PRANAV LOKHANDE

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OBJECTIVE:

To obtain an engineering position where I can utilize my one-year of R&D experience, FSAE participation and strong product design background.

EDUCATION:

Master of Science in Mechanical Engineering **May 2021**
Clemson University, South Carolina, United States **GPA: 3.96 /4.0**

Bachelor of Mechanical Engineering **May 2017**
K.J. Somaiya College of Engineering - Mumbai, India **Grade: 8.07 /10**

RELEVANT EXPERIENCE:

Design Intern, R&D **June 2018 – June 2019**
Design Engineer, R&D
Divide by Zero Technologies, Navi Mumbai

- Designed and developed Fused Filament Fabrication and laser-based 3d printers using SolidWorks.
- Worked with electro-mechanical systems and implemented topology optimization with material selection to reduce the machining cost (by 15%) and weight (by 20%) while retaining strength.
- Prepared 2D drawings, Bill of Material, and conducted cost analysis for the designed components.
- Developed and validated a beta prototype for one of India's first laser-based 3d printer from concept

Project Design Engineer **April 2018 – June 2018**
U-Farm, Mumbai

- Designed and developed the mechanical structure of an IoT powered vertical farming appliance.
- Created custom parts of the pilot project by proposing innovative manufacturing techniques using the 3-axis milling machine, laser cutting, and rapid prototyping.

TECHNICAL SKILLS:

Proficient: Additive Manufacturing, ANSYS, DFM, FEA, GD&T, MATLAB, Product Design, SolidWorks
Intermediate: AutoCAD, CATIA, CFD, Fusion 360, HyperWorks, Lean Six Sigma, Python, VisualDoc
Beginner: Autodesk Inventor, Internet of Things (IoT), Machine Learning, ModeFRONTIER, Robotics

RELEVANT PROJECTS:

MIT Covid-19 Challenge: Remote quality inspection system **Aug 2020**
Winner – MIT Challenge: India Turning the Tide

- Collaborated with a multi-disciplinary international team consisting of senior quality engineers and strategic experts from medical industries, along with computer science, machine learning engineers.
- Demonstrated a strong ability to analyze problems by proposing an automated quality inspection process using 3D scanners and virtual reality, RF id tags, and Remote visual inspection.

Design, Analysis, and Fabrication of Composite system of an FSAE car. **Aug 2016 – May 2017**
K.J. Somaiya College of Engineering – Mumbai (Cost report winning team in FSG 2016)

- Designed, validated, and developed Bodywork and Aerodynamics package using SolidWorks and ANSYS Workbench.
- Performed CFD simulations to optimize and validate the Aerodynamic performance of the car.
- Led Aerodynamics and Bodyworks team providing an intellectual and professional atmosphere conducive to the stimulation and interchange of ideas including design, manufacturing and assembly.
- Prepared cost and manufacturing report performing cost analysis and preparing strategies for mass production of the car, securing first and third place in FS Germany 2016 and 2017 respectively.

Lunar Regolith processing module **Aug 2019 – Dec 2019**

ME 8700: Advanced Design Methodologies – Clemson University

- Articulated technical requirements in simple terms to design a lunar regolith processing module for processing mined regolith to extract and store hydrogen, oxygen, and He-3 for inter-terrestrial use.
- Brainstormed and evaluated the concepts using various tools like FMEA, Decision Matrix, Severity Ranking Criteria. Performed Verification and Validation test plan for subsystem level, Evaluation of the concept concerning MOE and MOP with engineering analysis and Program budget proposal.

Structural & Thermal Analysis of an Automotive Body in White **Jan 2020 – Apr 2020**

AUE 8550: Structural/Thermal Analysis Methods for Automotive Structure – CU-ICAR

- Designed the automotive body structure which will meet the bending, torsion and crashworthiness, and vibration with minimum possible weight along with spatial requirements as per given layout.
- Optimized the geometry of the frame and the dimensions of tubes to minimize weight while satisfying constraints like Body Side-Frame Bending Stiffness, Body Structural Torsional Stiffness, Crashworthiness, Passenger compartment integrity, and Crash impact loads.

ONLINE SPECIALIZATIONS:

Six Sigma Green Belt Specialization **May 2020 – June 2020**

Kennesaw State University – Coursera

- Gained knowledge of the tools in Define, Measure, Analyze, Improve, and Control (DMAIC) structure of Lean Six Sigma.
- Developed project charters, data collection plan, process map, control plan, along with null and alternative hypotheses, problem statement, business case, goal statement, process and scope description, and the timeline for the capstone project of the specialization.

Modern Robotics: Mechanics, Planning, and Control Specialization **June 2020 – Present**

Northwestern University – Coursera (Ongoing)

- Employing modern motion planning techniques like A* algorithm on the C-space grid from obstacles using randomized sampling-based planners using Python.
- Performing simulations on CoppeliaSim to visualize and improve the algorithm for the generated grid.

Design, analyze and optimize an Unmanned Aerial Vehicle (UAV) **June 2019 – Aug 2019**

Autodesk – Coursera

- Designed the 3D printable chassis of an unmanned aerial vehicle, selected the appropriate electronic components and performed simulated tests and analysis to validate the design using Fusion 360.
- Performed Topology optimization to minimize the weight of chassis, validated the selected battery package for the required run-time and weight of the vehicle.