Gyuyeong Kim, Ph.D.
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https://gyuyeongkim.github.io/

RESEARCH INTERESTS
Networked systems, Data center networking, Programmable hardware, Networking support for cloud, big data, and AI systems

EDUCATION

Ph.D. in Computer Science, Korea University	Mar. 2012 - Feb. 2020
Thesis: Buffer Sharing Mechanisms for Data Center Networks	
Advisor: Prof. Wonjun Lee	
B.S. in Computer Science, Korea University	Mar. 2008 - Feb. 2012

EMPLOYMENT HISTORY

Research Professor, Future Network Center, Korea University	Mar. 2020 - Present
Lecturer, School of Cybersecurity, Korea University	Sept. 2019 - Feb. 2020

RESEARCH GRANTS
가변형 네트워크 디바이스를 활용한 인네트워크 자원 증강 기술 Mar. 2020 - Feb. 2023
In-Network Resource Augmentation utilizing Reconfigurable Network Devices, Young Research Program (**신진연구지원사업**), NRF,Grant: 294,000,000 KRW

TEACHING EXPERIENCE

Instructor, Korea University

Computer Networks (IMS301)	2020S, 2019F

Teaching Assistant, Korea University

Computer Networks (IMS301)	2019S, 2018S, 2017F
Computer Networks (IMS2012)	2018 (Summer)
Computer Networks (CYDF316)	2016F
Computer Networks (CYDF321)	2016S
Computer Networks (COSE342)	2015F
Communication Networks (CYDF305)	2014S
Wireless Mobile Communications (CNCE407)	2013S, 2012S

PROFESSIONAL ACTIVITIES
Reviewer
IEEE International Conference on Computer Communications (INFOCOM), 2020
IEEE International Conference on Distributed Computing Systems (ICDCS), 2019
IEEE Transactions on Cloud Computing (TCC)
IEEE Networking Letters

CONFERENCE PUBLICATIONS

1. **Gyuyeong Kim** and Wonjun Lee, "Protocol-Independent Service Queue Isolation for Multi-Queue Data Centers," in *Proc. of the 40th IEEE International Conference on Distributed Computing Systems* **(ICDCS 2020)**, Singapore, December 2020. (Acceptance rate: 17.98%=105/508, **NRF Top-tier Conference Grade 3**)
2. **Gyuyeong Kim** and Wonjun Lee, "Service Function Chaining on Programmable Data Plane," in *Proc. of the 5th International Conference On Consumer Electronics Asia* (ICCE-Asia 2020), Busan, South Korea, November 2020.

3. **Gyuyeong Kim** and Wonjun Lee, "Stable Matching with Ties for Cloud-assisted Smart TV Services," in *Proc. of the 14th IEEE International Conference on Consumer Electronics* (ICCE 2014), Las Vegas, NV, January 2014.
4. **Gyuyeong Kim** and Wonjun Lee, "Cannot Take My Allocation: Enforcing Fairness by Considering Demand and Payment in Clouds," in *Proc. of the 4th International Conference on Network of the Future* (NoF 2013), Pohang, South Korea, October 2013.
5. **Gyuyeong Kim**, Hoorin Park, Jieun Yu, and Wonjun Lee, "Virtual Machines Placement for Network Isolation in Clouds," in *Proc. of 2012 Research in Applied Computation Symposium* (RACS 2012), San Antonio, TX, October 2012.

JOURNAL PUBLICATIONS

1. **Gyuyeong Kim** and Wonjun Lee, "LossPass: Absorbing Microbursts by Packet Eviction for Data Center Networks," to appear in *IEEE Transactions on Cloud Computing* **(TCC)**, Vol. xx, No. xx, pp. xxxx-xxxx, January 2021. (JCR2019 I/F 4.714)
2. **Gyuyeong Kim** and Wonjun Lee, "Enabling Service Queue Isolation in Multi-Tenant Data Centers," *IEEE Communications Letters* **(CL)**, Vol. 23, No. 11, pp. 1949-1952, November 2019. (JCR2019 I/F 3.419)
3. **Gyuyeong Kim** and Wonjun Lee, "Absorbing Microbursts without Headroom for Data Center Networks," *IEEE Communications Letters* **(CL)**, Vol. 23, No. 5, pp. 806-809, May 2019. (JCR2019 I/F 3.419)
4. **Gyuyeong Kim** and Wonjun Lee, "Tardy Flow Scheduling in Data Center Networks," *IEICE Transactions on Information and Systems*, Vol. E99-D, No. 9, pp. 2400-2403, September 2016. (JCR2019 I/F 0.449)

PATENTS

1. Wonjun Lee and **Gyuyeong Kim**, "Method to Enforce Network Policy with Commodity Multiqueue, Recording Medium and Device for Performing the Method (다중 큐를 지원하는 네트워크 정책 적용 방법, 이를 수행하기 위한 기록 매체 및 장치)," *Korean Patent Registration No. 10-2179769*, November 11, 2020.
2. Wonjun Lee and **Gyuyeong Kim**, "Method for Data Processing (데이터 처리 방법)," *Korean Patent Registration No. 10-2064679*, January 3, 2020.
3. Wonjun Lee and **Gyuyeong Kim**, "Method and Device for Scheduling Flow of Packet for Reducing Delay Time Due To Retransmit of Packet (패킷의 재전송으로 인한 지연을 단축시키기 위한 패킷의 플로우 스케줄링 방법 및 장치)," *Korean Patent Registration No. 10-1841143*, March 16, 2018.

RESEARCH EXPERIENCE

Intelligent and Autonomous Networking

- aSTEAM: App-Specialized Transport for Evolvability, Autonomicity, and Measurability, NRF, PI:*Prof. Wonjun Lee, Korea University* Oct. 2018 - Dec. 2020

Programmable Network Devices

- In-Network Resource Augmentation utilizing Reconfigurable Network Devices, NRF, PI:*Dr. Gyuyeong Kim, Korea University* Mar. 2020 - Feb. 2023
- Development of Core Technologies for Programmable Switch in Multi-Service Networks, IITP, PI:*Prof. Sangheon Pack, Korea University* Jan. 2017 - Dec. 2020

Cloud Computing Systems and Data Center Networks

- Cloud Bridges-Piers: Optimization Technologies towards Higher Performance of Wireless Networking Cloud, NRF, PI:*Prof. Wonjun Lee, Korea University* Jun. 2013 - May 2016
- A Fair Network Performance Isolation Framework in Multi-Tenancy Cloud Data Center Networks, Global Ph.D. Fellowship, NRF Mar. 2012 - Feb. 2014

INVITED TALKS

Tutorial: P4 SFC
SDN/NFV Forum P4 WG 2019 1st Meetup, Seoul, South Korea — Apr. 19, 2019

Service Function Chaining in P4-enabled Programmable Switches
SDN/NFV Forum P4 WG 2018 2nd Meetup, Seoul, South Korea — Oct. 12, 2018

Controller-independent Loss-aware Low Latency State Migration in Network Functions Virtualization
ONOS-P4 Brigade Work Days 2017, Seoul, South Korea — Sept. 19, 2017

AWARDS AND HONORS

IEEE Seoul Section International Student Paper Contest Bronze Paper Award — 2014
Global Ph.D. Fellowship (GPF), NRF, South Korea — 2012 - 2014
ACM-ICPC Seoul Regional Contest 10th Place — 2009
National Collegiate Programming Contest Silver Prize, South Korea — 2009
Oracle JavaFX Software Contest 3rd Prize — 2009
ACM-ICPC Seoul Regional Contest Honorable Mentions — 2008

REFERENCES

Available upon request.

January 8, 2021