VATSAL SHAH

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EDUCATION

MICHIGAN TECHNOLOGICAL UNIVERSITY *Houghton, MI*
Master of Science in Mechanical Engineering; Major in Design and Manufacturing *Sep 2018 – May 2020*
- Cumulative GPA: 3.85/4.0
- Indian Students Association (Board Member), Leaders in Continuous Improvement (Member)

JAIN UNIVERSITY *Bengaluru, INDIA*
Bachelor of Engineering in Mechanical Engineering *Aug 2012 – Jun 2016*
- Cumulative GPA: 8.54/10.0;
- Ranked Top 6 (out of 98 students)

EXPERIENCE

SEAGRAVE FIRE APPARATUS *(Emergency Vehicles Manufacturing)* ***Clintonville, WI***
Manufacturing Engineering Co-op, Process Improvement *Jan 2020 – Aug 2020*
- Designed a template for affixing logo on front grill, leading to 75% reduction in grill assembly time and saving money by due to reduction in scrap.
- Designing fixtures for robotic weld using SolidWorks, transferring 300 hrs of manual welding time to Robotic Weld.
- Daily accounting of all scrap produced and implementing Root Cause Analysis to reduce scrap parts produced by implementing process improvements.
- Implementing Root cause analysis to identify delay in production and assembly using time studies of each station.
- Automated Datasheet for analysis and calculation of DART Incidents, TRIR Incidents using MS Excel.
- Redesign and relocate the location of Gas Cylinder storage area using AutoCAD for easy handling and quick movement of gas cylinders to and from all welding stations.

MICHIGAN TECHNOLOGICAL UNIVERSITY ***Houghton, MI***
Teaching Assistant, Physics Department *Aug 2019 – Dec 2019*
- Handle class of 18 undergrad students to conduct Physics Lab.
- Gave a basic introduction to the experiment being conducted and answered all queries in class.

COGNIZANT *(Consultation Firm)* ***Mumbai, INDIA***
Design Engineer, Engineering Department. *Jul 2016 – Mar 2018*
- Worked in team of 4 members for Design Improvements and Cost Reduction.
- Update 3D Solid models of solid and sheet metal applications based on old drawing files using CATIA and SolidWorks.
- Implemented and suggested design modification based on CAE analysis using ANSYS.
- Acted as Team Leader for 4 months, looking over all operations and training new hires about the process flow and basics in CAE.
- Assisted Team Supervisor during communication with clients.
- Worked with collaboration of multi-disciplined team of Industrial Engineers, Manufacturing Engineers.

ACADEMIC PROJECTS

Additive Manufacturing ***Houghton, MI***
Michigan Technological University *Jan 2019 – Apr 2019*
- Designed Single Cylinder Air Powered Balloon Car and manufactured using Additive Printing.
- Tools Used: SolidWorks, Ink-Jet 3D Printer.

Improvement of Paper Airplane Manufacturing Process Simulation ***Houghton, MI***
Michigan Technological University *Jan 2019 – Apr 2019*

- Lead a team of 5 members and Implemented Kaizen and pull system on mass production simulation of paper airplanes to reduce the lead time by 53%.
- Lean Tools implemented: Visual Control, Visual Stream Mapping, Poka-Yoke, Line Balancing, Standardized Work Documents, and One-Piece Flow.

Experimental Validation of Octet Truss Lattice (Ti-6Al-4V) ***Houghton, MI***
Michigan Technological University *Nov 2018 – May 2019*

- Designed Unit cell of Octet Truss Lattice in Catia V5 using known data.
- Successfully achieved 74% accuracy for results obtained from simulation of compression test carried out by Dr. V Deshpande on Octet Truss using Abaqus.

Elastic FEA analysis of a double edge notched specimen ***Houghton, MI***
Michigan Technological University *Jan 2019 – Mar 2019*

- Compare the stress intensity factor results for a given specimen using FEA and compare with theoretical results.
- Obtained 98% accurate results by comparing obtained data to theoretical results by using Solidworks and Abaqus

Tribological Evaluation of Grease ***Bengaluru, INDIA***
Indian Institute of Science *Jan 2015 – Mar 2016*

- Compared data on Wear Scar diameter and Coefficient of Friction of 3 Vegetable and 3 Petroleum oil-based grease samples by subjecting them to 4-Ball Tester.
- Achieved physical properties of vegetable-based oil grease similar to petroleum-based oil grease thereby obtaining eco-friendly substitute.

2-Directional Torch with 3D ***Bengaluru, INDIA***
IAM3D Challenge (ASME) *Feb 2015 – Jul 2015*

- As team lead of three-person team, laid out path for project from design to submission of proposal for this competition.
- Worked as a team to research on the product, brainstorming for alternate design and finally prototyping the final product.
- Tools used – CATIA V5, 3D Printer (3DINNOVATIONS)

SKILLS

CAD/CAE: SolidWorks, Siemens NX, CATIA V5, AutoCAD, Autodesk Inventor, Abaqus, ANSYS.
Manufacturing: 5S, Lean Manufacturing, Kanban, Time Studies, Visual Stream Mapping, CNC Programming (Siemens and Fanuc, G M Code), Metrology.
Software: MS Office, Intermediate level Excel, C Programming, SQL, MATLAB, Minitab.

CERTIFICATION

Lean Six Sigma Green Belt – *Management and Strategy Institute*
IAM3D Challenge Finalist – *ASME (2015)*
Production Engineering – *Indian Machine Tools and Manufacturers Association*
ISO 9001:2015 Quality Management System – *Udemy*
GD&T and Stack-Up (Basic to Expert Level) – *Udemy*