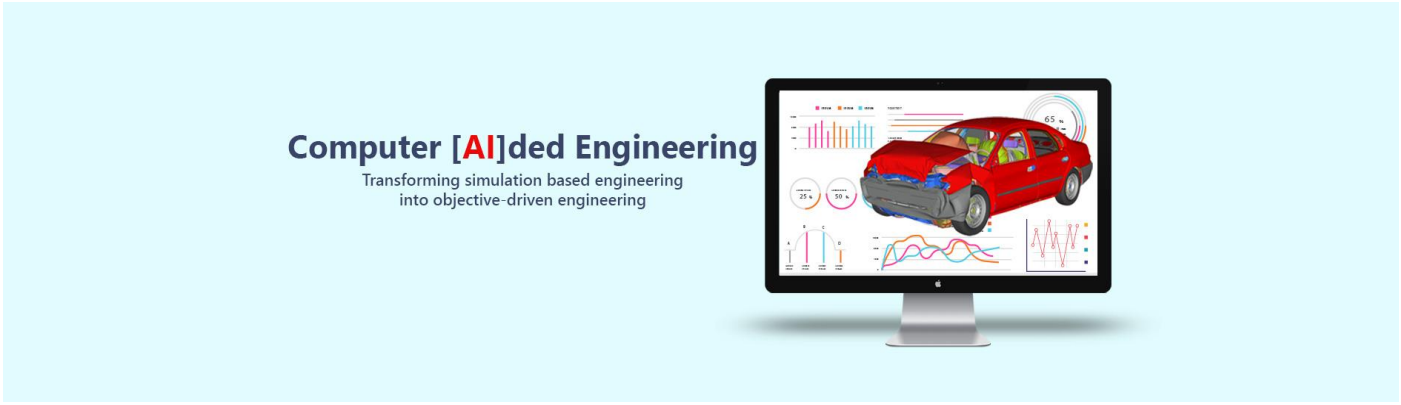
EinNel Analytics -Overcoming challenges in the automotive industry

(Albert Einstein George, CEO, EinNel Technologies)



The automobile industry has always been a source of innovation and has come a long way in recent years. Despite the innovation that has made automakers shift gears to the latest technology to meet customer demands, there still exist challenges to be overcome by automakers.

Fuel efficiency: Rising oil prices and concerns on global warming are causing regulators to continue pushing for fuel efficiency, alternative fuels, and reduced emissions. This poses a huge global challenge for the auto industry forcing automakers all over the world transition into the era of electric vehicles. In order to stimulate fuel efficiency, lightweight design and electrified power train have become important strategies. According to ASSEMBLY magazine, “Typically, a 10 percent reduction in vehicle weight can lead to an 8 percent improvement in fuel economy. However, the big challenge is to cost-effectively join dissimilar materials while meeting increasingly stringent safety and performance standards” [Weber. A, 2018].

Achieving reliability and durability for years of service under harsh automotive conditions for the advanced technology used in automobiles today coupled with automotive safety are challenges for automakers.

Manufacturing: Increasing regulatory mandates with respect to environmental and safety standards increase the cost of manufacture. Industrial robots that are widely used in automobile assembly lines for improving quality and increasing capacity, despite their advantages, come with their own sets of challenges such as cost of technology involved. The cost of implementing robots is so high that it has forced automobile companies to form joint ventures for manufacture.

The cost pressure and shifting market conditions in developing electrical, autonomous and eco-friendly cars are forcing automakers to explore optimized methodologies that reduce time & cost in product development.

Creating and testing prototypes in the design process are both time consuming and expensive. CAD and CAE systems used in automotive design generate a lot of product data that can be harnessed by simulation systems by utilising extensive data analytics.

By utilizing the power of Big Data, Artificial Intelligence (AI) and GPU computing, EinNel Analytics solutions elevate auto industries from Simulation-Driven Engineering to Objective-Driven Engineering. EinNel AI based Analytic platform gives flexibility in carrying out DoE explorations, sensitivity analysis, MOO, MDO

and reliability studies more efficiently and economically without any constraints to identify the optimal robust model.

Our Data-driven CAE simulations for crash testing, aerodynamics and fuel economy shaves years off the time it takes to develop a new vehicle, thus driving automakers to greater profitability by reducing both cost and time of product development. The automobile industry will grow at an astonishing pace when the major players realize the benefits of this data-driven approach.