

Kushal Manoj Deokar

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Career objective

Passionate towards work and believe in setting small time goals. Ability to critically analyse designs and implement ideas. Looking forward to work as a **Graduate engineer trainee** in Design and Analysis domain.

Education

(B. Tech) Mechanical Engineering, (K.J Somaiya college of Engineering -Mumbai), (72%)	(2016-2020)
HSC: Science, Birla college of Arts, commerce & science –Mumbai, (64%)	(2014-2016)
SSC, S.V.V.H.S –Mumbai, (88%)	(2013-2014)

Experience

Technical Head (Team eta : <http://www.team-eta.in/>) (2019-2020)

In my final year of B. tech, I was appointed as the technical head of our team.

Involved in validating designs by performing computational analysis and giving manufacturing approval.

Successfully managed the team of 14 members including juniors.

Team Member (2018-2019)

Joined the team as I was passionate towards cars and fascinated by the concept of building an energy efficient vehicle for a better future.

Worked in powertrain department where we designed a electric starter system for our engine and tuning the engine as per our driving condition

Team Member (2017-2018)

Team Kjsce Robocon

Gained some basic experience in designing and manufacturing techniques, to understand the work culture.

Involved in design and fabrication of manual robot and also fabricated an automated crossbow.

Projects

Turbomachinery using converge

Machines that transfer energy between a rotor and a fluid, including fans, pumps, propellers, compressors and turbines are found in many applications from different industries. Using **Converge CFD** we can predict the effects of rotating components, depending on the circumstances and the accuracy required. Some of the documented projects include.

- Centrifugal pump simulation
- Super Charger Simulation
- 2D Cavitation simulation
- Shock tube simulation
- Turbo Charger Simulation

Advanced CFD using Ansys fluent

Fluent software contains the broad, physical modeling capabilities needed to model flow, turbulence, heat transfer and reactions for industrial applications. To understand the concept and to get familiar with software some problem statements were simulated and documented successfully

- Exhaust Port
- Conjugate Heat Transfer Analysis on a graphics card
- Rayleigh Taylor Instability
- Combustion simulation
- Cyclone Separator
- Gearbox Sloshing

- Aerospike Rocket Nozzle Simulation

Advanced CFD for IC Engine

Simulating internal combustion (IC) engines is challenging due to the complexity of the geometry, spatially and temporally varying conditions, and complex combustion chemistry in the engine. With a host of tools to address these challenges, **CONVERGE** is a powerful tool for quickly obtaining accurate CFD results for your IC engine. Some documented projects include

- Emission characterization on a CAT3410 engine
- Performance characteristics of an PFI Engine
- Conjugate Heat Transfer Simulation
- Transient simulation of flow over a throttle body

Structural analysis using Ansys Workbench

Structural analysis is the determination of the effects of loads on physical structures and their components. Some of the structural analysis performed using **Ansys workbench** include

- Verification of Weld Joints
- Sheet metal Bending
- Rail wheel and Track
- Bevel Gear
- Rolling operation

B.E Project & Mega projects

Being an integral part of Team eta, B.E project topic was selected considering the team's performance in Shell eco-marathon should improve further on an international level.

A **chassis dynamometer** is a piece of test equipment fitted with rollers for the wheels of a vehicle, that is capable of providing drive input and measuring output such as power and torque at the wheels. The chassis dynamometer reproduces the load and inertia of the vehicle when driven on the road.

- Design and fabrication of Chassis Dynamo meter.
- Fine Engine tuning
- Fire hydrant system for safety of prototype vehicle
- Engine self-start assembly
- Design and analysis of sprocket

Internship

Elevation

Time period: 2 months

Software used: Solidworks & ANSYS

Major project assigned : CFD Analysis of turbine blade

(https://drive.google.com/drive/u/1/folders/1QFexQrWBekU_D7Qd50Pzrs7Fm8HKmCm)

ACCOMPLISHMENTS

Participated in Shell eco-marathon India 2019-2020

- We claim the title of **India's most fuel efficient** prototype vehicle with an average of 268.7kmpl (cash prize of 3 lac)
 - Took the lead in designing an [Automated Fire extinguishing system](#) system (won the **safety award** of 2.5 lac)
- Link for the report : ([TEAM ETA SAFETY REPORT.docx](#))

Other certifications

- Engine tuning (H.P tuners academy)
- CSWP (Solidworks professionals by Altair)