Meet Trivedi

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Education

Northeastern University (NEU), Boston, MA **Jan 2018 – Aug 2020**

Master of Science in Mechanical Engineering

Gujarat Technological University (GTU), Ahmedabad, India **July 2013 – May 2017**

Bachelor of Science in Mechanical Engineering

Skills

Software: SolidWorks, AutoCAD, ANSYS, MATLAB, Simulink, Minitab, Maple, MS Office, Siemens NX, Tableau, Visio, SolidWorks PDM

Functional: GD&T, Tolerance Stack, DFMA, Lean Six Sigma, Injection Mold Analysis, FEA, GMP, ISO 9001, ISO 13485, Statistical Analysis, FMEAs, Verification and Validation, Gage R&R, Stress Analysis, DOEs, Shopfloor Optimization, CFD, Product Development

Hands-on: CNC Mill, Lathe, ProtoTrak, Rapid Prototyping, 3D Printing, Welding, Sheet Metal, Instron, MicroVu Precision Measuring

Work Experience

Abiomed, Inc., Danvers, MA **July 2019 – Dec 2019**

Mechanical Lifecycle Engineer Co-op

- Designed 2 portable pressure vessel assemblies from scratch using DFMA principles and increased heart pump testing capacity by 10 times
- Developed DOEs, performed feasibility study and Gage R&R on automation fixture and reduced measurement variation from 12% to 6.5%
- Fabricated fixture components in machine shop using lathe, mill and reducing overall lead-time and outsourcing cost by 50%
- Performed FEA analysis, FMEAs and conducted user, safety, ergonomic studies and reduced risk factors on new automation fixture
- Documented 20 plus work instructions, engineering summaries, design reviews, meeting minutes, BOMs, SOPs, EQs, IQs and DOEs
- Implemented new methods to improve bond strength of medical device disposable components and improved shelf life by 100%
- Reduced assembly process time by 50%, eliminated operator dependency and increased total component assembly per shift by 1.5 times

Ashima Group, Ahmedabad, India **April 2018 – Aug 2018**

Manufacturing Intern

- Improved the production capacity by 3% by reducing product transit time within shop floor, simplifying flow and functionality using AutoCAD
- Decreased equipment idling by 20% using kitting and implementing workstation readiness between shifts making it easy for operators
- Updated more than 10 work instructions, performed equipment qualification and assisted in operator training on machines
- Maintained documents, conducted process studies and root cause analysis (RCA) to achieve and maintain high quality on critical workstations
- Monitored weekly production and analyzed machine logs to visualize idle time, efficiency and reduced wait time by 6 seconds per product

Windsor Machines, Ahmedabad, India **July 2016 – Dec 2017**

Mechanical Engineer

- Calculated tolerance stack analysis on components of size injection molding machines for accurate assembly and reduced rework by 70%
- Communicated with suppliers for engineering changes and updated designs, drawings, and documentation in PDM system
- Executed troubleshooting on 4 injection molding machines daily on average and documented the component failures
- Analyzed 50 plus mold tools and improved performance by reducing weld points, short shots, excessive temperature and pressure, etc.
- Fabricated sheet metal enclosures and housings for electromechanical components and assured assembly fit

Projects

Resizable Bottle Design – Product Development **Jan 2020 – Apr 2020**

- Designed, developed and prototyped leakproof, reusable and resizable container resizable to 49% of original size and reduces footprint
- Optimized design by performing mold and tolerance analysis and reducing assembly components and making product intuitive
- Researched for patents, current competitors and kept overall cost of product ($20) below currently available solutions in market

Segway Control System Design – Control Systems Engineering **Jan 2020 – Apr 2020**

- Assessed stability of governing dynamics in MATLAB and performed RHC and Root Locus Analysis to determine and optimize PID gains
- Defined 2 PID controller and High-order lead compensator to stabilize the system and analyzed the system using Simulink and MATLAB
- Slashed settling time (0.6 sec), % overshoot and overall response time by designed a robust control system for varying loads

Small Scale Wind Energy Feasibility – Renewable Energy **Jan 2017 – May 2017**

- Modeled parts of Vertical (VAWT) & Horizontal (HAWT) axis wind turbine in SolidWorks using standard airfoils (NACA 4412) and materials
- Completed flow simulations on each turbine and computed torque & power generated on turbine shaft in 4 - 10 m/s wind speed in ANSYS
- Compared efficiency and feasibility factors giving best solution for wind power extraction in an urban settlement over a span of 1 year

Solar Powered Laptop Charger – Portable Charger **Aug 2016 – Dec 2016**

- Constructed an affordable and foldable fixture for a solar panel of 12V 20W for reducing the overall size of portable charger
- Used solar charge converter to convert the solar energy to useful electrical energy for charging laptop
- Saved energy using a 12V 4ah battery and converted energy through an AC Inverter to usable power to charge laptop

Multi-finger Hook – Product Design **Jan 2016 – May 2016**

- Designed a plastic made multi-finger hook to carry multiple grocery/shopping bags using SolidWorks and conducted stress analysis
- Improved component by minor design changes and achieving the load capacity of 100 kg with a safety factor of 1.5