Kundan Jha K

Vehicle Dynamics & Controls Engineer

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OBJECTIVE

I'm a Vehicle Dynamics Simulation Engineer more than 4 years of experience in global automotive company, a highly motivated engineer interested to work in Vehicle Development. With good domain knowledge in E-Mobility, Systems Engineering, Vehicle Design & Development, Vehicle Controls & Autonomous Systems etc. I hope to obtain the position in your organization. Looking forward to work and contribute towards the goals of the organization as well as learn and grow in my career.

SKILLS

Chassis – *Brakes, Tire, Steering & Suspension, Drivability, Ride, Handling, RLDA, Durability*
Vehicle Controls – *ABS, VDC/ESP, TCS, ASR, EPAS, Semi-Active Suspension Control, Driver PID, Lateral Steering Controller, Cruise Control, ACC, AEB*
E-Powertrain – *Motors, DC-DC Converter, Inverter, Battery & Chargers*
Vehicle Communication Protocol – *CAN, LIN, FlexRay*
Tools – *1D : MATLAB & Simulink, AMESim, GT-Suite MBS : Adams, MotionView, CarMaker*

WORK EXPERIENCE

OLA ELECTRIC, HOSUR RD, KOROMANGALA, BANGALGORE-560095

ASSISTANT MANAGER – Vehicle Engineering 2W & 4W *September 2025 – Present*

- *Performed COASTT Track **Lap Time Simulation** with 11kW & 13 kW motor in BikeSim & Co-relation with Test.*
- ***Damper proposal** for Roadster X+ 9.1kWh variant.*
- *Developed a CARLA **proof-of-concept ACC simulation** using camera and radar sensors to mimic real-world inputs; integrated **YOLO for real-time road object detection** and **generated realistic traffic** with multiple vehicles and pedestrians to enhance simulation realism.*

MAHINDRA RESEARCH VALLEY, MAHINDRA WORLD CITY, CHENNAI-603004

SENIOR ENGINEER - CAE Dynamics *June 2024 – September 2025*

Vehicle Dynamics Multibody Simulations (Mahindra XUV700 & Concept Range Extender)

- *Building Multibody Vehicle level & subsystem level models in Adams Car. Performing Full Vehicle DVPs longitudinal – **Acceleration & Braking**, Lateral – **Handling & Stability**, Vertical – **Ride (Primary & Secondary)**. **K&C** DVPs for Front & Rear Suspension i.e bump test, roll test, longitudinal & lateral compliance, steering test etc*
- *Optimizing Understeer by selecting optimal ARB dia, Bush Stiffness & Tire Cornering stiffness. (DVPs: Steady State test, Step Steer, Frequency Response, On Center)*
- *Virtual Damper Tuning: Proposed optimal dampers for BEVs to meet Semi-Active Level of performance in Ride, Handling & Stability**. [*MSC Conference Presented]***
- *Converted high-fidelity Adams models to Carmaker for HIL testing of ADAS features.*
- *Durability RLDA-load extraction on bushes, powertrain mounting points through WFT sensors on double pothole surface.*

RENAULT NISSAN ALLIANCE, MAHINDRA WORLD CITY, CHENNAI-603004

ENGINEER - Powertrain CAE *November 2022 – June 2024*

Vehicle Plant Model - Drivability Simulation (Renault Rafale)

- *Modelled and simulated the **e-AWD hybrid 15-DOF Cosim model** using AMESim & Simulink for various use-cases including **Constant Radius Test, Split-μ & μ-jump, DLC, banking, and different slope conditions**.*
- *Implemented **HEVC model functionalities** including Driver PID, Steering Control using MPC, All-wheel Torque distribution, ASR, ABS/ESP, and Torque Vectoring.*
- *Developed **automated pre & post-processing** procedures to analyze and export simulation results in .csv or .dat format.*

New Simulation Methodology Development - Abusive Maneuvers (Renault Rafale)

- ***Modelled driveshaft dynamics** and simulated system responses for various Abusive Maneuvers such as the **Washboard Test** on the Lardy track, **Spin Recovery, and Hard Braking** to predict driveshaft failures and improve design.*
- *Utilized Pacejka **tire modeling** techniques employing the **'Magic Formula'** to give tire parameters from tests. **MF-SWIFT tire** was used to model the enveloping behaviour of tire (Tandem Cam method) and the transient response (Fixed Relaxation length).*
- *Washboard Road – Vehicle simulation over sinusoidal road and analysing the driveshaft torque (peak torque) when road frequency matches wheel-hop frequency.*
- *Hard Braking – **ABS/VDC validation** on high-μ, low-μ, Split-μ & μ-jump Maneuvers.*

GRADUATE ENGINEERING TRAINEE *November 2021 – October 2022*

Vehicle Fuel Economy and Range Simulations

- *0D & 1D Real-time modelling of full vehicle – engine, transmission, to predict the fuel consumption for various **drive-cycles – NEDC, WLTP** etc*
- *Conducted co-simulations between AMESim and Simulink (MIL, SIL, etc.) utilizing SL2AME interface blocks.*
- *Validated conventional, hybrid (BSG, SPH, P0-P4 & Range Extender), and EV models.*
- *Designed and implemented an Energy Flow Analysis sheet for BSG architecture during driving & regen using MATLAB, and debugged post-processing m-scripts & python scripts.*

EDUCATION

MASTER OF SCIENCE (By Research) *January 2023 – Ongoing*

INDIAN INSTITUTE OF TECHNOLOGY, MADRAS, CHENNAI-600036

CGPA 8.1*

BACHEORS OF MECHANICAL ENGINEERING *August 2017 – May 2021*

ANNA UNIVERSITY, BANNARI AMMAN INSTITUTE OF TECHNOLOGY, SATHY, ERODE-638401

CGPA 8.66

SOFTWARE SKILLS

AMESIM | MATLAB | Simulink | LabVIEW | Adams | MotionView | CarMaker

Python | C/C+ | SVN | HyperMesh | MS Office | SolidWorks | PTC Creo | AutoCAD

PROJECTS

PROJECT-I | DEVELOPMENT OF LOW FLOOR E-TRUCK

DESCRIPTION: *I'm working on my project development of concept Low Floor E-Truck with Centre of Excellence for Zero Emission Trucking at IIT Madras. I'm also part of Altair E-Mobility Lab and using Altair tools for virtual product development & simulation. Developing 19Ton 2-Axle E-truck with Air Suspension. Low Floor Frame designed and performed structural analysis. E-Motor & Battery Sizing for optimal power and range. Axle with Air Suspension for better Ride.*

PROJECT-II | VISION BASED SORTING OF RECYCLABLE PLASTIC BOTTLES

DESCRIPTION: *The Project was an industrial problem, which was solved by Machine Vision and Image Processing techniques using LabVIEW software. In this automation Project, the recyclable plastic bottles were conveyed and the image was captured with an image sensor. By processing the raw images and sending the color data to the robot, the bottles were sorted based on color. Thus, the manual process of sorting was automated.*

LANGUANGES KNOWN

HINDI	ENGLISH	TAMIL
Native or Bilingual Proficiency	*Full Professional Proficiency*	*Full Professional Proficiency*

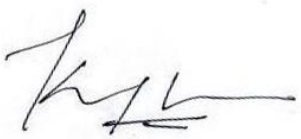
ACHIEVEMENTS

- *Virtual Damper Tuning presented in **MSC Conference September 2025***
- *Received **Employee of the Month Award** in **March-2025, October-2022 & April-2024** for my support in Drivability & Abusive Maneuvers simulation methodology development.*
- ***GATE ME 2021 & 2022** qualified.*

STRENGTHS

- *Good communication Skill in English, Hindi & Tamil*
- *Can work autonomously with minimal support.*
- *Cross-functional and can work in interdisciplinary activities.*

DECLARTION: *I hereby declare that; all the above-mentioned particulars are true and correct to the best of my knowledge and belief.*



DATE: 26-01-2026
PLACE: Chennai

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