Raja Mohan Cheekurti

ADAS Systems Engineer II |Functional Safety Testing | ADAS

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SUMMERY

Experienced ADAS Systems Engineer with a proven track record in developing, integrating, and validating advanced driver assistance and autonomous driving technologies. Skilled in model-based design using MATLAB/Simulink, real-time vehicle control algorithm development, and sensor fusion involving Radar, LiDAR, and cameras. Extensive hands-on experience with embedded C/C++ development, ROS, CAN-based diagnostic tools (CANoe, CANalyzer, CANape), and virtual simulation environments like MathWorks RoadRunner and Unreal Editor. Demonstrated ability to lead software integration and testing efforts across SIL/HIL platforms and ensure compliance with international safety standards (EURO NCAP, NHTSA, ISO 26262). Adept at collaborating with OEMs and Tier 1 suppliers to drive innovation in Level 2 and 3 autonomous vehicle systems.

WORK EXPERIENCE

ADAS Systems Engineer II *(05/2025- present)*

Astemo Ltd, Farmington Hills, MI

- Designed, developed, and validated Advanced Driver Assistance Systems (ADAS) features including Adaptive Cruise Control (ACC) and Lane Keeping Assist (LKA) using MATLAB and Simulink.
- Built and simulated system-level vehicle control models and logic flows in Simulink, ensuring real-time responsiveness and safety constraints compliance.
- Utilized MathWorks RoadRunner for 3D scenario generation and HD map integration to create realistic traffic environments for feature testing.
- Integrated and co-simulated vehicle dynamics and sensor models with Unreal Editor for MATLAB to visualize and test control algorithms in photorealistic virtual environments.
- Developed a Python-QT based Overhead ACC Viewer application to visualize synchronized video, CAN data waveforms, and top-down animated vehicle views from real-world test logs.
- Implemented modules for decoding MF4 and BLF CAN log files using ASAMMDF and open-DBC, enabling extraction of ACC-relevant signals such as relative distance, relative velocity, and lane geometry.
- Engineered a multi-pane GUI architecture integrating video playback, waveform plotting, and bird's-eye visualization of surrounding vehicles and lane lines in real time.
- Optimized playback synchronization between multiple video feeds and CAN signal animations to support event analysis and feature validation.
- Designed configurable settings dialogs, status bars, and diagnostic overlays to aid in ADAS test data review and reporting.

ADAS Engineer *(08/2021- 05/2025)*

FEV North America Inc, Auburn Hills, MI

- Architect and sustain robust embedded C/C++ software solutions within an embedded Linux environment, implementing advanced vehicle bus communication drivers and application software. Lead software integration efforts and development within the ROS environment, optimizing ADAS/AD sensor and controller performance.
- Orchestrate the seamless integration of diverse software sub-modules to construct a cohesive and high-performing ADAS/AD software unit, ensuring optimal functionality and reliability.
- Utilize advanced diagnostic management systems, including CANoe, CANalyzer, CANape, and CDA, to enhance vehicle diagnostics and performance analysis, driving continuous improvement in system reliability.
- Lead efforts in updating, troubleshooting, and performance testing of vehicle ECUs using CDA, Vector CANoe, and ViCANdo software, ensuring peak operational efficiency and reliability for Fiat Chrysler Automobiles.
- Design and execute comprehensive DVP test cases for ADAS features in compliance with EURO NCAP, NHTSA, and ISO standards, leveraging detailed vehicle ECU architecture and circuit schematics.
- Oversee the integration of sophisticated electronic control units into diverse applications, ensuring seamless functionality and enhanced system performance.
- Innovate and refine sensor fusion algorithms for Radar, LiDAR, and Cameras, enhancing the accuracy and reliability of ADAS/AD systems.
- Engineer advanced control algorithms for Adaptive Cruise Control, Automatic Emergency Braking, Lane Keep Assist, and other ADAS features, driving the evolution of autonomous driving technologies.
- Lead the integration and rigorous testing of ADAS/AD sensors, including Radar, LiDAR, cameras, and ultrasonic sensors, ensuring precise

calibration and optimal performance.

- Conduct in-depth data logging and analysis to identify and resolve root causes of software issues, enhancing system reliability and performance.
- Design and implement intuitive GUIs using Python and MATLAB App Designer to optimize camera display arrangements, enhancing user experience and system usability.
- Decode, analyze, and simulate CAN data from vehicle radars using CANoe, developing detailed documentation to facilitate discussions on future advancements with customers.
- Critically review and provide expert feedback on systems engineering documents from ADAS suppliers, driving resolution of issues and ensuring adherence to best practices.
- Contribute to the development of Level 3 Autonomous Driving vehicles, leveraging expertise in ADAS/AD technologies to drive innovation and advancement in autonomous driving capabilities.
- Certified in AB Dynamics Guided Soft Target (GST) and Autonomous Pedestrian Target systems, specializing in the implementation and optimization of AEB, FAPA, LKA, and other advanced ADAS features.

Autonomous Technologies Intern *(10/2020-08/2021)*

LHP Engineering Solutions, Pontiac, MI

- Developed the Algorithm to Control the Throttle and Steering of the vehicle for Obstacle avoidance and Adaptive Cruise Control
- Developed the Sensor Fusion Module of Stereo Camera and RADAR to subscribe and publish the chassis control command through ROS Architecture
- Worked on Validation of the controller in SIL/HIL setup
- Assisting Senior Engineers from FORD in ADAS Level 2 self-driving vehicle testing on Mach-E Electric vehicle and F-150
- Travel to different US states and driving in different climate conditions to test, record the data and report the fault indicators of ADAS features using APTIV DATA Tool and Logging Tool
- Development of Electronic Throttle Position Controller using Linear Potentiometer
- Distributed Control System for Electronic Throttle Position (ETC) and CAN j1939 Communication
- Developed a feedback PID electronic throttle controller using Simulink and MotoHawk blocks
- Calibrated the control system using MotoTune calibration tool& tested and validated the developed PID control logic
- Development of Gasoline Engine Speed Control System
- Designed engine PI control logic, plant model, and encoder for a diesel engine using MATLAB, MotoHawk, MotoTune, and Simulink
- Developed Simulink minimum and maximum governor models for controlling engine speed
- Developed a state machine for stall, crank, run, and overload states and calibrated engine at different states
- Developed strategies such as state manager, set point manager in Simulink for engine start, idle and stability and accelerator pedal position
- IEEE Certified Automotive Functional Safety Training (ISO-26262) – ASIL, HARA, FTA, FSR, and TSR

INTERNSHIPS

Graduate Assistant, Fairfield University, *Fairfield, CT (1/2019 – 12/2019)*

- Supported classroom instructor in Heat Transfer and Thermodynamics by grading assignments and proctoring exams
- Led lab exercises on Instron, Rockwell Hardness, and Scanning electron microscope (SEM)

Teaching Assistant, Fairfield University, *Fairfield, CT (2/2018 – 12/2018)*

- Demonstrated mastery of course material in assisting with undergraduate level Applications of Robot Kinematics
- Guided students through lab exercises in forward kinematics, DH convection and inverse kinematics experiments on Rhino XR robotic arm

TECHNICAL SKILLS AND SOFTWARE COMPETENCY

CDA (Chrysler Diagnostic Application) | CANalyzer | Vector CANoe | Vector CANape| ADAS Testing (L0-L3) | Data Review
AB Dynamics (SR, BR, AR) | ROS |Linux |Functional Safety Testing ISO26262: FSR, TSR, FTA, ASIL, HARA | HIL Testing
Kvaser CAN | MATLAB| SIMULINK | Microsoft Office: PowerPoint, Word, Excel, Outlook | MotoHawk | MotoTune | Python | C++
MathWorks RoadRunner | SolidWorks: CSWA, CSWP Certified

EDUCATION

Master of Science in Mechanical Engineering
Fairfield University, Fairfield, Connecticut *(01/2018-12/2019)*

Bachelor of Science in Mechanical Engineering (BSME)
JNTUH, Hyderabad, India *(05/2012-04/2016)*