

Yongjin Kim

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RESEARCH INTERESTS	Guidance and Control; Trajectory Optimization; Nonlinear and Adaptive Control		
EDUCATION	Konkuk University <i>B.S. Candidate in Electrical and Electronics Engineering</i>	Mar. 2022 – Feb. 2028 (Expected)	Seoul, Korea
	• GPA: 3.95 / 4.5		
RESEARCH EXPERIENCE	Intelligent Navigation and Control Laboratory , Konkuk University <i>Undergraduate Research Student (Adviser: Professor Sang-Kyung Sung)</i>	Dec. 2025 – Jun. 2026	Seoul, Korea
	• INS/GNSS Integrated Navigation - Implemented and evaluated a 15-state loosely coupled INS/GNSS extended Kalman filter for UGV trajectory estimation. - Analyzed position, velocity, and attitude errors against reference data and documented limitations in initialization, modeling, and tuning.		
PROJECTS	ASEC Rocket Team , Konkuk University <i>Electronics Team Member</i>	Mar. 2025 – Present	Seoul, Korea
	• Rocket Telemetry and Ground Control Station - Built a real-time web-based GCS for telemetry visualization during the 34th NURA. - Integrated decoding for IMU, GPS, altitude, attitude, and flight-status data, and verified 447 MHz telemetry reception over approximately 600 m.		
	• Hardware-in-the-Loop Avionics Test System (Ongoing) - Developing an STM32F405-based HILS platform for avionics firmware validation. - Designing a packetized interface that replays Simulink-generated sensor data to the flight computer for the 35th NURA rocket.		
	2026 Engineering Capstone Design Team , Konkuk University <i>Control Software and Electronic Systems Developer</i>	May 2026 – Present	Seoul, Korea
	• Active Suspension System for Stroller Vibration Reduction (Ongoing) - Developing control software, electronic systems, and an IMU-based evaluation workflow for a motor-actuated stroller suspension prototype.		
	AI Accelerator Design Term Project , Konkuk University <i>Course Project</i>	Mar. 2026 – Jun. 2026	Seoul, Korea
	• Tiny Neural Network Accelerator - Implemented a Verilog accelerator for FC1-Norm-ReLU-FC2 inference with a reusable 4×4 weight-stationary systolic array, tiled multiplication, and batch-mode control logic.		
	Microprocessor Applications Term Project , Konkuk University <i>Course Project</i>	Mar. 2026 – Jun. 2026	Seoul, Korea
	• CNN Accelerator Optimization with RISC-V - Optimized RISC-V assembly kernels for CNN accelerator data movement, address generation, and memory-access scheduling, with functional validation across 168 convolution cases.		

	Electrical and Electronics Design & Software Practice, Konkuk University <i>Course Project</i>	Mar. 2026 – Jun. 2026 Seoul, Korea
	• 64-Point FFT Software Optimization on Zynq - Completed and benchmarked a 64-point radix-2 DIF FFT in C on the Zybo Z7-20, comparing DFT, C FFT, and ARMMv7 assembly across compiler and cache configurations. • 16-bit Five-Stage Pipelined Tiny CPU - Implemented a 16-bit five-stage pipelined CPU in Verilog with arithmetic, memory, and control-flow instructions and multi-stage data forwarding.	
	WINEQUEEN, 23rd Embedded Software Contest <i>Vision and Control Software Developer</i>	Mar. 2025 – Sep. 2025 Seoul, Korea
	• Automated Wine-Bottle Sealing and Opening System - Developed YOLOv8 detection and Arduino control software for automated wine sealing and opening.	
	Digital Communications Laboratory, Konkuk University <i>Undergraduate Project Member</i>	Feb. 2025 – Jun. 2025 Seoul, Korea
	• Vision-Based Drone Following Project - Developed YOLO-based person detection and bounding-box control logic for drone-following experiments.	
TRAINING	DYROS Robotics Boot Camp, Seoul National University <i>Participant</i>	Jan. 2026 Online
	- Completed hands-on training in ROS2 communication, MuJoCo simulation, and MoveIt2.	
AWARDS	4th Place and Sponsor's Award, 34 th NURA National University Rocket Launch Competition <i>Konkuk University Rocket Team</i>	Dec. 2025 Korea
LEADERSHIP	BOOT&4DIM, College of Engineering Academic Club, Konkuk University <i>President / Vice President / Executive Board Member</i>	Mar. 2023 – Aug. 2023; Mar. 2025 – Jun. 2026 Seoul, Korea
	- Led an embedded software and hardware prototyping club.	
	Electrical and Electronics Engineering Student Self-Governance Committee, Konkuk University <i>Chair</i>	Jan. 2026 – Aug. 2026 Seoul, Korea
	- Coordinated student governance and communication with the department.	
TECHNICAL SKILLS	Programming Languages: Python, C/C++, MATLAB, Verilog, RISC-V Assembly Hardware Platforms: STM32, Zybo Z7-20, Arduino, Raspberry Pi Tools: Linux, Git, Vivado, Xilinx SDK, KiCad, OrCAD, PSpice, Fusion 360	
LANGUAGE	Korean: Native	
MILITARY EXPERIENCE	Republic of Korea Army <i>Sergeant, Honorably Discharged</i>	Sep. 2023 – Mar. 2025 Korea