



Yung Yi

Associate Professor
Dept. of Electrical Engineering, KAIST
335 Gwahangno, Yuseong-gu,
Daejeon 305-701, Korea

E-mail: yyiung@kaist.edu
Office: +82-42-350-3486
Cell: +82-10-6527-0525
Web: <http://lanada.kaist.ac.kr>

1 Brief CV

Education

- Summer, 2006 **Ph.D.**
Electrical and Computer Engineering, The University of Texas at Austin, USA
Thesis: Fluid Models for Internet Design and Simulation
Adviser: Prof. Sanjay Shakkottai
- Spring, 1999 **M.S.E.**
School of Computer Science and Engineering, Seoul National University, Korea
Thesis: QoS-constrained Multicast Routing Considering Identical Multiple Sources
Adviser: Prof. Yanghee Choi
- Spring, 1997 **B.S.E.**
School of Computer Science and Engineering, Seoul National University, Korea

Work Experience

- 2011.8 - *Associate Professor*
Electrical Engineering, KAIST
CNS (Computing Networking Security) Group
Director of Laboratory of Network Design and Analysis
- 08/2008 - 08/2011 *Assistant Professor*
Electrical Engineering, KAIST
- 02/2014 - 02/2015 *Visiting Professor (Sabbatical)*
Electrical Engineering, North Carolina State University, USA
- 08/2006 - 08/2008 *Postdoctoral Research Scientist*
Electrical Engineering, Princeton University

01/2003 - 08/2006 *Research Assistant*
Electrical Engineering, University of Texas at Austin

08/2001 - 08/2002 *Software Programmer*
Togabi-Korea Inc.

01/2001 - 06/2002 *Computer Security Researcher*
The Supreme Public Prosecutor's Office, Korea

12/1999 - 02/2000 *Visiting Researcher*
North Carolina State University

04/1999 - 02/2000 *Deputy Chair*
APAN-KR, Technology Working Group

Fields of Research Interest

- Performance evaluation of communication networks
- Resource allocation in wireless networks
- Mobility-aware networking
- Network greening and network economics
- Complex networks and social networks
- Machine learning in networking

2 Teaching

2.1 Offered Courses

2.1.1 EE Courses Offered by Myself

	Qrtr/Yr	Course (Credit)	Title	Evaluation (Dept., School)	# of studs.	Comment
1	Fall/2013	EE209(3)	Programming Structure for Electrical Engineers	4.25(4.19,4.16)	68	
2	Spring/2013	EE827(3)	Complex Network Analysis	4.65(4.17,4.14)	78	new
3	Spring/2013	EE650(3)	Optimization in Communication Networks	4.76(4.17,4.14)	26	
4	Fall/2012	EE205(3)	Data Structure for Electrical Engineers	4.63(4.18,4.19)	20	

5	Spring/2012	EE655(3)	Network Economics	4.64(4.09,4.16)	22	EE Teaching Award
6	Fall/2011	EE205(3)	Data Structure for Electrical Engineers	4.54(4.14,4.10)	74	
7	Spring/2011	EE650(3)	Optimization in Communication Networks	4.56(4.06,4.05)	18	
8	Fall/2010	EE205(3)	Data Structure for Electrical Engineers	4.44(4.13,4.09)	83	
9	Spring/2010	EE655(3)	Network Economics	4.63(4.06,4.01)	14	new
10	Fall/2009	EE650(3)	Optimization in Communication Networks	4.15(4.06,4.01)	21	
11	Spring/2009	EE484(3)	Computer Network	4.20(4.02,4.00)	26	
12	Fall/2008	EE726(3)	Optimization in Communication Networks	4.38(4.10,4.15)	21	

2.1.2 EE Group Courses

	Qrtr/Yr	Course (Credit)	Title	Evaluation (Dept., School)	# of studs.	Comment
1	Fall/2012	EE105(3)	Introduction to Electrical Engineering	3.90(4.18,4.19)	123	6 lecturers
2	Fall/2010	EE105(3)	Introduction to Electrical Engineering	3.97(4.13,4.09)	134	6 lecturers

2.1.3 Freshmen Courses

	Qrtr/Yr	Course (Credit)	Title	Evaluation (Dept., School)	# of studs.	Comment
1	Spring/2009	ED100(3)	Freshmen Design	3.82(3.7,4.0)	25	
2	Spring/2010	HSS190(1)	Freshmen Seminar	N/A	9	
3	Fall/2011	HSS091(1)	Exciting College Life	N/A	30	
4	Fall/2012	HSS189(1)	Freshmen Seminar	N/A	24	

2.1.4 URP (Undergraduate Research Participation) Courses

	Qtr/Yr	Students	Comment
1	Spring/2011	Byungcheol Yeo	
2	Spring/2012	Hyosun Hwang	Grand Prix (1st Place)
3	Fall/2012	Kimin Lee, Jooho Yun	Excellent Award (2st Place)
4	Fall/2014	Donghoon Lee, Taein Kim	Before evaluation

2.2 Teaching Performance Indicators

- Average Evaluation Score: 4.49 (EE: 4.11, KAIST: 4.10) (based only on EE courses offered by myself)
- Best Teaching Award: Spring/2012, Network Economics, EE, KAIST
- One grand prix and one excellent award in URP course advising

2.3 Student Supervision

2.3.1 Ph.D./Master Students-Graduated

	Name	Year	PhD/MS	Title	Comment
1	Hanjin Park	2015	PhD	Towards Robust Wireless Cellular Networks: Security and Economic Approaches	NSRI (National Security Research Institute)
2	Joohyun Lee	2014	PhD	Mobility-driven wireless offloading system: architecture, scheduling and economic analysis	Postdoc, OSU
3	Jaesung Jeong	2014	PhD	Forwarding, Sensing and Prediction in Human-Driven Mobile Opportunistic Networks	Postdoc, KTH
4	Jinsung Lee	2012	PhD	Practical Cross-Layer Protocol Design for Multi-hop Wireless Networks	Samsung
1	Jooho Yoon	2015	MS	Maestro: Statistical Bandwidth Guarantees for Cloud Computing	Tmax
2	Yongtae Im	2014	MS	Optimal sampling-based rate adaptation: implementation and performance evaluation	Samsung
3	Byungcheol Yeo	2014	MS	Small scale low bit-rate wireless network: design and simulation	KISTI

4	Ebido Timothy John	2013	MS	Design and implementation of a logging interface for an open content delivery interconnection system	Samsung
5	Sangwoo Moon	2013	MS	Energy-efficiency User Association in Cellular Networks: A Population Game Approach	PhD, KAIST
6	Olavario Cristopher	2012	MS	Reciprocity and selectiveness in stochastic peer-to-peer networks	Samsung
7	Hyeryung Jang	2012	MS	Economic Benefits of ISP-CDN and ISP-ISP Cooperation	PhD, KAIST
8	Hyojeong Lee	2012	MS	On the Stability of ISPs Coalition Structure: Under the Shapley Value based Revenue Sharing	PhD, KAIST
9	Jihyeong Lee	2011	MS	Multi-Core Multi-Threaded Packet I/O Architecture for High-Speed Network Intrusion Detection System	PhD, KAIST
10	Soohwan Lee Lee	2011	MS	Emulation Based BS Association in Wireless Cellular Networks	PhD, KAIST
11	Dongyu Yun	2011	MS	Virtual Network Embedding in Wireless Networks	PhD, KAIST

2.3.2 Ph.D./Master Students-Under current supervision

	Name	PhD/MS	Research Topic	Comment
1	Donggyu Yun	PhD	Learning and bandit optimization of wireless networks	
2	Soohwan Lee	PhD	Greening of wireless cellular Networks	
3	Jihyeong Lee	PhD	Scalable software architecture for high-speed packet capture and processing	
4	Hyeryung Jang	PhD	Learning in computer networks and deep learning	
5	Hyojung Lee	PhD	Economically viable computer networking for efficient eco-system in Internet	
6	Jungseul Ok	PhD	Strategic diffusion in social networks	PhD/MS integration
7	Sangwoo Moon	PhD	Game-theoretic design of wireless networks and social network analysis	
8	Deawoo Kim	PhD	IoT/Sensor platform and protocol design	PhD/MS integration
9	Jinhwan Jung	PhD	IoT/Sensor platform and protocol design	PhD/MS integration
10	Nansol Seo	PhD	Resource allocation in wireless multi-hop networks	starts in 2015

1	Segi Kim	MS	Efficient resource allocation in LTE-based systems	
2	Byounguk Lee	MS	currently background study	starts in 2015
3	Sumyeong Ahn	MS	currently background study	starts in 2015

3 Research and Creative Scholarship

3.1 Thesis

Ph.D.

- Title: Fluid Models for Internet Design and Simulation
- Date completed: Summer, 2008
- Advisor: Sanjay Shakkottai
- College: University of Texas at Austin, Electrical Engineering

M.S.

- Title: Design of Multicast Routing considering Identical Sources
- Date completed: Spring, 1999
- Advisor: Yanghee Choi
- College: Seoul National University, School of Computer Science and Engineering

3.2 Publication

3.2.1 Book Chapters

- B1 Daewoo Kim, Jinhwan Jung, Hankyeol Lee, and **Yung Yi**, *“Energy-efficient Sensing Data Delivery for Low Power Environmental Sensors,”* Smart Sensors for Health and Environment Monitoring, Springer, 2015 (scheduled).
- B2 Jinhwan Jung, Daewoo Kim, Hankyeol Lee, and **Yung Yi**, *“Data Networking for Autonomous Fatigue Crack Detection,”* Smart Sensors for Health and Environment Monitoring, Springer, 2015 (scheduled).
- B3 Hojin Lee, Donggyu Yun, and **Yung Yi**, *“Distributed Medium Access for Camera Sensor Networks: Theory and Practice,”* Smart Sensors, Springer, 2015 (scheduled).
- B4 Kyuho Son, Hongseok Kim, **Yung Yi**, and Bhaskar Krishnamachari, *“Greening Cellular Networks,”* Green Communications: Theoretical Fundamentals, Algorithms, and Applications, CRC Press, 2012.
- B5 **Yung Yi** and Mung Chiang, *“Stochastic network utility maximization and wireless scheduling”*, Next Generation Internet Architectures and Protocols, Cambridge University Press, 2011.

3.2.2 Journal Papers: Published/Accepted

- J1 Kyunghan Lee, Jaeseong Jeong, **Yung Yi**, Hyungsuk Won, Injong Rhee and Song Chong, “*Max-Contribution: On Optimal Resource Allocation in Delay Tolerant Networks*,” IEEE Transactions on Mobile Computing, 2015 (scheduled).
- J2 Hanjin Park, **Yung Yi**, and Yongdae Kim “*Revisiting Security of Proportional Fair Scheduler in Wireless Cellular Networks*,” Elsevier Computer Networks Journal, vol. 75, Part A, pp 58-74, Dec., 2014.
- J3 Youngmi Jin, George Kesidis, Jinwoo Shin, Fatih Kocak, **Yung Yi**, “*Impacts of selfish behaviors on the scalability of hybrid server client and peer-to-peer caching systems*,” IEEE/ACM Transactions on Networking, vol. PP, no. 99, Aug., 2014.
- J4 Joohyun Lee, **Yung Yi**, Song Chong, and Youngmi Jin “*Economics of Wifi Offloading: Trading Delay for Cellular Capacity*,” , IEEE Transactions on Wireless Communications, vol. 13, no. 3, pp 1540-1554, Jan., 2014.
- J5 Jaeseong Jeong, Kyunghan Lee, **Yung Yi**, Song Chong, and Injong Rhee, “*ExMin: A Routing Metric for True Opportunity Gain in Delay Tolerant Networks*,” Elsevier Computer Networks Journal, vol. 59, pp. 184-196, Feb., 2014.
- J6 Jeong-woo Cho and **Yung Yi**, “*On the Payoff Mechanisms in Peer-assisted Services with Multiple Providers: Rationality and Fairness*,” IEEE/ACM Transactions on Networking, vol. 22, no. 3, pp. 731-744, Jun., 2014.
- J7 Kyunghan Lee, Yoora Kim, Song Chong, Injong Rhee, and **Yung Yi**, “*On the Critical Delays of Mobile Networks under Levy Walks and Levy Flights*”, IEEE/ACM Transactions on Networking, vol. 21, no. 5, pp. 1621-1635, Oct., 2013.
- J8 Donggyu Yun, Jeongseul Ok, and **Yung Yi**, “*On the Embedding of Virtual Network Requests over Static Wireless Multihop Networks*,” Elsevier Computer Networks Journal, vol. 57, no. 5, pp. 1139-1152, Apr., 2013.
- J9 Kyunghan Lee, Joohyun Lee, **Yung Yi**, Injong Rhee, and Song Chong, “*Mobile Data Offloading: How Much Can WiFi Deliver?*,” IEEE/ACM Transactions on Networking, vol. 21, no. 2, pp. 536-550, Apr., 2013.
- J10 Jeongho Kwak, Kyuho Son, **Yung Yi**, and Song Chong, “*Greening Effect of Interference Management with Power Sharing Policies under Energy Regulation*,” IEEE Transactions on Wireless Communications, vol. 11, no. 12, pp. 4405-4412, Dec., 2012.
- J11 Paschalis Tsiaflikis, **Yung Yi**, Mung Chiang, and Marc Moonen, “*Throughput and Delay Performance of DSL Broadband Access with Cross-Layer Dynamic Spectrum Management*,” IEEE Transactions on Communications, vol. 60, no. 9, pp. 2700-2711, Sep., 2012.
- J12 Jinsung Lee, Hyang-Won Lee, **Yung Yi**, and Song Chong, “*Improving TCP Performance Over Optimal CSMA in Wireless Multi-hop Networks*,” IEEE Communication Letters, vol. 16, no. 9, pp. 1388-1391, Sep., 2012.
- J13 Soohwan Lee, Kyuho Son, Huazi Gong, **Yung Yi**, “*Base Station Association in Wireless Cellular Networks: An Emulation Based Approach*,” IEEE Transactions on Wireless Communications, vol. 11, no. 8, pp. 2720-2729, Aug., 2012.
- J14 Seyoung Yun, **Yung Yi**, Dongho Cho, and Jeonghoon Mo, “*The Economic Effects of Sharing*

- Femtocells*,” IEEE Journal on Selected Areas in Communications, Special Issue on Femtocells, vol. 30, no. 3, pp. 595-606, Apr., 2012.
- J15 Paschalis Tsiaflakis, **Yung Yi**, Mung Chiang, and Marc Moonen, “*Fair Greening of Broadband Access: Spectrum Management for Energy-Efficient DSL Networks*,” EURASIP Journal on Wireless Communications and Networking, Oct., 2011.
- J16 Kyuho Son, Hongseok Kim, **Yung Yi**, Bhaskar Krishnamachari, “*Base Station Operation and User Association Mechanisms for Energy-Delay Tradeoffs in Green Cellular Networks*,” IEEE JSAC (Journal on Selected Areas in Communications) Special Issue on Energy-efficient Design of Wireless Networks, vol. 29, no. 8, pp 1525-1536, Sep., 2011.
- J17 Kyuho Son, Soohwan Lee, **Yung Yi**, Song Chong, “*REFIM: A Practical Interference Management in Heterogeneous Wireless Access Networks*,” IEEE JSAC (Journal on Selected Area in Communications) Special Issue on Distributed Broadband Wireless Communications, vol 29, no 6, pp 1260-1272, Jun., 2011.
- J18 Kyuho Son, **Yung Yi**, Song Chong, “*Utility-Optimal Multi-Pattern Reuse in Multi-cell Networks*,” IEEE Transactions on Wireless Communications, vol 10, no 1, pp 142-153, Jan., 2011.
- J19 **Yung Yi**, Gustavo de Veciana, and Sanjay Shakkottai, “*MAC Scheduling with Low Overheads by Learning Neighborhood Contention Patterns*,” IEEE/ACM Transactions on Networking, vol 18, no 5, pp 1637-1650, Oct., 2010.
- J20 Kyunghan Lee, Joohyun Lee, **Yung Yi**, Injong Rhee, and Song Chong, “*Mobile Data Offloading: How Much Can WiFi Deliver?*,” ACM Computer Communication Review, vol 40, no 4, pp 425-426, Aug., 2010.
- J21 Jiaping Liu, **Yung Yi**, Alexandre Proutiere, Mung Chiang, and Vincent H. Poor, “*Towards Utility Optimal Random Access Without Message Passing*,” Wiley Wireless Communications and Mobile Computing, vol 10, no 1, pp 115-128, Jan., 2010.
- J22 Jiaping Liu, Alexandre Proutiere, **Yung Yi**, Mung Chiang, and Vincent H. Poor, “*Stability, Fairness, and Performance: A Flow-level Stability for Non-convex and Time-varying Rate Regions*,” IEEE Transactions on Information Theory, vol 55, no. 8, pp 3437-3456, Aug., 2009.
- J23 **Yung Yi** and Sanjay Shakkottai, “*On the Elasticity of Marking Functions: Scheduling, Stability, and Quality-of-Service in the Internet*,” IEEE Transactions on Automatic Control, vol 54, no. 2, pp 323-336, Feb., 2009.
- J24 **Yung Yi** and Mung Chiang, “*Stochastic Network Utility Maximization: A tribute to Kelly’s paper published in this journal a decade ago*,” European Transactions on Telecommunications, vol 19, no. 4, pp 421-442, Jun., 2008.
- J25 Minlan Yu, **Yung Yi**, Jennifer Rexford, and Mung Chiang, “*Rethinking Virtual Network Embedding Substrate Support for Path Splitting and Migration*,” ACM SIGCOMM Computer Communication Review, vol 38, no 2, pp 17-29, Mar., 2008.
- J26 **Yung Yi** and Sanjay Shakkottai, “*FluNet: A Hybrid Internet Simulation/Emulation Environment at a Fast Queue Regime*,” Computer Networks Journal, vol 51, issue 18, pp 4919-4937, Dec., 2007.
- J27 **Yung Yi** and Sanjay Shakkottai, “*Hop-by-hop Congestion Control over a Wireless Multi-hop Network*,” IEEE/ACM Transactions on Networking, vol 15, issue 1, pp 133-144, Feb., 2007.

- J28 **Yung Yi**, Supratim Deb, and Sanjay Shakkottai, “Time-scale Decomposition and Equivalent Rate Based Marking,” *IEEE/ACM Transactions on Networking*, vol 14, issue 5, pp 938-950, Oct., 2006.
- J29 Jungseul Ok, Youngmi Jin, Jinwoo Shin and **Yung Yi** “On Maximizing the Diffusion Speed in Social Networks: Impact of Random Seeding and Clustering,” *ACM Sigmetrics Performance Evaluation Review*, vol. 42, no. 1, pp. 301-313 June 2014
- J30 Jeong-woo Cho, **Yung Yi**, “On the Shapley-like Payoff Mechanisms in Peer-Assisted Services with Multiple Content Providers,” *Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering*, vol. 75, no. 0, pp. 397-412, Mar., 2012.
- J31 Paschalis Tsiafalakis, **Yung Yi**, Mung Chiang, and Marc Moonen, “Fair Greening for DSL Broadband Access,” *ACM Sigmetrics Performance Evaluation Review*, vol 37, no 4, pp 74-78, Jan, 2010.
- J32 Jiaping Liu, Alexandre Proutiere, **Yung Yi**, Mung Chiang, and H. Vincent Poor, “Flow-Level Stability of Data Networks with Non-Convex and Time-Varying Rate Regions,” *ACM Sigmetrics Performance Evaluation Review*, vol. 35, no. 1, pp 239-250, Jun, 2007.

Korean Journals

3 journal papers

3.2.3 Conference Papers: Published/Accepted

- C1 YoungGyoun Moon, Donghwi Kim, Younghwan Go, Yeongjin Kim, **Yung Yi**, Song Chong, KyoungSoo Park “Practicalizing Delay-Tolerant Mobile Apps with Cedros,” to appear at *Proceedings of ACM Mobisys*, May., 2015.
- C2 Jeongseul Ok, Jinwoo Shin, **Yung Yi**, “On the Progressive Spread over Strategic Diffusion: Asymptotic and Computation,” *Proceedings of IEEE Infocom*, Apr., 2015.
- C3 Hojin Lee, Sangwoo Moon, **Yung Yi**, “A-DCF: Design and Implementation of Delay and Queue Length based Wireless MAC,” *Proceedings of IEEE Infocom*, Apr., 2015.
- C4 Jeongseul Ok, Youngmi Jin, Jinwoo Shin, **Yung Yi**, “On Maximizing the Diffusion Speed in Social Networks: Impact of Random Seeding and Clustering,” *Proceedings of ACM Sigmetrics*, Jun., 2014.
- C5 Hyeryung Jang, Se-Young Yun, Jinwoo Shin and **Yung Yi** “Distributed Learning for Utility Maximization over CSMA-based Wireless Multihop Networks,” *Proceedings of IEEE Infocom*, Apr., 2014.
- C6 Dongmyung Lee, Donggyu Yun, Jinwoo Shin, Se-Young Yun and **Yung Yi**, “Provable Per-Link Delay-Optimal CSMA for General Wireless Network Topology,” *Proceedings of IEEE Infocom*, Apr., 2014.
- C7 Richard Combes, Alexandre Proutiere, Donggyu Yun, Jungseul Ok and **Yung Yi**, “Optimal Rate Sampling in 802.11 Systems,” *Proceedings of IEEE Infocom*, Apr., 2014.
- C8 Se-Young Yun, Jinwoo Shin and **Yung Yi**, “CSMA over Time-varying Channels: Optimality, Uniqueness and Limited Backoff Rate,” *Proceedings of ACM Mobihoc*, Jul., 2013. **Best Paper Award**

- C9 Jinsung Lee, Hojin Lee, **Yung Yi**, Song Chong, Bruno Nardelli, Edward W. Knightly, and Mung Chiang, "Making 802.11 DCF Near-Optimal: Design, Implementation, and Evaluation," Proceedings of IEEE SECON, Jun., 2013. **Best Paper Award**
- C10 Youngmi Jin, **Yung Yi**, George Kesidis, Faith Kocak, Jinwoo Shin, "Hybrid Client-Server and Peer-to-Peer Caching Systems with Selfish Peers," Proceedings of IEEE Infocom, Apr., 2013.
- C11 Jaeseong Jeong, **Yung Yi**, Jeong-woo Cho, Do Young Eun, Song Chong, "Wi-Fi Sensing: Should Mobiles Sleep Longer As They Age?," Proceedings of IEEE Infocom, Apr., 2013.
- C12 Muhammad Jamshed, Jihyung Lee, Sangwoo Moon, Insu Yun, Deokjin Kim, Sungryoul Lee, **Yung Yi**, Kyoungsoo Park, "Kargus: a Highly-scalable Software-based Intrusion Detection System," Proceedings of ACM CCS, Oct., 2012.
- C13 Kyunghan Lee, Yoor Kim, Song Chong, Injong Rhee, and **Yung Yi**, "Delay-Capacity Tradeoffs for Mobile Networks with Levy Walks and Levy Flights", Proceedings of IEEE Infocom, Apr., 2011.
- C14 Seyoung Yun, **Yung Yi**, Dongho Cho, and Jeonghoon Mo, "Open or Close: On the Sharing of Femtocells", Proceedings of IEEE Infocom, Apr., 2011
- C15 Bruno Nardelli, Jinsung Lee, Kangwook Lee, **Yung Yi**, Song Chong, Edward W. Knightly, and Mung Chiang, "Experimental Evaluation of Optimal CSMA," Proceedings of IEEE Infocom, Apr., 2011.
- C16 Kyunghan Lee, Injong Rhee, Joohyun Lee, Song Chong, and **Yung Yi**, *Mobile Data Offloading: How Much Can WiFi Deliver?*, Proceedings of ACM CoNext, Nov., 2010.
- C17 Alexandre Proutiere, **Yung Yi**, Tian Lan, and Mung Chiang, "Resource Allocation over Network Dynamics without Timescale Separation," Proceedings of IEEE Infocom, Mar., 2010.
- C18 Kyunghan Lee, **Yung Yi**, Jaesung Jeong, Hyungsuk Won, Injong Rhee, and Song Chong, "Max-Contribution: On Optimal Resource Allocation in Delay Tolerant Networks," Proceedings of IEEE Infocom, Mar., 2010.
- C19 **Yung Yi**, Junshan Zhang, and Mung Chiang, "Delay and Effective Throughput of Wireless Scheduling in Heavy Traffic Regimes: Vacation Model for Complexity," Proceedings of ACM Mobihoc, May., 2009.
- C20 **Yung Yi**, Alexandre Proutiere, and Mung Chiang, "Complexity in Wireless Scheduling: Impact and Tradeoffs," Proceedings of ACM Mobihoc, May, 2008.
- C21 Jiaping Liu, Alexandre Proutiere, **Yung Yi**, Mung Chiang, and Vincent Poor, "Flow-Level Stability of Data Networks with Non-Convex and Time-Varying Rate Regions," Proceedings of ACM Sigmetrics, Jun, 2007.
- C22 **Yung Yi**, Gustavo de Veciana, and Sanjay Shakkottai, "On Optimal MAC Scheduling with Physical Interference," Proceedings of IEEE Infocom, Anchorage, May., 2007.
- C23 **Yung Yi** and Sanjay Shakkottai, "Hop-by-hop Congestion Control over a Wireless Multi-hop Network," Proceedings of IEEE Infocom, Mar., 2004.
- C24 Jungseul Ok, Jaeyoung Choi, Youngmi Jin, Jinwoo Shin, and **Yung Yi**, "Influence Maximization over Strategic Diffusion in Social Networks," Proceedings of IEEE CISS, 2014.
- C25 Hanjin Park, Youngmi Jin, Jooho Yoon and **Yung Yi**, "On the Economic Effects of User-oriented

- Delayed Wi-Fi Offloading,” Proceedings of WiOpt, 2014.
- C26 Hyojung Lee, Dongmyung Lee and **Yung Yi**, “*On the Economic Impact of Telco CDNs and their Alliance on the CDN Market*,” to appear at Proceedings of IEEE ICC, Jun., 2014.
- C27 Hanjin Park, Youngmi Jin, Jooho Yun, **Yung Yi**, “*On the Economic Effects of User-oriented Delayed Wi-Fi Offloading*,” to appear at Proceedings of WiOpt, May., 2014.
- C28 Se-Young Yun, Jinwoo Shin and **Yung Yi**, “*CSMA using the Bethe Approximation for Utility Maximization*,” Proceedings of IEEE ISIT, Jul., 2013.
- C29 Sangwoo Moon, **Yung Yi** and Hongseok Kim, “*Energy-efficient User Association in Cellular Networks: A Population Game Approach*,” Proceedings of WiOpt, May, 2013.
- C30 Youngmi Jin, Jungseul Ok, **Yung Yi** and Jinwoo Shin, “*On the Impact of Global Information on Diffusion of Innovations over Social Networks*,” Proceedings of IEEE Infocom Network Science Workshop, Apr., 2013.
- C31 Joohyun Lee, **Yung Yi**, Song Chong, and Youngmi Jin, “*Economics of Wifi Offloading: Trading Delay for Cellular Capacity*,” Proceedings of IEEE Infocom Smart Data Pricing Workshop, Apr., 2013.
- C32 Hyojung Lee, Hyeryung Jang, **Yung Yi**, and Jeong-woo Cho, “*On the Interaction between Content-Oriented Traffic Scheduling and Revenue Sharing among Providers*,” Proceedings of IEEE Infocom Smart Data Pricing Workshop, Apr., 2013.
- C33 Jaehoon Jeong, Hyeryung Jang, Yujin Kim, **Yung Yi**, Jeonghoon Mo, “*Network Traffic Reduction Through Smart Network*,” Proceedings of IEEE ICOIN, Jan., 2013.
- C34 Se-Young Yun, **Yung Yi**, Jinwoo Shin, Do Young Eun , “*Optimal CSMA: A Survey*,” Proceedings of IEEE ICCS, Jun., 2012.
- C35 Chul-Ho Lee, Do Young Eun, Se-Young Yun, and **Yung Yi**, “*From Glauber Dynamics To Metropolis Algorithm: Smaller Delay in Optimal CSMA*,” IEEE ISIT, Jul., 2012.
- C36 Jeongho Kwak, Kyuho Son, **Yung Yi**, and Song Chong “*Impact of Spatio-Temporal Power Sharing Policies on Cellular Network Greening* ,” Proceedings of WiOpt, May., 2011.
- C37 Donggyu Yun, **Yung Yi**, “*Virtual Network Embedding in Wireless Multihop Networks*,” Proceedings of CFI, Jun., 2011.
- C38 Jeong-woo Cho and **Yung Yi**, “*On the Payoff Mechanism in Peer-assisted Services with Multiple Providers*,” Proceedings of GameNets, Apr., 2011.
- C39 Changhyun Lee, DK Lee, **Yung Yi**, and Sue Moon, “*Operating a Network link at 100%*”, Proceedings of PAM (Passive Active Measurement) conference, Mar., 2011.
- C40 Kyunghan Lee, Joohyun Lee, **Yung Yi**, Song Chong and Injong Rhee, *Mobile Data Offloading: How Much Can WiFi Deliver?*, ACM SIGCOMM poster session, Aug., 2010.
- C41 Jaeseong Jeong, Kyunghan Lee, **Yung Yi**, Injong Rhee, Song Chong, *Opportunistic Shortest Path Forwarding in Delay Tolerant Networks*, Proceedings of CFI, Jun., 2010.
- C42 Seyoung Yun, **Yung Yi**, Dongho Cho, Jeonghoon Mo, “*On the Pricing of Femtocell Service*,” Proceedings of CFI, Jun., 2010.
- C43 Hyeryung Jang, Hyojung Lee and **Yung Yi**, “*On the Interaction between ISP Revenue Sharing*

- and Network Neutrality*,” Proceedings of ACM CoNEXT Student Workshop, Nov., 2010.
- C44 Kyuho Son, Soohwan Lee, **Yung Yi**, and Song Chong, “*Practical Dynamic Interference Management in Multi-carrier Multi-cell Wireless Networks: A Reference User Based Approach*,” Proceedings of WiOpt, May, 2010.
- C45 Jiaping Liu, **Yung Yi**, Alexandre Proutiere, Mung Chiang, and Vincent H. Poor, “*Convergence and Tradeoff of Utility-Optimal CSMA*,” Proceedings of Broadnets, Sep., 2009.
- C46 **Yung Yi**, Jinsung Lee, Song Chong, Mung Chiang and Alexandre Proutiere, “*Towards Optimal MAC without Message Passing in Wireless Networks*,” Proceedings of CFI, Jun., 2009.
- C47 Paschalis Tsiiaflakis, **Yung Yi**, Mung Chiang, and Marc Moonen, “*Fair Greening for DSL Broadband Access*,” Proceedings of ACM GreenMetrics, Jun., 2009.
- C48 Kyuho Son, **Yung Yi**, Song Chong, “*Adaptive Multi-pattern Reuse in Multi-cell Networks*,” Proceedings of WiOpt, Jun., 2009.
- C49 Paschalis Tsiiaflakis, **Yung Yi**, Mung Chiang, and Marc Moonen, “*Green DSL: Energy-Efficient DSM*,” Proceedings of IEEE ICC, Jun., 2009.
- C50 Paschalis Tsiiaflakis, **Yung Yi**, Mung Chiang, and Marc Moonen “*Throughput and Delay of DSL Dynamic Spectrum Management with Dynamic Arrivals*,” Proceedings of IEEE Globecom, Nov., 2008.
- C51 Paschalis Tsiiaflakis, Chee Wei Tan, **Yung Yi**, Mung Chiang, and Marc Moonen “*Optimality Certificate of Dynamic Spectrum Management in Multi-carrier Interference Channels*,” Proceedings of IEEE ISIT, Jul., 2008.
- C52 **Yung Yi**, and Mung Chiang, “*Wireless Scheduling Algorithms with $O(1)$ Overhead for M -hop Interference Model*,” Proceedings of IEEE ICC, Beijing, May, 2008.
- C53 **Yung Yi**, Gustavo de Veciana, and Sanjay Shakkottai, “*Learning Contention Patterns and Adapting to Load/Topology Changes in a MAC Scheduling Algorithm*,” Proceedings of IEEE Workshop on Wireless Mesh Networks (WiMesh), Sep., 2006.
- C54 **Yung Yi** and Sanjay Shakkottai, “*FluNet: A Hybrid Internet Simulation/Emulation Environment at a Fast Queue Regime*,” Proceedings of ITC (International Teletraffic Congress) 19, Aug., 2005.
- C55 **Yung Yi** and Sanjay Shakkottai, “*On the Elasticity of Marking Functions: Scheduling, Stability, and Quality-of-Service in the Internet*,” Proceedings of the 39th Conference on Information Sciences and Systems, Mar., 2005.
- C56 **Yung Yi**, Supratim Deb, and Sanjay Shakkottai, “*Short Queue Behavior and Rate Based Marking*,” Proceedings of The 38th Conference on Information Sciences and Systems, Mar., 2004.
- C57 **Yung Yi**, Yongho Seok, Taekyoung Kwon, Yanghee Choi, and Junseok Park, “ *W^2F^2Q : Packet Fair Queuing in Wireless Packet Networks*,” Proceedings of Third ACM International Workshop on Wireless Mobile Multimedia (WoWMoM), Aug., 2000.
- C58 Youngseok Lee, **Yung Yi**, Youjae Won, and Yanghee Choi, “*GRCA: Gateway-based Rate Control Algorithm for the CBR Traffic over the Wireless Link*,” Proceedings of The 14th International Conference on Information Networking, Jan., 2000.
- C59 **Yung Yi**, Youngseok Lee, Yongjun Im, and Yanghee Choi, “*Distributed Delay-Constrained Multicast Routing Considering Identical Multiple Sources*,” Proceedings of The 13th International

Conference on Information Networking, Cheju, Jan, 1998.

- C60 Yongjun Im, **Yung Yi**, Youngseok Lee, and Yanghee Choi, "A Distributed Delay-Constrained Multicast Routing Algorithm Considering Identical Multiple Sources," Proceedings of The IASTED International Conference on Parallel and Distributed Computing and Networks, Dec., 1998.
- C61 Seungtaek Oh, **Yung Yi**, Seunghoon Jeong, Younghwa Ko, and Yanghee Choi, "Experiments with MHEG Player/Studio: An Interactive Hypermedia Visualization and Authoring System," Proceedings of Euromicro Conference on Multimedia and Telecommunications, Aug., 1998.
- C62 Hyojung Lee, Hyeryung Jang, Jeong-woo Cho, and **Yung Yi**, "On the stability of ISPs' Coalition Structure: Shapley Value based Revenue Sharing," Proceedings of CISS, Mar., 2012.
- C63 Jinsung Lee, Junhee Lee, **Yung Yi**, Chong Song, Alexandre Proutiere, and Mung Chiang, "Implementing Utility-Optimal CSMA," Proceedings of Allerton, Sep., 2009.
- C64 **Yung Yi**, Alexandre Proutiere, and Mung Chiang "Scheduling without Passing Any Message," Proceedings of IEEE Workshop on the Theory of Ad-Hoc and Sensor Networks (ThASN '08), Mar., 2008.
- C65 **Yung Yi**, Alexandre Proutiere, and Mung Chiang, "Scheduling in Wireless Networks: Complexity, Tradeoffs, and Impacts," INFORMS Optimization Society Conference, Mar., 2008.
- C66 Alexandre Proutiere, **Yung Yi**, and Mung Chiang, "Throughput of Random Access Without Message Passing," Proceedings of the 42nd Conference on Information Sciences and Systems, Princeton University, NJ, Mar., 2008.
- C67 Mung Chiang, Jianwei Huang, Dahai Xu, **Yung Yi**, Chee Wei Tan, Raphael Cendrillon, "Fast Copper For Broadband Access," Proceedings of IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Honolulu, Hawaii, USA, May, 2007.
- C68 Mung Chiang, Jianwei Huang, Dahai Xu, **Yung Yi**, Chee Wei Tan, Raphael Cendrillon, "Fast Copper For Broadband Access," Proceedings of the 44th Allerton Conference, September, Sep., 2006.
- C69 **Yung Yi**, Supratim Deb, and Sanjay Shakkottai, "Time-scale Decomposition and Equivalent Rate Based Marking," Institute for Mathematics and its Applications (IMA) Workshop: Measurement, Modeling and Analysis of the Internet, University of Minnesota, MN, Jan., 2004.
- C70 Injong Rhee, Volkan Ozdemir, and **Yung Yi**, "TEAR: TCP Emulation At Receivers: flow control for multimedia streaming," Technical Report, Department of Computer Science, North Carolina State University, Mar., 2000 (261 citations at Google Scholar as of Apr., 2012).

Korean Conference Papers

22 papers

3.2.4 Journal/Conference Papers: Submitted or Currently Revised

- S1 Jinsung Lee, Hojin Lee, **Yung Yi**, Song Chong, Bruno Nardelli, Edward W. Knightly, and Mung Chiang, "Making 802.11 DCF Near-Optimal: Design, Implementation, and Evaluation," IEEE/ACM Transactions on Networking (in revision), 2015.
- S2 Se-Young Yun, Jinwoo Shin, **Yung Yi** "CSMA using the Bethe Approximation: Scheduling and Utility Maximization," IEEE Transactions on Information Theory (in revision), 2015.

- S3 Jaeseong Jeong, **Yung Yi**, Jeong-woo Cho, Do Young Eun, Song Chong “*Wi-Fi Sensing: Should Mobiles Sleep Longer As They Age?*,” IEEE/ACM Transactions on Networking (in revision), 2015.
- S4 Sangwoo Moon, **Yung Yi** and Hongseok Kim, “*Energy-efficient User Association in Cellular Networks: A Population Game Approach*,” IEEE Transactions on Wireless Communications (in revision), 2015.
- S5 Se-Young Yun, Jinwoo Shin, and **Yung Yi**, “*Distributed Medium Access over Time-varying Channels*,” IEEE/ACM Transactions on Networking (in revision), 2015.
- S6 Hanjin Park, Youngmi Jin, Jooho Yoon and **Yung Yi**, “On the Economic Effects of User-oriented Delayed Wi-Fi Offloading,” IEEE Transactions on Wireless Communications, 2015.
- S7 Hyeryung Jang, Se-Young Yun, Jinwoo Shin and **Yung Yi** “*Distributed Learning for Utility Maximization over CSMA-based Wireless Multihop Networks*,” IEEE Transactions on Automatic Control, 2015.
- S8 Dongmyung Lee, Donggyu Yun, Jinwoo Shin, Se-Young Yun and **Yung Yi**, “*Provable Per-Link Delay-Optimal CSMA for General Wireless Network Topology*,” IEEE/ACM Transactions on Networking, 2015.
- S9 Richard Combes, Alexandre Proutiere, Donggyu Yun, Jungseul Ok and **Yung Yi**, “*Optimal Rate Sampling in 802.11 Systems*,” IEEE/ACM Transactions on Networking, 2015.
- S10 Jeongseul Ok, Donghoon Lee, Jinwoo Shin, **Yung Yi**, “*Advertising through Mass and Social Media: Which is better When?*,” ACM Conference on Electric Commerce, 2015.
- S11 Jihyung Lee, Sungryoul Lee, Junghee Lee, **Yung Yi**, KyoungSoo Park, “*FloSIS: A Highly Scalable Network Flow Capture System for Fast Retrieval and Storage Efficiency*,” USENIX ATC (Annual Technical Conference), 2015.

3.2.5 Korean Conferences and Journals

3.3 Patents: Awarded

- P1 System for Determining MIMO/DSM Operating Mode Based on Network Backhaul Link Environment and Cooperation Level Between Base Stations, US Patent (Awarded but its number is not available)
- P2 10-1362270-0000, Methods for Managing Power of Base Station in Cellular Networks, Korea Patent, 2014.02.06
- P3 10-1355998-0000, Probability Distribution Based Method and Apparatus for Searching Wireless Network, Korea Patent, 2014.01.21
- P4 10-1335977-0000, Method and Apparatus for Embedding Resource for Request for Virtual Network in Mobile Environment Having Node Mobility, Korea Patent, 2013.11.27
- P5 10-1287569-0000, System and Method for Transmitting and Receiving Data, Korea Patent, 2013.07.12
- P6 10-1287916-0000, Apparatus for Transmitting Data, Korea Patent, 2013.07.12
- P7 10-1272287-0000, Method for Transmitting Data, Korea Patent, 2013.05.31

- P8 10-1272292-0000, Method for Monitoring Collision of Packet, Korea Patent, 2013.05.31
- P9 10-1272280-0000, System for Monitoring Collision of Packet, Korea Patent, 2013.05.31
- P10 10-1250891-0000, Hand-over Control Apparatus of Using Virtual Scheduling and Driving Method Thereof, Terminal and Driving Method Thereof, Korea Patent, 2013.03.29
- P11 10-1172766-0000, Method and Apparatus for Embedding Resource for Request for Virtual Network in Mobile Environment, Korea Patent, 2012.08.03
- P12 10-1102780-0000, Method and Module for Controlling Pattern-Based Interference Management in Network Apparatus, Korea Patent, 2011.12.29
- P13 10-1085535-0000, Method and System for Embedding Resource for Request for Virtual Network in Mobile Environment, Korea Patent, 2011.11.15

3.4 Software and Systems

1. **Kargus**: Kargus is a highly-scalable software-based IDS that runs on commodity PCs and its performance is comparable to hardware-based IDSes. It effectively exploits the potentials of modern hardware innovations such as multicore CPUs, heterogeneous GPUs and multi-queue interface of NICs that drives its monitoring rate by up to 33 Gbps in real time.
<http://shader.kaist.edu/kargus/>
2. **BRUTE**: BRUTE is an energy-efficient user association mechanism in cellular networks, motivated by the population game theory.
<http://lanada.kaist.ac.kr/cellular/>
3. **ORS**: ORS is a ath9k kernel driver module for a new rate adaptation mechanism in WiFi-based networks, developed based on the theory of bandit optimization.
<http://lanada.kaist.ac.kr/ors.html>
4. **oCSMA**: Optimal CSMA is a new theory to achieve optimal performance in wireless multi-hop MAC. oCSMA is a package of ns-3 simulation codes and ath9k driver modifications to implement optimal CSMA algorithms.
<http://lanada.kaist.ac.kr/ocsma/>
5. **LTE-W ns3 simulator**: LTE-W is a technology developed with Samsung that enables the simultaneous access to both LTE and Wi-Fi radio interfaces. We have developed a vast ns-3 module of LTE-W which implements a full layered stack of necessary components. Opening its source code in public is still pending due to the intellectual right issues with Samsung.
6. **FloSiS**: FloSiS is a highly scalable, software-based flow storing and indexing system with the features of (i) exercising full parallelism in multiple CPU cores and disks at all stages of packet processing, (ii) constructing two-stage flow-level indexes to minimize expensive disk access for user queries and storing the packets in the same flow at a contiguous disk location to maximize disk throughput when reading relevant flows to an attack, and (iii) performing flow-level content deduplication at real time. Opening the source code is pending since it is submitted for publication.
7. **Cedos**: Cedos is a practical delay-tolerant mobile network access architecture in which one can easily build a mobile app with the following features of (i) providing a familiar socket API whose

semantics conforms to TCP while the underlying protocol, D2TP, transparently handles network disruptions and delays in mobility, (ii) allowing the developers to explicitly exploit delays in mobile apps, and (iii) providing D2Prox, a protocol translation Web proxy. The source code will be open after the paper presentation in Mobisys 2015.

3.5 Research Recognition

3.5.1 Honors and Awards

01/2015	Bronze prize, Samsung Humantech Paper Contest (Adviser)
01/2015	Encouragement prize, Samsung Humantech Paper Contest (Adviser)
12/2014	Distinguished Member of the 2015 IEEE INFOCOM Technical Program Committee, IEEE INFOCOM
09/2014	ACM Mobicom Service Award, ACM
01/2014	Gold prize (1st in communication and networking area), Samsung Humantech Paper Contest (Adviser)
12/2013	Technology Innovation Award, KAIST
07/2013	Best Paper Award, IEEE SECON
04/2013	Best Paper Award, ACM MOBIHOC
02/2013	Excellent Award of the Undergraduate Research Participation (URP) (Adviser), KAIST
01/2013	Best 10 Achievement Award of 2012 Research, KAIST
09/2012	Best Teaching Award, KAIST EE
02/2012	Grand Prix Award of the Undergraduate Research Participation (URP) (Adviser), KAIST
01/2012	Gold prize (1st in communication and networking area), Samsung Humantech Paper Contest (Adviser)
05/2011	Broadcasting and Communication Best R&D Award in the mobile service area, KCC (Korea Communications Commission).
01/2011	Silver prize, Samsung Human Tech Paper Contest (Adviser)
01/2010	Silver prize, Samsung Human Tech Paper Contest (Adviser)
09/2002 - 05/2006	Information and Telecommunication National Overseas Fellowship, Ministry of Information and Communication, South Korea
03/1999 - 03/2001	The Korea Industry-Academy Foundation Fellowship
02/1999	Highest score at the Ph.D. entrance exam, School of Computer Science and Engineering, Seoul National University.
12/1998	Best M.S. thesis award, School of Computer Science and Engineering, Seoul National University

09/1996 - 06/1997 Merit-based scholarship, Seoul National University

09/1993 - 06/1996 The Rotary Club Fellowship, South Korea

3.5.2 Media Coverage

04/2011 Newswire and about 15 other mass media. An article about "GreenTouch Consortium Meeting in Korea". In this article, my name was mentioned as an invited speaker who gives a talk on greening technology in wireless networks.

07/2011 Chosun Ilbo and about 20 other mass media. An article about "Dr. Jeong-woo Choo was hired as an assistant professor in KTH, who got the Ph.D. degree in KAIST". In this article, his collaboration research with me on network economics and peer-to-peer networking was mentioned.

09/2012 Etnews and about 20 other mass media. An article about "Kargus: Software-based network intrusion detectoin," with Prof. KyoungSoo Park. This technology was awarded as one of 10 best research results of KAIST in 2012.

3.6 Invited Talks and Tutorials (only International)

T1. *Modeling ICN Performance for Feasibility and Engineering Insight*, Korea-EU Future Internet Joint Workshop, Sep., 2013

T2. *Optimal CSMA: A Survey*, A3 Foresight Program Mini-Workshop on Next Generation Networks and Network Security, Feb., 2013

T3. *Optimal CSMA: A Survey*, IEEE ICCS (International Conference on Communication Systems, Nov., 2012

T4. *Greening of Wireless Cellular Networks*, ASPIRE Forum, Jul., 2012

T5. *WiFi Offloading to Cope with Mobile Data Explosion: Theory, Experiment, and Economics*, WOCC (Annual Wireless and Optical Communications Conference, Apr., 2012

T6. *On the Stability of ISPs' Coalition Structure: Shapley Value based Revenue Sharing*, CISS (Annual Conference on Information Sciences and Systems), Mar., 2012

T7. *From Glauber Dynamics to Metropolis: Smaller Delay in Optimal CSMA*, Mobihoc TPC Meeting Workshop, Feb., 2012

T8. *Cellular Greening via Efficient BS Control: Topology, On-Off, and Transmission Power*, Green-Touch Consortium Open Forum, April, 2011

T9. *Delay Tolerant Network: Back to Post Service*, ICC International Workshop on IT Convergence Technology, March, 2011

T10. *Delay Tolerant Network: Back to Post Service*, The first International Workshop on Future Internet Modeling, Jan, 2011

T11. *Utility Optimal CSMA: Towards Practical Cross-layer Design*, KTH, Sweden, 2010

T12. *Utility Optimal CSMA: Towards Practical Cross-layer Design*, NTNU, Norway, 2010

- T13. *Towards Optimal MAC without Message Passing*, Joint KAIST-CUHK Communication and Networking Workshop, July, 2009
- T14. *MAC Scheduling with Performance Guarantee: From Max-Weight to Random Access*, ICOIN Tutorial, Jan, 2009
- T15. *Complexity, Tradeoffs, and Impacts in Wireless Scheduling: From Max-Weight to Random Access*, North Carolina State University, Sep, 2008
- T16. *Maximizing Utility via Random Access without Message Passing*, IEEE MASS Workshop, Sep, 2008
- T17. *Wireless Scheduling with Performance-Guarantee: Complexity, Tradeoffs, and Impact*, Chinese University of Hong Kong, May, 2008
- T18. *Stochastic Optimization in Wireless Networks*, McGill University, May, 2008
- T19. *Stochastic Optimization in Wireless Networks*, Polytechnic University, April, 2008
- T20. *Throughput of Random Access without Message Passing*, WINLAB, Rutgers University, April, 2008
- T21. *Towards Simple and Practical Scheduling in Wireless Networks: Complexity, Tradeoffs, and Impacts*, Alcatel-Bell Labs, March, 2008
- T22. *Scheduling in Wireless Networks and Stochastic Network Optimization*, Guest Lecture, Princeton University, March, 2008
- T23. *Scheduling in Wireless Networks: Complexity and Impacts*, INFORMS Optimization Society Meeting, Atlanta, GA, February, 2008
- T24. *Simplicity in Complex Networks*, The Air Force Office of Scientific Research, Program Review, Arlington, VA, February, 2008
- T25. *On Optimal Scheduling Under Physical Interference Models*, Arizona State University, September, 2007
- T26. *Research on Wireless Networking at Princeton University*, NSF Wireless Program Review, Chicago, May, 2007
- T27. *Survey on Scheduling in Wireless Networks*, Guest Lecture, Princeton University, March, 2007
- T28. *Scheduling in Wireless Networks: Recent Trends and Next Steps*, Qualcomm-Flarion, March, 2007
- T29. *Fluid Modeling of Internet and Its Application to Large-Scale Simulation*, University of Texas at Austin, October, 2006

3.7 Research Grants

Total: About 2,600,000K

Approved and Funded

- 12/2014-11/2015 Research on Horizontal/Vertical Decoupling in Big Wireless Network, KRF, 98,000K.
- 09/2014-08/2015 Communication, Sensing and Application Platform Research for Smart Sensors,

KRF Global Frontier, 100,000K.

12/2013-11/2014 Research on Horizontal/Vertical Decoupling in Big Wireless Network, KRF, 98,000K.

12/2013-11/2014 Research on Carrier Aggregation of LTE Small Cell and Wireless LAN, Samsung Electronics, 78,000K.

01/2014-12/2014 Research on New Security Technology, National Security Research Institute, 50,000K.

09/2012-08/2014 Communication, Sensing and Application Platform Research for Smart Sensors, KRF Global Frontier, 216,000K.

12/2013-06/2014 Next-generation Small Troop Device Development and M&S, Peopleworks, 50,000K.

02/2013-12/2013 Rate Adaptation Algorithms Considering Channel Conditions over Ad-hoc Networks, LIGNex1, 50,000K.

10/2012-06/2013 Secure CCN Protocol, Samsung Electronics, 87,000K.

03/2013-12/2013 Research on New Security Technology, National Security Research Institute, 50,000K.

11/2010-11/2011 GPU based IDS Research, National Security Research Institute, 60,000K.

04/2012-11/2012 Research on Analysis of Malicious Attack Similarity in High Speed Packet Network, National Security Research Institute, 40,000K.

03/2012-02/2014 CDN Inter-connection, KCA, 190,000K.

09/2009-08/2011 Korea-Sweden Research Collaboration Project, KRF, 30,000K.

08/2008-04/2010 New Faculty Industry-Academia Collaboration, LG Electronics, 19,000K.

08/2009-07/2010 5G Wireless Technology Search, SK Telecom, 50,000K.

09/2008-07/2011 Beyond 4G Wireless Technology based on Cognitive, Autonomous, Samsung Electronics, 50,000K.

09/2010-08/2012 Ad-hoc Network Algorithm Design, LIG Nex1, 200,000K.

06/2011-10/2011 Smart Network based B2B2C Service Model and Economic Analysis, KT, 39,996K.

03/2011-02/2014 Delay Tolerant Network Technology for Wireless Cellular and Sensor Networks, KCA, 325,000K.

05/2011-04/2012 Greening in Wireless Cellular Networks, KRF, 149,586K.

01/2010-12/2011 Future Internet Modeling, Seoul National University, 60,000K.

05/2009-01/2010 On Femtocell based distributed algorithm research for efficient handover, ETRI, 30,000K.

03/2009-02/2011 Ultra small cell based autonomous wireless network, Ministry of Knowledge Economy, 241,461K.

Pending

01/2015-06/2015 Video Transmission over Vehicular Networks, Bosch, 100,000K

- 03/2015-03/2018 IoT/Cloud Performance Enhancement Research, Ministry of Science, ICT, and Future Planning, 250,000K
- 05/2015-12/2016 Modeling of Multi-hop Wireless Networks for Military Applications, ADD, 150,000K

4 Service

4.1 Professional Activities

Society Memberships and Activities

- Member Institute of Electrical and Electronics Engineers (IEEE), Communications Society
- co-chairing green multimedia communication interest group of IEEE Multimedia communication technical committee (MMTC) (2010 - 2012)
- Member Association for Computing Machinery (ACM)
- Member The Korean Institute of Information Scientists and Engineers
- Information Science and Communication Society
- Member The Korean Institute of Communications and Information Sciences
- Big data Interest Group
- Communication Networks Interest Group
- Mobile Communications Interest Group

Editorial Board

- 01/2013 - present Elsevier Computer Communications Journal
- 03/2014 - present IEEE/ACM Transactions on Networking
- one of the most prestigious journals in the area of computer networking
- 01/2011 - present Journal of Communications and Networks
- 2011 a guest editor of special issue on energy efficient communication at IEEE Surveys and Tutorials
- 01/2009 - 12/2014 KIISE journal in the area of information and communication

Conference Chairing

- WiOpt 2009 local arrangement chair
- CFI 2010 local arrangement chair
- TENCON 2010 area track chair
- Infocom 2010 session chair
- WiOpt 2011 session chair
- CFI 2011-2012 publication chair
- ICNC 2012 Green Networking, Communication, and Computing Symposium TPC co-chair

Mobicom 2015 publicity chair

International Conference Technical Program Committee

2008 ICST WiCon
2009 ICST WiCon, ACM MOBIHOC, WiOpt
2010 WiOpt, IEEE INFOCOM, IEEE ICC, IEEE GLOBECOM
2011 WiOpt, IEEE INFOCOM, ITC, WASA, IEEE GLOBECOM
2012 ACM MOBIHOC, WiOpt, IEEE INFOCOM, ITC, WASA, SDP, IEEE GLOBE-
COM
2013 ACM MOBIHOC, WiOpt, IEEE INFOCOM, ITC, WASA, SDP
2014 ACM MOBIHOC, WiOpt, IEEE INFOCOM, ITC
2015 IEEE INFOCOM, IEEE SECON, ACM MOBIHOC, WiOpt

Reviewer IEEE Transactions on Vehicular Technology, IEEE Real-Time Systems Symposi-
um, IEEE Infocom, IEEE Transactions on Wireless Communications, IEEE
Globecom, ACM SIGMETRICS, ACM MOBIHOC, IEEE/ACM Transactions on
Networking, IEEE Communications Letters, IEEE SECON, Computer Networks,
IEEE Globecom, IEEE ICC, IEEE Transactions on Mobile Computing, IEEE
Transactions on Information Theory, and many other conferences and journals

4.2 KAIST Activities

Electrical Engineering Committees

03/2015 - Present Chair, Homepage Committee
03/2015 - Present Long-term Vision Committee
01/2010 - Present Advisor of EE Band
11/2013 - 02/2014 BK Plus New Human Resource Committee, Chair
06/2013 - 12/2013 EE Future Vision Committee
05/2013 - 10/2013 BK Plus Proposal Committee
01/2012 - 12/2012 Education Committee
01/2012 - 12/2012 English Lecture Enhancement Committee
01/2009 - Present Undergraduate Student Committee

KAIST Committees

10/2008 - 06/2009 MSR-KAIST Research Collaboration Committee
10/2013 - 02/2014 Happy-KAIST Committee

2013

Department Head Search Committee, Graduate School of Information Security