Yubin Choi

ybchoi24@netlab.snu.ac.kr | (+82) 10 9384-5592

RESEARCH INTERESTS

Wireless Communication System, ML for Communication, ISAC, IoT, and Network Design

EDUCATION

• Seoul National University (SNU) *Mar 2024 – Present*
M.S. in Electrical and Computer Engineering (ECE), advised by Prof. Saewoong Bahk Seoul, South Korea

  ◦ Overall GPA: 4.03/4.30

• Yonsei University *Mar 2021 – Feb 2024*
B.S. in Electrical and Electronics Engineering (EEE) Seoul, South Korea

  ◦ Overall GPA: 3.83/4.30

• Chungnam National University *Mar 2017 – Feb 2021*
Major in Mechatronics Engineering Daejeon, South Korea

  ◦ 2 years absent for military services

  ◦ Transfer to Yonsei University

PUBLICATIONS

International Journals

[J.1] Dongrak Choi, <u>Yubin Choi</u>, Yonghoon Jeong, Jeongyeup Paek, and Saewoong Bahk, **D^2-PLC: Holistic Design and Implementation of High-Datarate Duplex DC Power Line Communication Network**, *IEEE Internet of Things Journal (IoTJ), vol. 12, no. 21, Nov. 2025.* [PDF]

International Conferences

[C.1] <u>Yubin Choi</u>, Yunseo Nam, and Saewoong Bahk, **Intelligent Channel State Information Feedback Using Variable-Rate Autoencoder**, *in Proc. International Conference on ICT Convergence (ICTC), 2025.* [PDF]

[C.2] Dongrak Choi, Yonghoon Jeong, <u>Yubin Choi</u>, and Saewoong Bahk, **Demo: A Programmable High-Throughput Duplex DC-PLC Testbed for Power and Data Integration**, *in Proc. IEEE International Conference on Network Protocols (ICNP), 2025.* [PDF]

[C.3] <u>Yubin Choi</u>, Yunseo Nam, Dongrak Choi, Jeongyeup Paek, and Saewoong Bahk, **UniQ: A Universal-Rate Quantization Network for Beyond-5G Autoencoder-Based CSI Feedback**, *submitted to IEEE International Conference on Communications (ICC), 2026.* [PDF]

[C.4] Dongrak Choi, Yongjae Yoo, <u>Yubin Choi</u>, Jeongyeup Paek, and Saewoong Bahk, **Escaping from the Shadow: Bottleneck-Aware UAV Placement for High-Throughput Relaying**, *submitted to (***), 2025.* [PDF]

Ongoing Projects

[P.1] Yunseo Nam, <u>Yubin Choi</u>, Jiwook Choi, and Saewoong Bahk, **MCnet: Multi-Modal Multi-Rate Channel Reconstruction Network for Millimeter-Wave Massive MIMO Systems**

[P.2] Geonhee Lee, Sungbo Eo, <u>Yubin Choi</u>, Jeongyeup Paek, and Saewoong Bahk, **FLASH: Frank-sequence based LoRa bAckscatter for Scalable High-throughput IoT**

RESEARCH EXPERIENCE

• Network Laboratoy (NETLAB), SNU *Jul 2023 – Aug 2023*
Undergraduate Research Intern (Advisor: Prof. Saewoong Bahk) Seoul, South Korea

  ◦ MPTCP (Multi-path Transmission Control Protocol)

• Robotic And Mobile networks laboratory (RAMO), Yonsei University *Jan 2023 – Jun 2023*
Undergraduate Research Intern (Advisor: Prof. Seong-Lyun Kim) Seoul, South Korea

  ◦ Mobile Edge Computing (MEC), Remote Robot Control, Computer Vision, Low-latency communication

PROJECTS

- **URAN (Ultra Reliable Aerial Network) for UAM Operations** *Aug 2024 – Dec 2024*
  Ministry of Science and ICT ITRC Project
  ◦ Developed a UAV placement design optimizing relay throughput

- **Capstone Design** *Spring 2023*
  advised by Prof. Seong-Lyun Kim @ RAMO
  ◦ Study on MEC-based remote robot control with computer vision offloading for URLLC.
    ∗ Developed a camera-attached robot arm system performing vision-based missions via MEC processing.

- **PYNQ-Based FPGA-ARM Integrated Game System** *Fall 2022*
  Introductory Digital Labs (EEE3313.01)
  ◦ A multi-functional embedded system integrating Verilog, ARM, audio, and graphics for a Galaga-style shooting game.

TEACHING EXPERIENCE

- **Teaching Assistant** *Sep 2025 – Dec 2025*
  Creative Engineering Design (400.018), Department of ECE, SNU
  ◦ Guided interactive sessions on Arduino programming and Raspberry Pi OS.

- **Tutor** *Sep 2023 – Dec 2023*
  Tutoring Program (learnus-161), Center for Teaching and Learning Innovation, Yonsei University
  ◦ Provided guidance on Digital Signal Processing course (EEE4420.01-00)

PATENTS

- **Drone relay placement apparatus for high-quality data transmission in cellular shadow areas** *2024*
  S. Park, J. Baek, Y. Yoo, D. Choi, and Y. Choi
  ◦ KR 10-2024-0195602 (filed)

HONORS AND AWARDS

- **Academic Excellence Award** *Spring 2023*
  Yonsei University

SKILLS

- **Computer Languages:** Python, C/C++, LaTeX, Verilog
- **ML Frameworks:** PyTorch, TensorFlow
- **Modeling:** Blender, PTC Creo, SketchUp
- **Simulation Tools:** MATLAB, NVIDIA Sionna
- **Experiment Tools:** iPerf3, Wireshark, Linux tc, Nuvoton N76E003 MCU, Arduino, Raspberry Pi
- **Languages:** Korean (Native), English (Fluent)

OTHER EXPERIENCE

- **Conscripted Firefighter, National Fire Agency** *Aug 2019 – Apr 2021*
  Emergency Medical Services Unit, Fire Rescue Unit Cheongju, South Korea
  ◦ Completed mandatory military service as a conscripted firefighter under the Conscripted Firefighters Agency (CFA)

- **Olympic Broadcasting Services (OBS)** *Jan 2018 – Mar 2018*
  Broadcast Training Programme Member PyeongChang, South Korea
  ◦ Participated in the Broadcast Training Programme for the 2018 PyeongChang Winter Olympics, supporting live production and media operations.