Leo Jaeeun Kim

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EDUCATION

University of Michigan College of Engineering Graduate School – Ann Arbor *08.2022 – 05.2024*

- M.S.E in Electrical & Computer Engineering: Control and Autonomous System concentrate GPA 4.0
- Research: Monocular 3D Objection Detection Using Open-Source Monocon Neural Network
- Certificate: Project Management and Consulting – P3Mobility Freight Signal Priority (FSP) Model

Michigan State University *08.2017 – 05.2021*

- B.S.E in Electrical Engineering, Minor in Computer Science
- Research: Reactive Power Support for Microgrids by Grid connected EV - 52nd North American Power Symposium

Skills: MATLAB, Simulink, C/C++, Python, CAN, LIN, Ethernet, HiL/MiL/SiL, CppU, Triage, Git, Jenkins, JIRA, DFMEA, ISO26262

PROFESSIONAL EXPERIENCE

General Motors

Control System and Software Engineer in **ADAS Motion Planning group** *02.2023* – Present

- Developed production-grade embedded C software for real-time motion prediction, sensor fusion with Kalman filtering, trajectory overlap estimation, and dynamic threat object selection. Reduced false braking by 71%, improving real-world system reliability.
- Spearheaded front and rear collision avoidance development, delivering FMVSS127 and NCAP-compliant features across 97% of 3M+ MY25–27 vehicles, including pedestrian, imminent braking, and intersection collision mitigation modules via CI/CD pipelines.
- Investigated 100+ perception and collision avoidance failures across CAN logs, simulation, and customer data via MATLAB and Triage. Analyzed root causes and delivered software and calibration fixes with JIRA ownership and problem resolution tracking system.
- Developed a full-stack GUI-based SiL application to streamline ADAS software validation; automated signal routing, playback, and output visualization across safety-critical modules, achieving 20x faster test execution and 99%+ unit test coverage.
- Constructed a scalable data preprocessing pipeline to transform raw vehicle logs into structured test inputs for HiL, SiL, and MiL environments; enabled high-throughput scenario playback, automated fault injection, and robust calibration validation across edge cases.
- Integrated camera-radar fusion with ASIL-compliant confidence logic for object integrity assessment, supporting ISO 26262 traceability.
- Engineered end-to-end embedded system architecture for collision avoidance, integrating AUTOSAR software components, RTE APIs, middleware (COM/COMR), and ECU-level signal routing to enable braking actuation.
- Planned and executed in-vehicle tests for L2+ ADAS features (ACC, AEB, AES), performing live calibration and parameter tuning.

Controller Integration Engineer in **Autonomous Vehicle Control group** *08.2022 – 02.2023*

- Developed and optimized lane map fusion algorithms for blue line path generation, integrating dynamic localization and perception inputs to enhance path confidence estimation and improve downstream planning stability.
- Validated Advanced Driving Integration Module (ADIM) on HiL platforms for Cruise robotaxi programs, managing end-to-end issue triage, root cause analysis, resolution tracking, and software validation across multiple component interfaces.
- Designed Cruise Enable Engine control logic in python, optimizing control handoff between manual and autonomous modes.
- Utilized INCA and ECU software to calibrate and optimize control parameters, ensuring system reliability and performance under dynamic driving conditions. Implemented patch builds to support validation testing and rapid iteration.

Innovation Vehicle Electrical Engineer in **Advanced Vehicle Development group** *02.2022 – 08.2022*

- Delivered production-ready autonomous door system by owning full-stack development—from schematics to embedded C software on PIC microcontrollers—featuring auto-stop, noise reduction, and fail-safe functionality through DFSS design.
- Analyzed camera, ultrasonic, and IMU sensor performance for BrightDrop EVs, assessing latency, accuracy, and signal fidelity.

Advanced Propulsion System Engineer in **Electrification and Battery Systems group** *07.2021 – 02.2022*

- Led DFMEA development for BEV Prime architecture; mitigated high-voltage system risks through structured failure analysis.
- Designed and validated schematic for Switchable Battery Disconnect Unit (SBDU) within high-voltage safety framework.

DENSO International America Inc

Apprentice Engineer II in **Body Electronics System group** *05.2019 – 08.2019 / 01.2021 – 05.2021*

- Built 2nd generation of Body Control Module simulator architecture, reducing prototype costs and turnaround time by 30%.
- Executed rigorous Design Validation of embedded BCM software and hardware using Vector CANalyzer and CANoe.

PROJECT

Advanced ADAS Research and Course Development – adas101.com

- Designed and authored a research series on vehicle dynamics, optimal control (LLS, LQR, MPC), collision avoidance, and trajectory planning, delivering production-grade python code and visualizations as a recognized ADAS engineering foundation.