



Kartavya Singh
Mechanical Engineering
Indian Institute of Technology, Bombay
Specialization: Computer Integrated Manufacturing

16D100007
Dual Degree (B.Tech. + M.Tech.)
Gender: Male
DOB: 16-02-1999

Examination	University	Institute	Year
Graduation	IIT Bombay	IIT Bombay	2021

Awarded a **Minor Degree in Management Studies** from SJMSOM (Key Courses: Finance, Operations, Strategy, PM and HR)

PROFESSIONAL EXPERIENCE

Bajaj Auto Ltd.	R&D Engineer <i>Improve Catalytic Converter Durability for BS VI Compliance</i> [May '19-Jul '19] <ul style="list-style-type: none"> Identified Critical to Quality parameters of Catalytic Converter Failure by reviewing 50+ research papers Performed a Root Cause Analysis for the failure of the Catalytic Converter by developing a Fault Tree Analysed effect of Air to Fuel & P/H ratios of catalytic cell on coating factor & emission purity using NX Proposed upgrades: Poison Capture Zone, Copper as in-cylinder catalyst & basing Rhodium on Zirconia
CAF, ISB Hyderabad	Financial Research Analyst <i>Bloomberg Market Concepts Certification</i> [Nov '18-Dec '18] <ul style="list-style-type: none"> Implemented PEAD strategy in R by calculating the Standard Unexpected Earnings of BSE listed companies Regressed on 27-variable FICO Data with 0.68 R2-score to forecast percentage loan repayment in the US Achieved a cumulative abnormal return of 17.43% over 60 trading days by back-testing the PEAD model
IIM Ahmedabad	Operations Analyst <i>Optimise Intra-Facility Movements</i> [Dec '19-Jan '20] <ul style="list-style-type: none"> Analysed the movement pattern data of 19 workers over 2 months to improve the workshop efficiency Applied data mining techniques to extract patterns of various lengths and their percentage occurrences Recommended locations to install travellers & vending machines to enhance efficiency of the workforce
Purple Finance Ltd.	Product Manager <i>Awarded a Pre-Internship Offer</i> [Mar '20-Apr '20] <ul style="list-style-type: none"> Prototyped the Lending Kit, a B2B Loan Origination & Management SaaS after extensive Market Research Integrated 20+ workflow changes in the prototype using Competitive Strength Analysis on 8 competitors Implemented Usability Testing by pitching custom Lending Kit after analysing workflow of 4 SME lenders
Jacobs Engineering	Core Consultant <i>Piping Systems</i> [May '18-Jun '18] <ul style="list-style-type: none"> Inspected the piping systems' adherence to ASME 31.3 Code by performing stress analysis on CAESAR II

ACADEMIC & COURSE PROJECTS

ML & AI	<ul style="list-style-type: none"> Sparse Neural Network Model with L0 Regularisation using NumPy and PyTorch [17, '18] <ul style="list-style-type: none"> Simulated L0 Regularisation using binary Bernoulli distributed gates to speed up the training process Image Captioning using an Encoder-Decoder Neural Net with Visual Attention using TensorFlow [19] <ul style="list-style-type: none"> Evaluated the LSTM & GRU based deep learning models on speed & accuracy of the generated captions Dynamic Traffic Signal Control by transfer learning pretrained YOLOv3 on traffic video footage [19]
Master's Thesis	<ul style="list-style-type: none"> Optimum Process Planning for Additive Manufacturing using Machine Learning [Aug '20-Present] <ul style="list-style-type: none"> Exploring ML algorithms like Neural Network, SVM on CAD data to reduce build time for Rapid Prototyping
Finance	<ul style="list-style-type: none"> Analysed Financial Report of Adani Power Limited using Current ratio, Quick Ratio, ROA, ROE [17]
Mechanical	<ul style="list-style-type: none"> Led a team of 10 to fabricate an Automatic Drainage Cleaner prototype within a budget of INR 15k [19]

LEADERSHIP ROLES

Sports Nominee	Hostel 7 <i>Awarded Organisational Special Mention (3 out of 200+ students)</i> [Jun '18-Apr '19] <ul style="list-style-type: none"> Led a 2-tiered team of 13 members Instrumental in elevating Hostel Culture by organising Intra-Hostel events Countered a 75% workforce reduction by devising strategies for effective execution of sports activities Administered meticulous allocation of INR 1.4 lakh to manage sports equipment & organise tournaments
Junior Design Engineer	IIT Bombay Racing <i>Subsystem: Brakes</i> [Jun '17-Mar '18] <ul style="list-style-type: none"> Part of a 55-member design team 7th out of 23 international teams at FSUK at Silverstone circuit Involved in assembling of the car; developed carbon fibre fabrication of bodyworks; modelled the brakes
Teaching Assistant	<i>Course: Computer Graphics and Product Modelling under Prof. S. S. Pande</i> [Aug '20-Present] <ul style="list-style-type: none"> Responsible for evaluating software course projects and conducting viva for a batch of 40+ students

ACHIEVEMENTS & EXTRA-CURRICULARS

Scholastic	<ul style="list-style-type: none"> Among top 35 across India to attend selection camp for International Junior Science Olympiad (IJSO) [14] AIR 856 in JEE Advanced '16 & 1024 in JEE Mains '16 NTSE '12 Scholar (AIR 35) KVPY '14 Scholar Ranked among top 300 students in national Olympiads: INJSO '13, INJSO '14, Jr. INAO '14 and INPhO '16
Sports	<ul style="list-style-type: none"> Awarded Hostel Sports Special Mention (3/200+) [18, '19] Tata Mumbai Full Marathon Finisher [19, '20] 3rd position, 400m Hurdles [18] 3rd position, Inter Hostel Football GC [18] Part of IIT Bombay Athletics Team [18, '19] IIT-Bombay Half Marathon Finisher [18, '19] 2nd position, Relay 4*400m [16, '17] Top 5 in Freshmen & Sophomore Crossy [16, '17]
Finance	<ul style="list-style-type: none"> Quantitative Research Consultant at WorldQuant LLC; Identified Alpha Signals in WebSim [19] Underwent 4-month training program on Introduction to Quantitative Trading Strategy by Auquan [19]
Social	<ul style="list-style-type: none"> Linear Model for optimising Drip Irrigation Water Usage in Talasari Course Project, CTARA [20]
Technical	<ul style="list-style-type: none"> 3D Laser Hockey ITSP '17 Line Follower Bot STAB '17 RC Plane Aeromodelling Club '16
Courses	<ul style="list-style-type: none"> Deep Learning Specialisation by deeplearning.ai Reinforcement Learning Explained by Microsoft