PAWANDEEP DHALL

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Professional Summary

An innovative, leadership-driven mechanical engineer. Excellent communicator with the ability to explain complex design ideas and concepts effectively. Experienced in all aspects of hardware and software design, theories of operation, system integration, installation, and commissioning.

Education

Bachelors of Engineering: **Mechanical Engineering** *(9.4 CGPA)* Expected in Jun 2022
Savitribai Phule Pune University Maharashtra, India

HSC May 2018
FIITJEE, Green Valley High School Vadodara, Gujarat

SSC Jun 2016
Delhi Public School Vadodara Vadodara, Gujarat

Work History

Mechanical Design Intern September 2021 - Current
VR Coatings Pvt. Ltd. Pune, IN
- Designed, simulated and manufactured special nozzle for spray coating with 70% more cost efficiency than any other conventional spray nozzles.
- Involved in the development of a state-of-the-art 3D printer with multiple functionalities and the ability to print extremely scarce materials.

Solidworks Student Leader Pune India September 2021 - Current
Dassault Systemes Pune, IN
- Communicated information about Solidworks to 600 Indian undergraduate students, including information about student licenses, the SOLIDWORKS Certification Program, internship opportunities, local SOLIDWORKS User Group Network events. By exposing students to these numerous resources, further promoted development into design and engineering. Also worked closely with 5 fellow student organizations and SPPU engineering departments to provide a centralized location for CAD education.

Upwork Top Rated Freelancer March 2021 - Current
Upwork Inc Pune, IN
- Accomplished 26 different projects including 39 sub-projects such as designing and assembly of electric furnace, CNC machine shredder machine, filament extruder, injection molding machine, power hacksaw, wire bending machine. Manufacturability was the foremost concern when designing these machines.

Founder (Mechanical Design Engineer) Aug 2019 - Aug 2020
Ekka 3d Printing Pune, IN
- Designed over 60 products successfully, overseeing production processes from conception to completion.
- Tested models of alternate designs and processing methods to assess feasibility, operating condition effects, possible new applications and necessity of modification.
- Supported engineering design development through analysis and simulation of more than 40 prototypes and 3D had hands on experience with all types of 3d printers.

Founder Jan 2019 - Current
Interdisciplinary Committee of DY Patil College Pune, IN
- Devised organizational vision, mission, and foundational structure to facilitate early growth of over 100 students.
- Transformed departmental operations through aggressive process overhaul and attention to quality.

Awards and Honors

- **Runner Up – Ideathon,** GH Rasoni (National Level)
- **Winner - PROTECH 2019,** SIBM (National Level)
- **Incubation by Autocluster,** Autocluster Pune
- **Winner - Skillathon 2020,** SAE (National Level)
- **Runner up - Drone-a-thon 2020,** 3DEXPERIENCE Lab, Dassault systemes (International Level)
- **Winner – Transfigure 2021,** MITWPU (National Level)
- **Trainer/Lecturer at AICTE IDEA Lab FDP,** DYPIU

Patents and Publications

- **Smart valve system for water management** **[201921040166]**
  Created a smart valve integrated with artificial intelligence and machine learning to ensure proper and constant distribution of water in tanks.
- **The Palanca** **[201921004985 A]**
  A smart bumper system that will be installed on the roads at appropriate distances to slow down the traffic and also to regulate the flow of traffic in one direction preventing wrong side driving.
- **The Velocidad** **[201921004987 A]**
  Designed smart bumper mechanism that can be installed on any road to regulate the speed of the traffic flow. It slows down the speed of the vehicle by changing its height.
- **The Detener** **[201921004986 A]**
  Designed a special bumper that will be installed at the signals to ensure the proper flow of the traffic at red lights. Designed to lift the zebra crossing when the signal was red up to an optimum level and it would go back once the signal turns green.
- **"Weight Reduction of Airfoil using Generative Design & Structural Analysis"** in the AMERICAN INSITITUTE OF PHYSICS – AIP PUBLISHING, US. | ISSN : 0094-243X | E-ISSN : 1551-7616 | | Impact Factor 1.548. | H-index- 75 | Scopus Indexed |
  An exploratory study of the impact of the symbiotic relation between topology optimization using generative design and strength analysis on wing ribs in weight reduction and amplified efficiency of the aircraft.*[ACCEPTED]*

Projects

- **Economical multipurpose 6 axis industrial robot arm**
  Modularly design to serve injection molding, welding, 3d printing, CMM and part picking purposes. The arm has the ability to change the module automatically according to the user input.
- **Spyder Robot – Quadruped spy robot**
  Cognitive sensor infrastructure which can be deployed as the border surveillance system to detect, collect and send information from remote locations with self-power generation and management capabilities.
- **Agroraptor – Agricultural drone**
  A multi-utility VTOL UAV with modular design that could be connected with distinct modules such as soil analyzer, water sprayer with pressurized tank , seeder with rotating hub and plant life indicator using hyperspectral camera with NIR sensor.
- **Multi nozzle diameter extruder for FDM 3d printer**
  A single extruder with multiple nozzles of different diameter that automatically changes according to the component mechanical property in a solitary printing process improving resolution of the print and reduced printing time also enhancing the mechanical properties of the printed part.
- **Design and simulation of aerodynamic propellers in MATLAB**
  Actuator Disk theory and Blade Element Theory in MATLAB used to model, design and simulate the performance of propellers accurately in real life conditions.

Certifications

- Certified Solidworks Expert – Mechanical Design   [XZCNDAG246]
- Certified Solidworks Associate – Additive Manufacturing   [RZ5PKX2V7A]
- Certified Solidworks Professional – Advanced Sheet Metal   [LKGE6BSXJW]
- Certified Solidworks Professional – Advanced Drawing Tools   [PMZHNLE364]
- Certified Solidworks Professional – Advanced Surfacing   [839EL6F5PA]
- Certified Solidworks Professional – Advanced Weldments   [ZM6EXRFSUH]
- Autodesk Certified in CAD & Digital Manufacturing   [qbqa3oeE]
- Autodesk Certified in Generative Design for Manufacturing   [QCMNYUP69YBP]
- Aerospace Structures and Materials by Delft University of Technology (edX)

Softwares and skills

Softwares
SolidWorks| Autodesk Fusion 360 | CATIA V5 | PTC CREO | Keyshot |3DEXPERIENCE | Ansys| MATLAB| OpenVSP| Autodesk Eagle| Ultimaker Cura| Priemer Pro |Wondershare filmora |Blender |Simul8 |Autodesk Inventor

Skills
Mechanical Design |FEA and failure analysis |Bill of Material (BOM) |3D rendering software |Computational Fluid Dynamics | Team management | Complex problem solver | Event management | Photography | Videography

Extra-Curricular

- **Cricket Team, DY Patil College of Engineering**   **(2018-2020)**
  Represented my college in several inter-college tournaments.