns," DevConf, USA (2022)
- [2] "Bloom Filters for Faster Lookups," New Jersey Institute of Technology, USA (2021)
- [3] "FIB Sharing and Cache Sharing Using Bloom Filters in NDN," IEEE HPSR (2020)
- [4] "Information Sharing Using Bloom Filters," Korea University, South Korea (2019)
- [5] "Information Sharing Using Bloom Filters in Named Data Networking," IEEE ICCEAsia (2018)

## Community Service

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- *ADMS Program committee* 2023
- *Organizing committee for International Conference on Electronics, Information, and Communication* 2020
- *Organizing committee for Institute of Electronics and Information Engineers Fall Conference* 2018
- *Poster Selection Committee for IEEE/ACM ANCS* 2016
- *Reviewer for IEEE Communications Letters, Computer Networks, Journal of Network and Computer Applications, and ADMS*