Nishant Kumar

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Mechanical Engineer

Having around 5 years of Industrial Experience across sectors; Auto-Ancillary, Special Purpose High Tech Machinery, Semi-conductor, Engineering Consulting,Industrial Equipment & Plant Engineering in Operations Management (Product & Process Engineering) across India, Germany & The Netherlands.

On the Professional level – Likes to solve problems, can complete work in a logical, systematic, accurate manner to reach the solution. Out of box thinking, very creative; futuristic view with a customer friendly & global market-oriented mindset, calculates risks and weighs all sides of a problem. As a team member, is loyal and committed to an organization.

Skills & competences

-Supply Chain & Operations Management, Helicopter view on things.
-Project Engineering & Management, Customer Requirement Analysis
-Design & Analysis of Hi-tech, Precision component, Special Purpose Machinery
-Experience in Change Management, Benchmarking, Pre Sales & Post Sales Support
-Industry 4.0- Blueprinting, System Architecture & Implementation.
-Product Development & Engineering- Product Design CAD & CAE (CFD, Thermal,Static FEA)
-Process Development & Engineering- Design & Process FMEA, Root cause Analysis.
-Engineering tools: FMEA, DFM, DFA, APQP, TPD.
-Product Lifecycle Management
-Quality & Test Planning.
-Technology Scouting
-Application Engineering

Application software

-Computer Languages- C, python (Beginner)
-Mathematical software- Matlab (Beginner)
-Mechanical CAD packages- Catia, Solidworks, Unigraphics Nx, AutoCAD
-Mechanical FEA Packages- Hypermesh, Ansys Mechanical, Spaceclaim
-CFD Packages-Ansys Fluent, Star CMM+, Ansys CFX

Education

May 2012- March 2018
M.Sc Mechanical Engineering (Computational Mechanics & Mechatronics)
University Duisburg Essen, Germany
Final Degree not obtained

June 2006-July 2010
B.E (Bachelor's Degree) Mechanical Engineering
University of Pune, India

Work Experience

January 2019-Present
Maruti Hydraulics Pvt Ltd,Nasik India/Project & Design Engineering
Task/Responsibilities:
-Leading Design Department & reporting to Operations Director.
-Bringing Standards in Engineering Department.
-Project Engineering,Plant Layouts.
-Pre Sales,Post Sales Engineering & Application Support.
-Special Purpose Machine Development,Design& Vibration Analysis,CFD analysis.
-BOM Generation & Procurment.
-Change management & Benchmarking.

June 2018- December 2018
Kupfersmittel India Pvt Ltd, Nasik India/Engineering & Technology Consultant(Freelance)
Tasks/responsibilities:
-Research & Product Development for New Product for Electrical Industry; International Market Surveying, 3D CAD & FEA Analysis
-Process Development-Benchmarking, Defining SOP, Technology Scouting.

December 2017-January 2018
Segula Technologies B.V, Netherlands/ Design & Analysis/ Analysis Engineer
Tasks/responsibilities:
-Requirements Analysis.
-Project Related to CFD for Wind turbines.Analysis for cooling of internal parts of wind turbine(internal & external flow patterns) as well optimization of design for better effeciency.
-Thermal Analysis Simulation for ASML.Supported Controls Engineer by giving thermal analysis FEM results for better temperature control on Heat shield.
-Mechanical Concept Design for tooling in 3D & 2D Unigraphics NX (Precision Mechanics for High Tech Industry) and Technical Product Documentation(TPD) Creation for partners of ASML.

July 2017-November 2017
Segula Technologies Gmbh, Germany/ Design & Analysis/Analysis Engineer
Tasks/responsibilities:
-Project Related to CFD for Wind turbines
-Thermal Analysis Simulation for High precision mechanics

July 2016-May 2017

Nordson Corporation Gmbh (Industrial coating division),Germany/ Project Engineer

Tasks/responsibilities:

Engineering Support to Operations Management,Improvements,Process,Engineering & Development. Responsible for managing multiple parts of projects at any one time, around the world.Customers (mainly German speaking & European customers) ranging from Aerospace,Automotive,Mechanical Machinery etc.

- Product development/Bench Marking, Scheduling of the Sales process.
- Design, Calculation & Analysis.
- Troubleshooting.
- Quality & Test Planning.
- Operations Management.
- Industry 4.0-Industrial Internet of Things.
- Application Technology & Engineering.
- Technical Analysis.
- Training & Presentation for Installation
- Project Engineering & Management

Product Development
-Requirements analysis, Application Engineering
-Technology Scouting for Industry 4.0.
-Calculation,3D Modelling,Prototyping,Testing.
-Creation of Bill of materials(BOM).
-Coordinating between Engineering & Purchasing for transition from Engineering drawing board to Final Product assembly.
- Controls Engineering
- Machine Design Selection & laying of criteria

Improvements
-Design & Process FMEA
-Root Cause Analysis
-Problem Solving

General Management & Project management
-Quality Documentation-Quality Inspection Plan reports generation.
-Customer Sales presentations
-Customer training Presentations.
- Procurement & Purchasing

Product Installation.
-Creation of pneumatic assemblies,Structural assemblies.

Jan 2014-July 2014

ASML/ Electronics Development & Services Department/ Internship
Tasks/responsibilities:
Root Cause Failure analysis(Fatigue Failure Analysis) of Flexible printed circuit board (Design FMEA)& Its lifetime predication using excel based tool. The internship involved extensive research for calculation of fatigue lifetime of sandwich composite material with hands on calculations for concept generation, creation of self- executable tool in MS-Excel with validation from Simulation Models. Recommendation of tests setup for practical verification.

Sept 2010-May 2011
Mungi Group/ Management/ Trainee Engineer Management
Tasks/responsibilities:
-Improvising the productivity of production line as a Process Engineer. Usage of FEA for cost saving of company. in depth root cause analysis/failure analysis of quality related issues & respective action plans, new fixture concepts, making worker skill matrix.
-APQP & Quality Management-ISO 9001 standards.
-As a team of Operational Research had to carry on Time motion study, Continues Process improvement & modification of Welding shop(Spot welding of sheet metal) & Press Shop(Sheet metal).
-Implementation of basic project management trainings, Actual Layout activities of Automotive Chassis Line. Process FMEA.

November 2009- June 2010
Fortuna Engineering Pvt Ltd/ Development & Engineering/ Bachlore Thesis
Tasks/responsibilities:
Design Automation & Manufacturing of Fixtures of Connecting rods for Vertical Milling Machine.
The project aimed at increasing the productivity & decreasing worker fatigue by means of new concept , designing of fixture & validating design in Catia V5.The project also involved designing a retrofit hydraulic automation of the fixtures.

Languages

English	: Business Fluent
German	: Intermediate B2 Level
Hindi	: Mother tongue
Marathi	: Mother tongue
Bengali	: Beginner

Achievements **:** Erasmus Mundus scholarship for Non-Eu students, Germany

Hobbies : Cooking, Music, Sports

Projects

Segula Technologies-Analysis/Mechanical Engineer
Project: Development of Tooling for High tech precision component(indirectly for ASML)
Task: Requirements Analysis,Concept Development,Calculations
Result: Gave concepts for new tooling required for High precision component

Segula Technologies-Analysis/Mechanical Engineer
Project: Thermal Analysis support for Control Engineer
Task: Performed Thermal analysis for ASML part using Ansys Thermal
Result: Performed Thermal Simulations & gave results to Control Engineer for futher control of ASML part.

Segula Technologies-Analysis/Mechanical Engineer
Project: CFD analysis for Wind Turbine
Task: Performed CFD simulations in Ansys Fluent for wind Turbine
Result: Performed CFD Simulations & worked on different cases & gave results for post processing for optimatization of wond turbine working conditions.

Nordson Corporation, Engineering-Project Management
Project: New Nozzle for Cleaning Application-BMW
Tasks: Solving the problem for More Noise of nozzle cleaning application
Results: Selection of new nozzle system for Customer Application
Responsibilities:
- Market Survey
- Calculations
- Costing
- Testing

Nordson Corporation, Engineering-Project Management
Project: New Product Development- Hopper & Fluidization Mechanism-OBUK
Tasks: New Product Development
Results: New Product Development. Project Engineering & Management
New concept generation for automation of fluidization process in

accordance with industry 4.0.
Responsibilities:
-Solidworks 3D
-Creation of BOM
-Cost analysis
-Releasing Drawing for Manufacturing
-Testing
- Handover to Customer
- Project Management

Nordson Corporation, Engineering-Project Management
Project: Implementation of Industry 4.0
Tasks:- Implementation of Industry 4.0(Industrial interent of things) in Nordson Industrial coating system.
Results: Making system smart
Responsibilities:
-Blueprinting of process
- Technology Scouting
-Making system smart

Nordson Corporation, Engineering-Project Management
Project: Root Cause failure analysis of Adhesion of Gasket
Tasks: Problem Solving of Failure of Gasket Adhesion on Industrial Cyclones.
Results: Problem Solved
Responsibilities:
- Calculations of Industrial Cyclone design
- Design Analysis
- Material Analysis
-Adhesives
- Gaskets
- Testing

Nordson Corporation, Engineering-Project Management
Project: Thermal Analysis of Nordson Part-ThyssenKrupp
Tasks: Problem Solving
Supporting Engineering Team,Sales team to negotiate with Customer ThyssenKrupp.
Results: Problem Solved & a material must be Changed thereby increased in cost.

Responsibilities:
-Requirements Analysis of Customer & Operations team
- Calculation
-Analysis in Open Source software for Thermal Analysis.
Supporting Engineering Team,Sales team to negotiate with Customer ThyssenKrupp.
- Failure of Material under specific Thermal Conditions

Nordson Corporation, Engineering-Project Management
Project: Structural Assembly of Cleaning Mechanism
Tasks: Structural Assembly of Cleaning Mechanism for various Nordson Customers
Results: Delivered Mechanisms to various Customers across the world
Responsibilities:
-Generation of Bill of Material- Drafting in Solidworks
- Purchasing
- Defining Operating Procedure for assembly of pneumatic mechanism
- Assembly with Hands.

Nordson Corporation, Engineering-Project Management
Project: Machine Layout Drawings & Vibration /Noise measurement-Scania
Tasks: Machine Layout Drawings & Vibration /Noise measurement
Results: Delivered Plant layout drawings for Installer to install machine & as well as helping Process Manager to maintain documentation for machine specification.
Responsibilities:
-Creation of 3D drafting of Machine & playout in Solidworks.
- Measurement of Noise & Vibration of Nordson Machine at Scania
- Selection of Proper instrument for selection of Measurement.
- Definition of Measurement points.

ASML

ASML, Internship- Electronics Development & Services.
Project: Failure Analysis of Flexible Printed Circuit Boards & effects on Lifetime
Tasks: Predicting fatigue lifetime of Flexible printed circuit Boards & Development of Excel based tool to calculate it.
Results: Delivered Root cause analysis results which were used in creation of excel based tool to calculate fatigue lifetime.
Responsibilities:

Predicting fatigue lifetime of Flexible printed circuit boards,Electronics Development,Failure analysis of Flexible printed circuit board(FPCB'S) comprising of Fracture Mechanics,Composite Materials & Detailed Stress analysis,fatigue & crack analysis.PCB Technology,Fatigue analysis. Reliability Engineering,Electronics Design & Development Services,Root cause analysis.
With Hands on calculations & validation by FEA structural simulations in Abaqus & Fatigue simulations in Ansys/Comsol. Ability to work in Multi Culture working atmosphere & in cross functional expertise domain between various departments of Research & Development departments.Creation of self executable excel tool for calculation of Lifecycle of FlexPCB's.Elastic & Viscoelastic effect in Composite materialsRheological materials models & Stress calculations for Composite materials.

Mungi Group, Trainee Engineer-Management
Project: Process Improvement of Mahindra's newly awaited Cargo.
Tasks: Process Engineering
Results: Improved working conditions, Increase in Production
Responsibilities:
- Worker skill matrix
- Root cause analysis
- New fixture concepts

Mungi Group, Trainee Engineer-Management
Project: Process Improvement
Tasks: Improve the productivity of Production line of BIW assembly parts
Results: Improved working conditions, Increase in Production
Responsibilities:
The Project was aimed to improve the productivity of production line by implementing continual improvement techniques; the job included concept generation of BIW fixtures, fixture design & implementation.

Fortuna Engineering Pvt Ltd, Bachlore Thesis
Project: Design ,Automation & Manufacturing of Fixtures of Connecting rods
Tasks: Improving production condition & producivity.
Result:- New design & retrofit of Hydraulic systems helped for more improved conditions.
Responsibilities:
The project aimed at increasing the productivity & decreasing worker fatigue by means of new concept & designing of fixture , validating design in Catia V5.The project also involved designing a retrofit hydraulic automation of the fixtures

Academics Projects

UNIVERSITÄT DUISBURG ESSEN
Offen im Denken

1) Project- NUMERICAL INVESTIGATION OF GENERIC CAR FORMS USING STAR CMM+
   Investigations to find out about the influence
   of the windshield installation angle (α_front) as well as the tail end installation angle.
   Star CCM+ as used.

2) Project-Perform the simulations for two different turbulence models in Ansys CFX
   Performing the simulations for 2 different turbulence models k-omega & SST in Ansys CFX & thereby determining the turbulence nature of the flow of fluid in post processing results.Turbulent flow models K-omega & SST comparison in a flow through pipe with a submerged object in a flow field.

3) Bio Fluid Mechanics-Fluid Structure Interation(FSI) projectwork in Ansys
   A FEA as well as CFD analysis was done on artery of human body thereby computing the results using Ansys WorkBech,Ansys ICEM & Ansys CFX as Solver.

4) Multi-Scale Simulation of Viscoelastic Fiber-Reinforced Composites
   A scientific critical review of the topic "Multi-Scale Simulation of Viscoelastic Fiber-Reinforced Composites" & its presentation in Latex.The scientific paper involves a critical scientific review of existing scientific paper.

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5) Robotics Event
   Design, Construction of Robot
   Participated in Event of Robotics on behalf of University Duisburg Essen for event in Netherlands.

   http://www.ccm.nl/en/trophy/ccm-trophy-2014.html
   http://www.ccm.nl/nl/trofee/ccm-trofee-2016/ccm-trofee-2016.html