

Taekyung Kim

• Email: tkkim92@korea.ac.kr • Web: <https://tkkim92.github.io/>

EDUCATION

Korea University

Ph.D. Student in Computer Science and Engineering

Advisor: Prof. Wonjun Lee

Seoul, Republic of Korea

Mar 2014 - Present

Korea University

B.S. in Computer and Communication Engineering

Seoul, Republic of Korea

Mar 2010 - Feb 2014

Daejeon Science Sigh School

Early Graduation

Daejeon, Republic of Korea

Mar 2008 - Feb 2010

PUBLICATIONS

- Taekyung Kim and Wonjun Lee. **AnyScatter: Eliminating Technology Dependency in Ambient Backscatter Systems**. In Proceedings of the 39th IEEE Conference on Computer Communications (IEEE INFOCOM), Toronto, Canada, July 2020. (top-tier, acceptance ratio: $268/1354=19.8\%$) [Paper] [Code]
- Taekyung Kim and Wonjun Lee. **Channel Independent Wi-Fi Backscatter Networks**. In Proceedings of the 38th IEEE Conference on Computer Communications (IEEE INFOCOM), Paris, France, April 2019. (top-tier, acceptance ratio: $288/1464=19.7\%$) [Paper]
- Taekyung Kim and Wonjun Lee. **Exploiting Residual Channel for Implicit Wi-Fi Backscatter Networks**. In Proceedings of the 37th IEEE Conference on Computer Communications (IEEE INFOCOM), Hawaii, USA, April 2018. (top-tier, acceptance ratio: $309/1606=19.2\%$) [Paper] [Code]
- Chenglong Shao, Heejun Roh, Taekyung Kim and Wonjun Lee. **Multisource Wireless Energy Harvesting-based Medium Access Control for Rechargeable Sensors**. IEEE Transactions on Consumer Electronics, vol. 62, no. 1, pp. 119-127, May 2016. [Paper]
- Chenglong Shao, Taekyung Kim, Jieun Yu, Jihoon Choi and Wonjun Lee. **ProTaR: Probabilistic Tag Retardation for Missing Tag Identification in Large-Scale RFID Systems**. IEEE Transactions on Industrial Informatics, vol.11, no. 2, pp. 513-522, April 2015. (JCR 2019 I/F Top 3.7%) [Paper]
- Taekyung Kim, Chenglong Shao and Wonjun Lee. **Promptly Pinpointing Mobile RFID Tags for Large-Scale Internet-of-Things**. In Proceedings of the 2nd IEEE International Conference on Big Data and Smart Computing, Jeju, Korea, Feb. 2015. [Paper]

* Top-tier conferences are selected by [KIISE](#) and [BK21+](#)

AWARDS AND HONORS

- **Silver Prize Award**, The 24th Samsung Humantech Paper Award Feb 2018
- **The 1st Place Transactions Award**, IEEE Consumer Electronics Society Chester W. Sall Memorial Awards Jan 2018
- **Global Ph.D. Fellowship (GPF)**, Ministry of Education of Korea Mar 2015 - Feb 2020
- **Best Runner-up Paper Award**, IEEE BigComp 2015 Feb 2015
- **Domestic B.A. Scholarship**, ILJU Academy and Culture Foundation Mar 2011 - Feb 2014
- **Science & Technology Scholarship**, Korea University Mar 2010 - Feb 2011
- **Honorable Mention Award**, The 26th Korea Olympiad in Informatics (KOI) June 2009
- **Silver Prize Award**, The 24th Korea Olympiad in Informatics (KOI) June 2007

RESEARCH EXPERIENCE

- **Ambient Wi-Fi Backscatter Networking**, Mar 2020 - Present
Funded by *National Research Foundation of Korea*
- **BackPlugged: Wearable-optimized Ultra Low-Power Wi-Fi Networking with Plugged-in Backscatter Radios**, Mar 2017 - Feb 2020
Funded by *National Research Foundation of Korea*
Team Leader, Selected as one of [Top 100 National R&D Achievements](#)
- **Development of 5G Network Core Technologies**, Aug 2016 - Aug 2017
Funded by *Samsung Electronics*
- **Backscatter-networked Wireless Power Transfer System**, June 2014 - May 2016
Funded by *Samsung Research Funding & Incubation Center for Future Technology*
Assistant Team Leader

PATENTS

- Youngkyo Baek, Jungje Son, Sunghoon Kim, Sangheon Pack, Hoyeon Lee, Haneul Ko, Chenglong Shao, Jaewook Lee, Heejun Roh, **Taekyung Kim**, and Sunjae Kim. **Method for Establishing Protocol Data Unit in Communication System**. U.S. Patent, Patent Number: 10798761 B2, October 6, 2020.

TECHNICAL SKILLS

- **Programming Languages:** C/C++, Python, MATLAB, JavaScript, GoLang, Verilog
- **Software-defined Radio Prototyping:** GNU Radio, USRP UHD, MATLAB WLAN Toolbox, MATLAB Coder
- **Hardware Prototyping:** Altium Designer, Libero SoC, Vivado HLS, PYNQ, Code Composer Studio
- **Test and Measurement:** ZeroMQ, OpenWrt, iperf, Vector Network Analyzer, Oscilloscope

TEACHING ASSISTANT EXPERIENCE

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|---|-------------|
| • Wireless Mobile Communications Networks (CYDF326) | 2018 Fall |
| • Object-Oriented Programming (CYDF207) | 2017 Fall |
| • Wireless Mobile Communications (CYDF316) | 2016 Fall |
| • Wireless Mobile Communications (CYDF316) | 2015 Fall |
| • Communication Networks (CNCE461) | 2015 Spring |
| • Computer Networks (CYDF321) | 2015 Spring |
| • Computer Networks (COSE342) | 2014 Fall |
| • Communication Networks (CYDF305) | 2014 Spring |

WORK EXPERIENCE

BEFLOAT

Web Developer

April 2012 - Dec 2012

- Developed a social networking service and a recommendation system in Node.js

SOFTWARE MAESTRO

Mentee

June 2011 - Nov 2011

- Funded by *Ministry of Knowledge Economy of Korea*
- Selected as one of 100 Mentees in the 2nd Software Maestro Program
- Developed a firewall agent and a traffic classifier based on logistic regression against DDoS attack