RICHAL BALASAHEB ABHANG

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EDUCATION

University of Pennsylvania, Philadelphia, USA
Master of Science in Engineering, Mechanical Engineering & Applied Mechanics Aug 2022-Present
Started Fall 2022 Semester
Courses: Advanced Dynamics, Design of Mechatronics System, Foundation of Engineering Mathematics-1

Savitribai Phule Pune University, Department of Technology, Pune, India
Master of Technology in Mechanical and Materials Engineering| CGPA: 9.28/10.0 Jan 2021-Jul 2022
Courses: Advanced Thermofluids-1, Advanced Refrigeration, Advanced Stress Analysis, Nanotechnology, Smart material

Maharashtra Institute of Technology College of Engineering (MIT COE), Pune, India
Bachelor of Engineering in Mechanical Engineering| CGPA: 8.02/10.00 Jul 2015-May 2019
Courses: Fluid Mechanics, Thermodynamics, Applied Thermodynamics, Heat Transfer, Refrigeration & Air Conditioning

SKILLS

CAD Modelling Software: SolidWorks, Fusion 360, AutoCAD, CATIA
Analysis Software: Matlab, COMSOL, ANSYS, GMAT, WIPL-D, Qblade, GRASS GIS, X'pert
Languages: Python, C++, C, HTML
Other skills: GDnT, Machining, Wind tunnel testing, Welding, Optical Metallography, SEM, Mechanical testing, HVAC

EXPERIENCE

Sung Robotics Lab, GRASP Laboratory, University of Pennsylvania, USA
Research Assistant, MEAM Robotics Sep 2022-Present

- Helping research in tuneable compliance manipulator in design and material selection aspects under soft robotics

Characterization of Stainless Steel (SS) 316 at Cryogenic temperatures, VIT Pune, India
Research Student, Materials Engineering department Sep 2021-Jul 2022

- Performed tests like tensile, impact, XRD, SEM, hardness, and optical microscopy to compare different properties of SS 316 at room and cryo temperatures. A few samples were annealed at high temperatures and then cryo-treated to compare properties

Inter-University Center for Astronomy and Astrophysics (IUCAA), Pune, India
Research project student, LIGO-India Jun 2019-Jul 2022

- Designed and built Single-stage Suspension Training Module based on HAM AUX
- Generated Analytical model in MATLAB for Folded Pendulum low frequency monolithic horizontal Seismometer; developed CAD (SolidWorks 2021) and FEA model (COMSOL) and assembled it with sensors
- Worked on the effects of thermal noise of materials for the flexures acting as springs on the performance of Folded Pendulum low frequency monolithic horizontal Seismometer

Kick Robotics, USA
Remote Mechanical Intern Oct 2020-Nov 2021

- Devised mechanisms for robots assigned with different tasks and challenges
- Developed CAD models that get 3D-printed and designed the robots by selecting different materials to make them work in different environments and various ranges of temperatures

PROJECTS

Design of Cold Storage for storing Meat| ***Advanced Refrigeration student*** Jan 2021-Jun 2021

- Performed heat calculations for the cold storage of meat; designed the facility and HVAC system for cold storage

PromoMoon Initiative| ***Thermal Engineer*** Dec 2020-Dec 2021

- Developed volatile extraction technology on planetary surfaces, performed calculations & CFD for heat transfer
- Our team of two students, team VEPS, won this international challenge

ABU Robocon 2018, Pune, India| ***Mechanical Engineer*** Jul 2017-Oct 2018

- Robocon is a national-level robotics competition; designed the Autonomous robot and fabricated an Autonomous and Manual robot; gained machining, 2D drafting and welding skills; tested the robots for their structural integrity
- Developed a technique for controlled temperatures during welding to prevent the metal frame from bending

SAE Supra 2017: Formula One Student competition, Noida, India| ***Powertrain Engineer*** Aug 2015-Jan 2017

- Performed design calculations and CFD in Ansys for the Exhaust manifold; designed the side panels and the floor of the car; coordinated for fabrication; prepared Cost Report for Statics event; headed Inventory and Car pit team

CERTIFICATIONS

Certified SolidWorks Professional by Dassault Systems Oct 2019

CONFERENCES & PUBLICATIONS

- Kulkarni K., Abhang R. (2021). Conference paper on *"Microwave powered extraction of water ice from permanently shadowed regions on the Lunar Surface."* 72nd International Astronautical Congress 2021, Dubai, IAC-21, A3, IP, 5, x64672