

# Kwanho Kim Software Engineer

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Software Engineer with hands-on experience in automotive and robotics software, including C++, Python, Linux, simulation, and real-world system integration. My background spans V2X communication, real-time systems, autonomous driving prototypes, and production-oriented robotic vision software. I am motivated by function development problems where planning, control, testing, and system behavior must come together reliably in real vehicles.

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## Education

### Bachelor

- Mechatronics, *Korea National Open University*  
Seoul, South Korea | Feb 2026 - Present
- Artificial Intelligence, *Korea National Open University*  
GPA: 3.44/4.5 | Seoul, South Korea | Mar 2023 - Feb 2025
- Computer Engineering, *Korea Academic Credit Bank System*  
GPA: 4.24/4.5 | Seoul, South Korea | Apr 2019 - Aug 2020
- Business Administration, *Korea Academic Credit Bank System*  
GPA: 3.77/4.5 | Seoul, South Korea | Apr 2019 - Aug 2022

**École 42** *Software engineering program: C/C++/Unix/algorithms* Seoul / Wolfsburg | Sep 2020 - Present  
**SEA:ME** *Master-level program, Automotive & Mobility* Wolfsburg, Germany | Jul 2023 - Jun 2024

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## Professional Experience

### Pickit 3D

#### Research & Software Engineer

Leuven, Belgium | Aug 2025 - Mar 2026

Core stack: C, C++, Python, TypeScript, React, WebSocket, ROS1, Docker, Git

- Developed and supported production software features across UI, API, and streaming/integration layers for deployed vision systems.
- Built a reusable Python WebSocket client with reconnect/backoff logic, validation, and logging to improve robustness across internal tools.
- Implemented internal tooling for log collection, conversion, and troubleshooting workflows, reducing manual effort and speeding up incident triage.
- Developed a configuration interface for system and network settings with validation and safe defaults, improving usability and reducing configuration errors.
- Diagnosed and fixed a field communication issue caused by a port conflict, restoring stable connectivity and documenting preventive checks.

### Bosch

#### Internship, V2X Communication

Hildesheim, Germany | Jun 2024 - Nov 2024

Core stack: C++, Python, TypeScript, React, ROS2, Docker, Git

- Implemented a **V2X vehicle demonstrator** for safety-critical scenarios, defining message/data interfaces and validating end-to-end behaviors in test runs.
- Integrated communication modules and designed data contracts/interfaces to decouple components and speed up iteration.
- Built a **React-based HMI** for an eBike safety prototype with clear state modeling and operator-friendly interactions.
- Performed data analysis and troubleshooting in automotive systems

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## Skills

**Programming:** C, C++, Python, TypeScript

**Systems & Platforms:** Linux, Docker, ROS1/ROS2, WebSocket, system integration, field debugging

**Software for Machines:** hardware-adjacent software, communication layers, configuration tools, operational tooling, reliability-focused troubleshooting

**Frontend & Interfaces:** React, TypeScript, operator-facing UIs, configuration workflows, Figma

**Applied Domains:** robotic vision systems, V2X communication, simulator-based prototyping (CARLA)

**Tools:** Git, logging/debugging workflows, documentation, cross-functional collaboration

**Languages:** Korean (Native), English (C1/Advanced)

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## Projects & Leadership

### ColorSaveLife

*BoschConnectedExperience (BCX) 2024 Hackathon 1st Prize*

*Berlin, Germany / Feb 2024*

- Led and presented a cross-functional team that won 1st place at Bosch ConnectedExperience 2024.
- Integrated gaze/eye-tracking into a simulation pipeline and built a plugin-based Python client architecture for rapid experimentation.

### Autonomous Lane-Keeping-Assist

*SEA:ME (Software Engineering Automotive & Mobility Ecosystems)*

*Wolfsburg, Germany / Aug 2023 - Dec 2023*

- Implemented CNN-based lane detection on CARLA and built a data-handling client to streamline dataset capture and evaluation.
- Designed a specialized CarlaClient class for efficient data management

### Rush03 : Rock Band, Keyboardist & Leader

*École 42 - Seoul, Student Club*

*Seoul, South Korea / Aug 2022 - Jul 2023*

- Led a 50-member community and delivered 3 events for 200–300 attendees, establishing a repeatable operational process (Planning/Rehearsal/Risk Response).
  - Integrated multifaceted initiatives such as a developer conference to enrich the event experience.
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## Certifications

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| <b>IELTS Academic 7.5 (C1)</b>   | Mar 2025 |
| <b>TOEIC Speaking 160 (B2)</b>   | Dec 2022 |
| <b>TOEIC 860 (B2)</b>  | Dec 2021 |
| <b>Engineer Information Processing</b> <ul style="list-style-type: none"><li>- Human Resources Development Service of Korea (HRD Korea)</li><li>- Korea national certification in system development / information processing / project management</li></ul>             | Nov 2020 |
| <b>Computer Specialist in Spreadsheet &amp; Database (Level I)</b> <ul style="list-style-type: none"><li>- Korea Chamber of Commerce and Industry (KCCI)</li><li>- Korean national certification for advanced productivity software and data management skills</li></ul> | Dec 2019 |
| <b>Network Advisor (Level 2)</b> <ul style="list-style-type: none"><li>- International Civil Qualification Association (ICQA)</li><li>- Korean national certification for network administration</li></ul>   | Oct 2019 |