# Leo Jaeeun Kim

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## EDUCATION

**University of Michigan College of Engineering Graduate School – Ann Arbor** *08.2022 – 05.2024*
- Master of Engineering in Electrical & Computer Engineering: Control and Autonomous System concentrate GPA 4.0
- Research: Monocular 3D Objection Detection Using Open-Source Monocon Neural Network

**Michigan State University** *08.2017 – 05.2021*
- Bachelor of Science in Electrical Engineering, Minor in Computer Science
- Research: Reactive Power Support for Microgrids by Grid connected EV - 52nd North American Power Symposium

## PROFESSIONAL EXPERIENCE

### General Motors

**Control System and Software Engineer in ADAS Mission Planning group** *02.2023 – Present*
- Led front and rear impact mitigation ring for collision avoidance systems, covering 97% of 3 million MY25 & 26 vehicles with pedestrian, collision imminent, and intersection components in a CI/CD pipeline.
- Developed vehicle trajectory estimation and object selection algorithms using MATLAB and C, reducing false braking events by 71% and improving system performance.
- Analyzed vehicle data to improve component robustness against sensor inaccuracies, using MATLAB and Python.
- Led virtual design simulation including HiL/MiL/SiL and performed system calibration and optimization.
- Integrated Camera, Radar, and Ultrasonic sensor data using Kalman Filtering, optimizing object integrity estimation.
- Created CppU regression tests and a Python-based playback tool, ensuring data consistency across core systems..
- Built data visualization tools for open-loop analysis of target selection and braking systems.
- Led ADAS Object Selection DFMEA that handle federal regulation – FMVSS and NCAP

**Controller Integration Engineer in Autonomous Vehicle Control group** *08.2022 – 02.2023*
- Developed and optimized lane map fusion algorithms for blue line path generation and path confidence.
- Validated HIL for Advanced Driving Integration Module of Cruise robotaxi and mange issue resolution and tracking.
- Led design for the cruise enable engine control algorithm, optimizing vehicle control and performance.
- 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*
- Led the development of the Autonomous Innovation Vehicle door project, managing hardware integration, software development, and validation across all subcategories while leveraging DFSS methodologies to ensure robust design.
- Developed embedded systems in C for door control, incorporating auto-stop functionality, hardware failure detection, and noise reduction using MPLAB X and PIC microcontrollers.

**Advanced Propulsion System Engineer in Electrification and Battery Systems group** *07.2021 – 02.2022*
- Responsible for BEV Prime DFMEA process to identify and mitigate potential risks in the electrified vehicle development of new electrified vehicle designs
- Designed the schematic for a Switchable Battery Disconnect Unit (SBDU) within a High Voltage (HV) architecture.

### DENSO International America Inc

**Apprentice Engineer II in Body Electronics System group** *05.2019 – 08.2019 / 01.2021 – 05.2021*
- Developed electrical structure of 2nd generation of Body Control Module simulator and achieved 30% of cost and lead-time.
- Validated Thermal Testing of Exterior Light Module and analyzed through Vector CANalyzer.

## SKILLS

- Control System: Object Fusion, Trajectory Estimation & Optimization, Collision Avoidance, Vehicle Dynamics
- Software: MATLAB, Simulink, Python, C, C++
- Tools: GitHub, Git, Jenkins, JIRA, CI/CD pipelines
- Testing & Simulation: HiL, MiL, SiL, CppU regression test, system calibration
- Network Protocols: CAN, LIN, Ethernet, System I/O
- System Engineering: DFMEA, DOORS, FIT