

CURRICULUM VITAE

OBJECTIVE

Ph. D. candidate in Electrical & Computer Engineering at North Carolina State University specializing in UAV networks, ray tracing & link simulations, and machine learning-driven wireless systems. **Expected to graduate in May 2026. Seeking a research internship/Co-op position** in next-generation wireless and UAV communication systems.

INFORMATION

Donggu Lee

Dept. of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA.

E-mail: dlee42@ncsu.edu

Google Scholar Profile: <https://scholar.google.com/citations?user=nBGrpW8AAAAJ&hl=en>

Linkedin Profile: <https://www.linkedin.com/in/donggu-lee-dl/>

EDUCATION

Ph.D., Electrical and Computer Engineering

North Carolina State University, Raleigh, NC, USA

August 2022 - Present

Advisor: Prof. Ismail Guvenc

Master of Science, Electronic Convergence Engineering

Kwangwoon University, Seoul, South Korea

March 2019 - February 2021

Dissertation: *Performance of an Adaptive Modulation Scheme Based on Deep Learning*

Advisor: Prof. Jin Young Kim

Bachelor of Science, Electronic Convergence Engineering

Kwangwoon University, Seoul, South Korea

March 2012 - February 2019

Thesis: *Internet of Energy System Based on Deep Learning*

Advisor: Prof. Jin Young Kim

PUBLICATIONS

Selected Publications

- 1 **Donggu Lee**, O. Ozdemir, A. Ram, and I. Guvenc, "Analysis and prediction of coverage and channel rank for UAV networks in rural scenarios with foliage," *IEEE Open Journal of Vehicular Technology*, vol. 6, pp. 1943-1962, July, 2025.
2. **Donggu Lee**, S. J. Maeng, O. Ozdemir, M. B. Pandian, and I. Guvenc, "Reliability of Wi-Fi, LTE, and 5G-based UAV RC links in ISM bands: Uplink interference asymmetry analysis and HARQ design," arXiv:2507.20392, July 2025.
3. **Donggu Lee**, Y. G. Sun, I. Sim, J.-H. Kim, Y. Shin, D. I. Kim, and J. Y. Kim, "Neural episodic control-based adaptive modulation and coding scheme for inter-satellite communication link," *IEEE Access*, vol. 9, pp. 159175-159186, Nov. 2021.
4. **Donggu Lee**, Y. G. Sun, S. H. Kim, I. Sim, Y. M. Hwang, Y. Shin, D. I. Kim, and J. Y. Kim, "DQN-based adaptive modulation scheme over wireless communication channels," *IEEE Communications*

Letters, vol. 24, no. 6, pp. 1289-1293, June 2020.

5. **Donggu Lee**, Y. G. Sun, S. H. Kim, J.-H. Kim, Y. Shin, D. I. Kim, and J. Y. Kim, "Multi-agent reinforcement learning-based resource allocation scheme for UAV-assisted internet of remote things systems," *IEEE Access*, vol. 11, pp. 53155-53164, May 2023.

MAJOR AWARDS AND HONORS

1. **IEEE Bronze Paper Award** at the 2019 IEEE Student Paper Contest, Seoul, South Korea, Nov. 2019.

Donggu Lee, Y. G. Sun, S. H. Kim, I. Sim, and J. Y. Kim, "DQN-based deep reinforcement learning scheme for adaptive modulation systems," *2019 IEEE Student Paper Contest*, Seoul, South Korea, Nov. 2019.

2. **Excellence Paper Award** at KICS Summer Conference 2022, Jeju-do, South Korea, June 2022.

Donggu Lee, Y. G. Sun, S. H. Kim, S. W. Lee, C. Kyeong, and J. Y. Kim, "Performance of an adaptive modulation technique based on dual deep Q network for satellite communications," in *Proc. of KICS Summer Conference 2022*, pp. 642-643, June 2022.

3. **Summer Graduate Award** from the College of Engineering, North Carolina State University, NC, USA, Apr. 2023.

SERVICE & LEADERSHIP

IEEE Peer Reviewer (9 papers, IEEE Transactions, VTC, ICC, etc.): Reviewed research on UAV networks, machine learning-driven communications, and adaptive modulation

WORK EXPERIENCE

Skydio Inc.

Wireless Software and Systems Engineer Intern

San Mateo, CA, USA

May 2024 - August 2024

Daohm Research Lab.

Research consultant

Seoul, South Korea

March 2022 - July 2022

Nowon Career Center for Youth and Future

Instructor: AI-based image recognition program

Seoul, South Korea

May 2021

Instructor: Basic Python programming course

January 2022 - February 2022

Communications and Artificial Intelligence Lab.

Dept. of Electronic Convergence Engineering, Kwangwoon University

Seoul, South Korea

Researcher

March 2021 - July 2022

Kwangwoon University

Teaching assistant

Seoul, South Korea

Supervisor: Prof. Myun-Joo Park

March 2019 - June 2020

Military Service: Republic of Korea Air Force (ROKAF)

Military Police: Law enforcement and entrance control

April 2014 - April 2016

SKILLS

Modeling and Analysis

MATLAB, Python

Software & Tools

Tensorflow, Keras, Sionna

Document Tools

Microsoft Office, LaTeX