

Guhyeon Lee

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EDUCATION

2020 – Present Bachelor of Science in Electronic Engineering

Seoul National University of Science and Technology, Seoul, South Korea

RESEARCH EXPERIENCES

Research Assistant, Dept. of Electronic Engineering, Seoul National University of Science and Technology. Advisor: Jae-Won Nam (2024 ~ Present)

- Current steering DAC
- PLL design and Jitter analysis
- Direct digital frequency synthesizer & pulse shaping module for qubit controller
- Programming Language : Verilog HDL, Matlab, Python
- EDA Tools : Cadence Virtuoso, Mentor Calibre, Synopsys VCS/DC/FM/STA/ICC2

Tape-out

- 2025.12. TSMC 180nm BCD, Charge Pump ($3 \times 2 \text{ mm}^2$). (Digital block / BIAS / VCO)
- 2025.09. TSMC 65nm LP RF, Cryogenic Qubit Controller ($2 \times 2.14 \text{ mm}^2$). (Top integration / Digital block / Clock buffer)
- 2025.06. ETRI 500nm CMOS, Binary Instruction SRAM ($1.78 \times 1.78 \text{ mm}^2$). (Top integration / Decoder)
- 2025.05. DBH 110nm CIS, SRAM-based PUF ($1 \times 1.5 \text{ mm}^2$). (Amplifier / Layout support)
- 2024.10. TSMC 65nm LP RF, Transmitter ($3 \times 2 \text{ mm}^2$). (Clock buffer / Layout support)
- 2024.09. Samsung 28nm FD-SOI, Transmitter ($4 \times 4 \text{ mm}^2$). (Clock buffer / Layout support)
- 2024.07. Samsung 28nm LPP, TI DSM DAC ($4 \times 4 \text{ mm}^2$). (BIAS / Layout support)

HONORS / AWARDS

- Best Student Paper Silver Award, IEEE Seoul Section Student Paper Contest, Dec. 2025.
- Chair's Award (2025 Capstone Design), Seoul National University of Science and Technology, College of Information and Communication, Dec. 2025.
- Corporate Special Award, 2024 AI-Semiconductor Idea & Design Competition, Jan. 2024.

LIST OF PUBLICATIONS

- S.-H. Kim, H. Yoo, **G. Lee**, J.-W. Nam, "A Pulse Generation Module for Frequency-Division Multiplexing Qubit Controller", IEEE Seoul Section Student Paper contest, Seoul, Dec. 2025.
- M.-H. Jeon, H. Yoo, **G. Lee**, J.-W. Nam, "A Numerical Model-based SPAD Optimization Method in Optoelectronics", International Conference on Electronics, Information, and Communication (ICEIC), Japan, Jan. 2025.
- S. -H. Kim, Y. Kim, E. Yoo, **G. Lee**, S. Lee, J.-Y. Park, J. Kim, J.-W. Nam, "Design of Pulse Shaping Module for Multiple Qubit Control Pulse Generation," Summer Annual Conference of IEIE, Jeju, Jun. 2025.
- K. Yu, H. Yoo, D. Kim, J. Yoo, **G. Lee**, W. Jeong, S. Lee, J.-P. Hong, J.-W. Nam, "Light Detection Sensor-based Decoy Data System for Physical Attack in SRAM PUFs", IEEE Seoul Section Student Paper contest, Seoul, Dec. 2024.

TEACHING EXPERIENCE

- **Teaching Assistant**, Dept. of Electronic Engineering, Seoultech.
- Electronic Circuit (1), Spring 2025.
- Electronic Circuit (2), Fall 2025.

TRAINING ACTIVITIES

- 2024.12.20-12.22, [IDEC Education] PLL design and jitter analysis.
- 2024.08.27-08.30, [KIRD Education] Advanced semiconductor design (PA & LNA).
- 2024.08.20-08.23, [KIRD Education] Advanced semiconductor design (VCO).