

Arslan Kenbayev

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EDUCATION

KAIST

Bachelor of Science in Electrical Engineering

Aug. 2022 – Feb. 2027

Daejeon, South Korea

EXPERIENCE

Edge AI Engineer Intern

KAIST IC Lab

Jan 2026 – Present

Daejeon, South Korea

- Optimized on-device ML inference latency and memory on Wear OS by deploying compact TFLite/LiteRT models under strict resource constraints.
- Achieved zero-loss signal synchronization by engineering a 50 Hz IMU data pipeline with real-time buffering and normalization techniques.
- Accelerated hardware-software integration by debugging tensor shapes, model loading, and multi-modal execution directly on Samsung Galaxy Watch 6.

Embedded Systems Engineer Intern

AXInvent

May 2025 – Mar. 2026

Daejeon, South Korea

- Accelerated smart agriculture prototyping by designing Altium-based I2C/SPI/UART sensor schematics and integrating analog/digital PCB components with custom power regulation and signal conditioning.
- Programmed the complete functional logic of master and slave nodes from scratch in C to initialize, isolate, and continuously stream real-time environmental sensor data.
- Validated IoT sensor data integrity through oscilloscope/DMM bring-up, sensor debugging, and edge-to-cloud integration across Arduino Nano, Nvidia Jetson, and Raspberry Pi 4 via gRPC/HTTP/2.

Semiconductor Engineer Intern

KAIST IOEL Lab

May 2025 – Aug. 2025

Daejeon, South Korea

- Optimized organic OLED performance toward lower turn-on voltage and higher luminance by fabricating CO₂-derived thin-film stacks and systematically analyzing forward-bias I-V sweep characterization data.

Automation Engineer Intern

AAEngineering

July 2024 – Sep. 2024

Almaty, Kazakhstan

- Improved gold ore segregation readiness by validating sensor integration in SolidWorks, analyzing multi-node RF/IoT topology, and prototyping automated control logic.

PROJECTS

AI for Robot Intelligence | ROS2, Python, YOLOv8, Nav2, JAX | [\[github\]](#)

Mar. – June 2026

- Engineered an autonomous robotic agent by integrating a Gemini LLM action planner, fine-tuned YOLOv8-pose vision, and Nav2 A* path planning across Karto SLAM-mapped environments.
- Executed physical manipulation tasks by solving optimization-based inverse kinematics via JAX and deploying an Implicit Q-Learning (IQL) offline reinforcement learning policy trained on teleoperation datasets.

Pipelined RISC-V CPU | System Verilog, Verilog, ModelSim | [\[github\]](#)

Sep. – Nov. 2025

- Designed and verified 100% testbench pass rate for a synthesizable 5-stage RISC-V pipeline CPU by implementing hazard detection/forwarding logic in SystemVerilog and debugging ModelSim waveform timing faults across IF/ID/EX/MEM/WB stages.

Ultra-Low-Power Smartwatch Firmware | C, Arduino Nano 33 BLE, nRF5 SDK | [\[github\]](#)

Mar. – June 2025

- Developed the complete embedded architecture and device drivers from scratch in C to achieve a DMM-verified system current draw of 85 μ A; implemented customized IMU duty cycling, step counter, an automated SSD1306 OLED display sleep routine, and coordinated active I2C sensor polling across LSM6DS and APDS-9960 hardware nodes with synchronized BLE GATT server firmware.

Capstone: Industrial Anomaly Detection | Python, DCASE 2020, Git, Linux

Mar. – June 2025

- Enabled mechanical failure detection under real-world noise by training an unsupervised autoencoder on ToyADMOS/MIMII acoustic datasets and applying reconstruction error thresholding.

TECHNICAL SKILLS

Hardware & Embedded: PCB Design, Firmware Dev (nRF5 SDK), Sensor Integration, I2C/SPI/UART/BLE, Oscilloscope/DMM, I-V Characterization

Robotics & AI: ROS2, Nav2, SLAM, YOLOv8, JAX, Reinforcement Learning, Inverse Kinematics, LLM APIs

Languages: C/C++, Python, SystemVerilog/Verilog, MATLAB

CAD, Platforms & Tools: Altium, SolidWorks, ModelSim, Nvidia Jetson, RISC-V, Arduino, Git, Linux