Neel Joshi

ndjoshi@alumni.cmu.edu ♦ (412) 954-8693 ♦ www.linkedin.com/in/neeldjoshi

EDUCATION

Carnegie Mellon University Pittsburgh, PA
Master of Science in Mechanical Engineering - Advanced Study, GPA 3.58/4.00 Dec 2022

Manipal Academy of Higher Education Manipal, India
Bachelor of Technology in Mechanical Engineering, CGPA 8.9/10.0 Nov 2019

SKILLS & INTERESTS

Programming: Python, C++, R, Javascript, HTML5, CSS3, SQL
Packages: Minitab, MATLAB, SolidWorks, CATIA, ANSYS
Machines: Lathe, CNC, saw cutter, milling, drilling, 3D printer, laser cutter, tolerancing, furnace, sheet metal forming

EXPERIENCE

Jefferson Lab Newport News, VA
Mechanical Engineer I Mar 2023 – Present
- Contributing as a team member for flagship Electron-Ion Collider project to be built at Brookhaven National Lab
- Optimised beamline-vacuum-side absorber for 591 MHz accelerator cavity; reported results to senior engineers, staff scientists along with data analysis, created documentation for the same
- Wrote numerical solver in MATLAB for finding most economic location for heat station along coaxial cable for 394 MHz accelerator cavity
- Modelled thermal behaviour of supercritical helium for accelerator cavity on NX and ANSYS APDL, with special consideration of plumbing, 5-bar linkage, and environmental safety standards
- Supported continuous improvement design processes with my software skills in building digital models, built time-stepping simulations in Python that were not possible using proprietary FEA software

INTERNSHIPS

Sheet Metal Forming Lab Mumbai, India
Research Intern Jan 2019 - Aug 2019
- Modelled novel Thermal Barrier Coating (TBC) withstanding very high temperatures in toxic environment
- Conducted mechanical and thermal tests on different compositions to optimise for high temperature strength in TBCs
- Instructed MS Manufacturing class of 20 on hydroforming simulation using QForm (latest introduction) software
- Collaborated with chemical suppliers and metal vendors, negotiated quotations, handled Bill of Materials
- Participated in brainstorming sessions on design of experiments along with lab members

M/s Eltek Engineers Pune, India
Manufacturing Intern May 2017 - Jun 2017
- Processed light duty jobs on drilling machine, TIG welding to fabricate angular joints to be used in streetlight poles
- Applied manual (floor level) methods for levelling and vibration damping in rotational components
- Studied plant layout and material flow, provided constructive feedback to improve downtimes

ACADEMIC WORK

Carnegie Mellon University Pittsburgh, PA
High Speed Soft Actuator Jan 2022 – Apr 2022
- Setup fresh 3D printer (Dremel 3D40) including material selection, platform levelling, and slicer software
- Contributed to Design for Manufacturing practices in construction of mounting platform, robot arms designed in SolidWorks
- Organised force control system on Arduino Uno, constrained end-effector trajectory time in orders of 0.1s

Soft Wheel Differential Drive Jan 2022 – Apr 2022
- Planned and initiated terrain testing of inflatable wheeled robot on carousel made for Mars Rover testing
- Handled management of project budget, purchasing of materials, and fabrication tools such as 3D printer, laser cutter

Manipal Academy of Higher Education Manipal, India
Heat Treatment of Medium Carbon Low Alloyed Steels Jul 2017 – Nov 2018
- Devised custom heat treatment cycles refining strength by 40% with Spheroidization in as-brought structural steels
- Organised raw material, designed specimen using CATIA per ASTM standards, machined and performed surface finish
- Designed experiments and gathered data, analysed results along with teammates using Minitab statistical package

CERTIFICATIONS

Data Science Specialisation with R (Johns Hopkins University)
Lean Six Sigma Yellow Belt (TU Munich)
Excel Skills for Business (Macquarie University)