

## Gyuyeong Kim, Ph.D.

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<https://gyuyeongkim.github.io/>

<b>RESEARCH INTERESTS</b>	Networked systems, Cloud computing, Networking support for big data, AI, cloud, and IoT systems	
<b>EDUCATION</b>	Ph.D. in Computer Science, Korea University	Mar. 2012 - Feb. 2020
	<i>Thesis:</i> Buffer Sharing Mechanisms for Data Center Networks	
	<i>Advisor:</i> Prof. Wonjun Lee	
	B.S. in Computer Science, Korea University	Mar. 2008 - Feb. 2012
	<i>Interdisciplinary major:</i> Brain and Cognitive Sciences	
<b>EMPLOYMENT HISTORY</b>	Research Professor, Future Network Center, Korea University	Mar. 2020 - Present
	Lecturer, Department of Information Security, Seoul Women's University	Mar. 2021 - Present
	Lecturer, School of Cybersecurity, Korea University	Sept. 2019 - Feb. 2020
<b>RESEARCH GRANTS</b>	가변형 네트워크 디바이스를 활용한 인네트워크 자원 증강 기술 In-Network Resource Augmentation utilizing Reconfigurable Network Devices, Young Research Program (신진연구지원사업), NRF, Grant: 294,000,000 KRW	Mar. 2020 - Feb. 2023
<b>TEACHING EXPERIENCE</b>	<b>Instructor</b> , Seoul Women's University	
	IP01024-01 Data Communication and Network (데이터통신및네트워크)	2021S
	IP01024-02 Data Communication and Network (데이터통신및네트워크)	2021S
	<b>Instructor</b> , Korea University	
	IMS301 Network Theory (네트워크개론)	2020S
	IMS301 Network Theory (네트워크개론)	2019F
	<b>Teaching Assistant</b> , Korea University	
	IMS301 Network Theory (네트워크개론)	2019S, 2018S, 2017F
	IMS2012 Network Theory (네트워크개론)	2018 (Summer)
	CYDF316 Computer Networks (컴퓨터네트워크)	2016F
	CYDF321 Computer Networks (컴퓨터네트워크)	2016S
	COSE342 Computer Networks (컴퓨터네트워크)	2015F
	CYDF305 Communication Networks (통신네트워크)	2014S
	CNCE407 Wireless Mobile Communications (무선통신)	2013S, 2012S
<b>PROFESSIONAL ACTIVITIES</b>	<b>Reviewer</b>	
	IEEE Transactions on Cloud Computing (TCC)	
	IEEE Networking Letters	
	IEEE International Conference on Computer Communications (INFOCOM), 2020	
	IEEE International Conference on Distributed Computing Systems (ICDCS), 2019	

## 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, Top 10.19% in Computer Science, Theory & Methods)
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, Top 35.55% in Telecommunications)
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, Top 35.55% in Telecommunications)
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, Top 98.71% in Computer Science, Information Systems)

## 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

### Big Data/AI/Cloud Acceleration with Programmable Networking Hardware

- 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 Park, Korea University Jan. 2017 - Dec. 2020

### Intelligent and Autonomous Networking

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

- P4 Switch Architecture  
**SDN/NFV Forum P4 WG 2020 1st Meetup**, Seoul, South Korea Dec. 14, 2020
- 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.

April 11, 2021