

## EDUCATION

### Carnegie Mellon University (CMU)

Master of Science in Mechanical Engineering – Research

Courses: Optimization, Machine Learning, Computer Vision, Visual Learning and Recognition, Deep Learning

Pittsburgh, PA

December 2022

GPA: 4.0/4.0

### Vishwakarma Institute of Technology (Savitribai Phule Pune University)

Bachelor of Technology - Mechanical Engineering

Class Rank: 6, out of 195 (First Class, with Distinction)

Pune, India

May 2016

GPA: 9.4/10.0

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## WORK EXPERIENCE

### Tata Technologies Limited (Client: McLaren Automotive Limited, Product Data Management Consultant)

Developer – Product Lifecycle Management (Pune, India)

July 2016 – August 2020

- Co-ordinated between teams in Woking and Pune, and consolidated Bill of Materials (BOM) Lead role for McLaren GT.
- Demonstrated domain knowledge of SAP PLM and ERP systems, PDM, BOM, Change Management, and Supply Chain and conducted Knowledge Transfer sessions in a team of 25 to support multiple New Product Introduction (NPI) gateways.
- Led a four-person team to devise and set up infrastructure for ‘Kitting’ – an exercise performed to validate and fix components list of every car being built to improve quality of build, resulting in cost savings of ~2M£ in 18 months.
- Developed and maintained reports in SAP Business Intelligence (BI) as ‘single source of truth’ to optimize data distribution.

BOM Lead (Woking, United Kingdom)

March 2018 – September 2019

- Led two vehicle programs from concept phase to series production: **720S Spider and GT**, while deputed at **McLaren Technology Centre**; Worked with cross functional teams to resolve issues in engineering, production, and supply chain.
- Generated 19 Continuous Improvement requests and provided exhaustive consultation to improve system processes.
- Trained 20 engineers in SAP PLM, working on the Tata Engineering Support Office project in Warwick, U.K.
- Oversaw automation team to streamline data checks within change management process, evaluate data efficiently using back-end data tables, and requests from marketing and after-sales, resulting in reduction of ~5000 work-hours in a year.

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## ACADEMIC PROJECTS (CMU)

### Video Upscaling Using Deep Neural Network (DNN) – github.com/JD-Kulkarni/Video-Upscaling

February 2022 – May 2022

- Built a DNN to contextually interpolate low resolution input and produce high resolution output, maintaining visual fidelity.

### Fantasy Football Team Optimization – github.com/JD-Kulkarni/FF\_Optimization

September 2021 – December 2021

- Programmed a solver to find optimal solution for Fantasy Premier League (FPL), providing user an edge over the field.

### Meat Defroster – github.com/JD-Kulkarni/Meat\_Defroster

February 2021 – May 2021

- Simulated a countertop meat defrosting device based on coupling of conduction, forced convection and phase change.

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## OTHER EXPERIENCE

### Mechanical Engineering Department, CMU – github.com/JD-Kulkarni/Meshless\_Solver

September 2021 – present

- Researching Physics-Informed Neural Network (PINN) code development for fluid flow prediction as *Research assistant* to Dr. Satbir Singh (including a Summer 2022 Fellowship). Developed a data model to solve 1D advection-diffusion and 2D steady state equations with a goal of publishing research article and building a generalizable solver for Navier-Stokes.

### Mechanical Engineering Department, CMU

September 2021 – December 2021

- Supported Prof. McGaughey with feedback and grading as *Grading assistant* in ‘Numerical Methods for Engineering’ course.

### FanTeam Focus

April 2021 – August 2021

- Co-hosted weekly YouTube streams and published periodic articles about utilizing proprietary Expected Value Data Model to make Fantasy Football decisions as *Content creator* for a Daily Fantasy Sports (DFS) website.

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## AWARDS/CERTIFICATES

Certificate of Appreciation, Head of Operations at McLaren Automotive

January 2018

‘Champion of the Month’ award, Tata Technologies Limited

April 2017

Completed level 4 examination of **Tabla** (percussion instrument)

March 2016

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## SKILLS

### Software Languages

SAP PLM/ERP  
English (Fluent)

MS Office  
Marathi (Native)

Python  
Hindi (Native)

TensorFlow/PyTorch  
German (Elementary)

ANSYS Fluent

SAP BI