

Divij Ghose

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EDUCATION

College of Engineering, Pune

August '15 – May '19

B.Tech in Mechanical Engineering (Honors in Thermal Engineering)

CGPA: 9.29/10 (Honors GPA: 9.25)

Prof. S.R. Kajale Memorial Medallist for Best Outgoing Mechanical Student

Thesis: Numerical Pressure Prediction for Flow around a Stationary Circular Cylinder using Particle Image Velocimetry Data (under Dr. C.M. Sewatkar)

Winner, The Forbes Marshall Award for Most Outstanding Project

Two approaches were implemented successfully, for flow around a stationary circular cylinder ($Re = 100$), in Python: one by solving the Poisson equation with the appropriate boundary conditions and the other by calculating pressure gradients using Navier-Stokes' equation, followed by spatial integration. The result was validated by comparing the values of coefficients of drag and lift (obtained from post-processing) with published values.

EXPERIENCE

Bajaj Auto Ltd., Research & Development

July '19 – Present

Assistant Manager, Powertrain Design Department

- 1) Structural analysis (CAE) and design of engine components viz. crankshaft, connecting rod (fatigue FoS), cylinder block (bore distortion)
- 2) Structural design of electric vehicle components viz. Motor Control Unit, Vehicle Control Unit, Unit Interface
- 3) Automation of structural analysis (CAE) processes
- 4) Analysis and reduction of engine belly-pan noise (*Induction Project, NVH-CAE Department*)

L&T, Electrical and Automation IC

May '18 – July '18

Summer Intern, Modular Devices Unit

Kaizen based productivity improvement projects at Automation Shop, Ahmednagar Switchgear Works.

PROJECTS

Machine Learning for Test Automation

May - July '18

L&T Immersion Programme, under Mahesh Deshpande

L&T ASW

Thermal Testing and Manual Calibration of MCBs is a bottleneck in the production line. A proof of concept was developed and successfully tested for the "Automated-Late, Ok, No or Early (ALONE) Trip Tester" which used a multi-class logistic regression classifier to predict the trip condition and thus replace the physical testing, to be followed by automated calibration.

Analysis and Improvement of OEE

L&T Immersion Programme, under Mahesh Deshpande

May - July '18

L&T ASW

The causes for the low Overall Equipment Efficiency ([OEE](#)) of a Box Clamping Automation were analysed, and remedies, including design changes, were suggested. A prototype system (using the ESP8266 platform) was developed and implemented to automate the error redressal in-line with the lean manufacturing principle of *Jidoka*.

Thermodynamic Analysis and Modelling of Closed Loop Two Phase Thermo-syphon

January – April '18

T.Y. Mini-Project, under Dr. C.M. Sewatkar

COEP

First Law and Second Law analysis was carried out for a Closed Loop Two Phase [Thermo-syphon](#), to find the efficiencies at various filling ratios and heat input rates. The optimum filling ratio was experimentally determined for heat dissipation and heat recovery applications at various heat input rates.

TECHNICAL SKILLS

Strong – UG NX & Teamcenter, ANSYS Workbench and Mechanical, Altair Hypermesh, SimLab, and Hyperview , Python

Familiar – Octave, Ansys Fluent, Altair Optistruct, Ricardo Fearce

RELEVANT COURSEWORK

Fluid Dynamics – Fluid Mechanics, Industrial Fluid Power, Fluid Machinery, Advanced Fluid Dynamics (Hons.), Computational Fluid Dynamics (Hons.)

Heat Transfer and Thermodynamics – Engineering Thermodynamics, Heat Transfer, IC Engines, Modelling of IC Engines (Hons.), Energy Conversion, Refrigeration & Air-Conditioning, Advanced Heat Transfer (Hons.)

Electronics & Computer Science – Object Oriented Programming (Java), Numerical Methods & Computer Programming (C), Machine Learning for Mechanical Engineers (Python), Mechanical Measurement & Automatic Control (MATLAB), Electro-Hydraulic Systems, Industrial Automation

Design – Machine Design, Finite Element Analysis, CAD/CAM

Others – Mechanics of Composite Materials, Introduction to Nuclear Engineering

VOLUNTEER EXPERIENCE

Electronics Facilitator at The Apprentice Project

August '18 – March '20

The Apprentice Project ([TAP](#)) is an NGO that works in low-income municipal schools across Pune. As a volunteer teacher, I worked with a group of 40 high school students, teaching them basic electronics and working on projects like FM Radio Transmitter, Class Noise-Meter, Obstacle Avoiding Robot, WiFi Controlled Car, etc.