Neel Joshi

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EDUCATION

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

Relevant Coursework:
- Introduction to Machine Learning
- Modern Control - Theory and Design
- Computer Vision for Engineers
- Robot Dynamics and Analysis

Manipal Academy of Higher Education [MAHE]   Manipal, India
Bachelor of Technology in Mechanical Engineering   Nov 2019
CGPA: 8.90/10.00

SKILLS

Programming Languages: *Basic* - C++; *Intermediate* - Python, R
Application Software: *Advanced* - Minitab, AutoCAD, SolidWorks, ANSYS; *Intermediate* - CATIA, MATLAB
Languages: English (Fluent), German (Basic), Hindi (Native) and Marathi (Native)

PROFESSIONAL EXPERIENCE

M/s Saphalya E Motors   Pune, India
Team Lead (Self - Employed)   Jan - Jul 2021
- Instructed a team of 3 technicians for maintenance of 3-wheeler EVs and organised on site emergency visits
- Reduced average waiting time for customers, achieving break-even within 3 months after civil lockdown of 2020

INTERNSHIPS

Indian Institute of Technology Bombay   Mumbai, India
Intern   Jan - Aug 2019
- Designed a novel Thermal Barrier Coating (TBC) withstanding temperatures of around 2000°C for larger intervals of exposure to toxic environment
- Conducted mechanical and thermal tests on different compositions to optimise for high temperature strength in TBCs

PROJECTS

Carnegie Mellon University   Pittsburgh, PA
Controller Design for Unmanned Vehicles Simulation   Nov 2021 – Dec 2021
- Programmed a PID and infinite horizon Linear Quadratic Regulator (LQR) using discretized and linearized vehicle dynamics
- Executed A-star path planning algorithm with extended Kalman Filter SLAM to guide autonomous vehicle around obstacles
- Analysed performance of Model Reference Adaptive Controller (MRAC) against LQR after sudden loss of thrust in quadrotor

Dense Point Cloud Rendering for 3D Reconstruction   Nov 2021 – Dec 2021
- Collaborated with 3 classmates for developing Structure from Motion model with modular Python scripts
- Implemented Quasi Dense Matching from scratch by best-first propagation algorithm as part of the multi-step process

Individual Participation
Data Centric AI Competition   Jun 2021 – Sep 2021
- Improved accuracy of ResNet50 on Roman MNIST dataset from 0.64421 to 0.80702 (top contestant at 0.86570) using image augmentation and logical reasoning while maintaining reproducibility with Python scripts and Git for version control

Manipal Academy of Higher Education [MAHE]   Manipal, India
Heat Treatment of Medium Carbon Low Alloyed Steels   Jul 2017 – Nov 2018
- Devised custom heat treatment cycles improving strength by 40% with Spheroidization in as-brought structural steels
- Published a paper on outcomes of above research project: "Mechanical Properties - Morphology Corroboration of Spheroidized AISI1040 Steel.", Materials Research Express 6.8 (2019): 0865g8. Web

LEADERSHIP

Class Representative (MAT 5286), MAHE – Manipal, India   Jan - May 2018
- Co-ordinated between fellow classmates and professor for scheduling assignments and activities while managing timely delivery of study material to fellow students

Volunteer, Medical Camp for Malnourished Children, Rotary Club of Pimpri Town – Pune, India   Jan - Jun 2013
- Co-ordinated between doctors and the Rotary team, maintained order by keeping patients and families in linear queues, handled records books and had an occasional click on camera

HONORS AND AWARDS

Facebook Certified Digital Marketing Associate   Apr 2021
Lean Six Sigma Yellow Belt   Nov 2019