**VATSAL SHAH**

Houghton, MI | P: +1 (906) 231-5152 | [vatsals@mtu.edu](mailto:vatsals@mtu.edu) | [linkedin.com/in/shah-vatsal/](https://www.linkedin.com/in/shah-vatsal/)

**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 3 (out of 75 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 90 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 TECHNOLOGY SOLUTIONS** *(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*