# KALPESH P

**Senior CAE Engineer – Crash & Safety | 3+ Years experience | Euro NCAP, LS-DYNA, Pamcrash, ANSA, Meta, EV/ICE Platform.**

## SUMMARY

Experienced CAE Engineer with over 3 years of proven expertise in crashworthiness and passive safety analysis across EV and ICE vehicle platforms. Proficient in the complete CAE workflow including **pre-processing (ANSA, Hypermesh), solvers (LS-DYNA, Pamcrash), and post-processing (Meta, LS-PrePost).** Specialized in full vehicle crash simulations and injury metric evaluations. Skilled in analyzing and optimizing structures to meet global safety standards including **Euro NCAP, GNCAP, BNCAP, ECE (UN-R14, R94, R95, R135, R137, R127),** and well-versed with **FMVSS (208, 214, 301, 201, 210)** and **IIHS** protocols for global validation. Demonstrated leadership in simulation-test correlation, performance improvement, and collaboration with cross-functional design teams to enhance structural integrity and occupant safety.

## SKILLS

SIMULATION TOOLS
- LS-DYNA, PAMCRASH, ANSA, HYPERMESH, META, LS-PREPOST, PAM-VISUAL

CRASH PROTOCOLS & REGULATIONS
- EURO NCAP, BNCAP, ECE REGULATIONS, FMVSS
- ODB, SBA, MPDB, MDB, POLE, PEDESTRIAN, RCAR

FEA & CAE TECHNIQUES
- Explicit/Implicit Analysis, Time-step control, Mass scaling, Energy balance, Material modelling

CAD TOOLS
- CATIA V5, NX CAD, SolidWorks, Fusion 360

PROGRAMMING & OFFICE
- Python (basic for CAE automation), MS Office

## EXPERIENCE

07/2022 - Current ***Vehicle Crash & Safety Engineer,*** **RNTBCI, CHENNAI, INDIA**

- Executed full vehicle crash simulations including Frontal (ODB65, MPDB50, FW50), Side (MDB50, Pole29/32/45), Rear (BMR1100/1800), and Pedestrian protection using LS-DYNA and Pamcrash.
- Analyzed dummy injury metrics and implemented structural modifications to improve head, thorax, abdomen, and pelvis performance.
- Led simulation performance for Renault EV programs, aligning crash results with Euro NCAP and regulatory standards.
- Guided design teams to implement data-driven improvements ensuring optimal safety and reduced mass.
- Conducted correlation activities between test and simulation for CMFB-EV platform, improving simulation accuracy.

- Supported simulations for 6-airbag, 3-point seatbelt protocols for Indian market ICE vehicles.
- Participated in RCAR low-speed simulations for insurance cost evaluation

## EDUCATION AND TRAINING

01/2022 **Master's Certification Program**, **Manufacturing Design**
***Skill Lync***

01/2022 **M. Tech**, **CAD-CAM**
***Vellore Institute of Technology***, Vellore
GPA: 8.35

01/2019 **B.E**, **Mechanical Engineering**
***Sinhgad Institute of Technology***, Lonavala
GPA: 8.23

## WEBSITES, PORTFOLIOS, PROFILES

www.linkedin.com/in/kalpeshspatil

## CERTIFICATIONS

- Udemy Certification: A Detailed Introduction to LS-Dyna for Structural Analysis
- Udemy Certification: LS DYNA - A Simulation Training with Practical Applications
- Automotive Wiring Harness using CATIA V5
- Merit Certificate Mold Design Using SOLIDWORKS
- Geometric Dimensioning & Tolerancing using NX CAD
- Sheet Metal Design using NX CAD
- Python for Mechanical engineers
- PCSA

## ACCOMPLISHMENTS

- Led full CAE-to-physical test correlation for Renault EV crash program, covering all major crash load cases (frontal, side, rear, pole); achieved accurate prediction ratios and systematically identified root causes of deviation, presenting key CAE inaccuracy contributors to leadership for model refinement and process improvement.
- Design Challenge Event of Autodesk Fusion 360 [Rank 1]
- 2nd UG Conference in Sinhgad College [Volunteered]
- Event Head- Design Arena Competition, Pool volleyball [College Techfest]

## PROJECTS

M-TECH THESIS-
A design study on improving the specific energy absorption capacity of the honeycomb structure, The structure Drum Honeycomb 6_5_6 meets the goal of enhancing the energy-absorbing capacity of the honeycomb structure.

SET CONFERENCE PROJECT-
Optimal Assembly Sequence Generation for Deformable and Rigid Parts Product Using Stress Information Matrix, In this project the information for solving the problem of an assembly sequence of flexible assembly parts by the introduction of the Stress Information Matrix is studied.

## INDUSTRIAL PROJECTS

- Hood Design, designed car hood from reference surface which involved designing of outer panel and inner panel along with reinforcements for hinge and latch striker.
- Roof Design, Designed Car roof from input surface provided including the design of rail roofs.
- Design of Backdoor, Design of back door with inner and outer panels provided with reinforcements for hinge, Gas stay, wiper motor, and latch striker.
- Fender Design, Design of car front fender from styling surface provided.

## LANGUAGES

**Marathi**: First Language

**English**: C2

Proficient

**German**: A2

Elementary

**Hindi**: C2

Proficient