

UTKARSH SINGH

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EDUCATION

Northeastern University Boston, MA	December 2024
Master of Science in Mechanical Engineering	
Relevant Coursework: CAD and Manufacturing, Additive Manufacturing, Advanced Mechanics of Materials	
Vellore Institute of Technology (VIT University) Vellore, India	May 2021
Bachelor of Technology in Mechanical Engineering	
Relevant Coursework: Machine Drawing, Design of Machine Elements, Mechanics of Machines	

SKILLS & CERTIFICATIONS

Software: SolidWorks, ANSYS Workbench, ANSYS Fluent, ANSYS Additive, AutoCAD, Fusion 360, Catia, MATLAB, Prusa Slicer, Adobe Illustrator, Adobe Photoshop

Manufacturing: Lathe Machining, CNC Machining, VMC Machining, TIG Welding, MIG Welding, Waterjet Machining, laser cutting, FDM & SLA 3D printing

Other Skills: GD&T, MS Word, MS Excel, MS PowerPoint, Product Design, Rapid Prototyping, Tool Design

Certifications: Certified SOLIDWORKS Associate (CSWA), Certified SOLIDWORKS Professional (CSWP)

WORK EXPERIENCE

FALCON STERILE AUTOMATIONS, INC.	Cambridge, US
Mechanical Engineering Intern	August 2023 - January 2024
<ul style="list-style-type: none">Developed a prototype for an on-site drug manufacturing machine, that could potentially reduce transporting and storage costs, enable customized medications, and reduce the risk of counterfeit drugsDesigned pick, place, and fill system using Solidworks incorporating Universal Robots and gantry system for automationMastered operation of 6-axis Universal Robots enhancing automation capabilities for diverse tasksConducted CFD analysis to optimize airflow in clean room environment, eliminating cross-contamination risksDesigned machine components using Solidworks and created corresponding 2D drawings following GD&T principlesEmployed FDM and SLA 3D printing for component fabrication	

MAXIMA STEAM WORKS	Pune, India
Mechanical Engineer	October 2021 - August 2022
<ul style="list-style-type: none">Designed 60+ products including steam traps, control valves, piston valves, and other steam-related equipment, significantly expanding the product portfolio and enhancing market competitivenessUtilized SolidWorks to design Steam Systems, and created corresponding 2-D drawings using GD&T principlesImplemented design modifications, that enhanced performance, improved safety, and reduced weight, resulting in lower manufacturing and material costs, and extended product lifeAssembled and conducted testing of steam traps and valves, ensuring product reliability and safety	

PROJECTS

Design and fabrication of camera mount Northeastern University	February 2023- March 2023
<ul style="list-style-type: none">Designed a height-adjustable camera mount with a 30-50mm range without fasteners enhancing product durabilityDeveloped a prototype capable of supporting lenses over 2kgs, using FDM 3D printing ensuring product robustnessOptimized 3D printing settings, using 1% dimensional adjustments and 30% infill density for increased strengthMinimized print time with strategic orientation and 0.3 mm layer height to balance quality and efficiency	
CFD Analysis of evacuated tube solar water heater with carbon nanotubes	December 2020- April 2021
<ul style="list-style-type: none">Utilized SolidWorks to model an evacuated tube solar water heaterEvaluated the effectiveness of carbon nanotubes in improving efficiency of the solar water heater using CFD analysis	
Testing of an All-Terrain-Vehicle Team Jaabaz	December 2017- May 2019
<ul style="list-style-type: none">Designed, manufactured and tested a 2WD drivetrain system used by Team Jaabaz in the 2019 BAJA SAE competitionRanked 4th in sales, 12th in cost, 22nd in design presentation, and 28th in maneuverability amongst 120+ teamsConducted real-life assessment, including a 10ft drop test, a ramp test, and 200+ hours of testing over 2 yearsFabricated the entire chassis and mounts, including the engine and gearbox mounts, using TIG welding	