Satya Kalyan Magapu

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PROFESSIONAL SUMMARY

- Graduate Mechanical Engineer with extensive experience in **Manufacturing** and **Engineering Design**.
- **5 years** of experience in designing using SolidWorks, CATIA, Solid Edge, Patran and Nastran, Autodesk Inventor.
- Worked as Teaching Assistant to a graduate class for the Computer Aided Engineering (**Patran and Nastran**) course.
- Proficiency using **CAD** software, **MSC Patran** and **Nastran**.
- Skilled SolidWorks Drafter with exceptional design and artistry background. Designed a range of blueprints, models, and drawings for the design of structures and products assemblies using **SolidWorks**.
- Knowledge about principles of **HVAC** Design, engineering specifications and safety systems.
- Designing experience of HVAC systems using Autodesk **Revit**.
- Experience with common manufacturing methods such as Machining, **3D Printing**, Welding, and **Injection Molding**.
- Knowledge of latest **ISO 9001** standards.

EDUCATION

Master of Science in Mechanical Engineering Jan 2016 - Dec 2017
University of Alabama in Huntsville, AL.
Bachelor of Engineering in Mechanical Engineering Aug 2011 - May 2015
GITAM University, Telangana, India.

TECHNICAL SKILLS

CAD Tools	SolidWorks, CATIA V5, Solid Edge, Revit, AutoCAD, Autodesk Inventor, DraftSight
Analysis Tools	Patran and Nastran, Deform-3D
Software Programs	C Language, MATLAB
Technical Documentation	MS Excel, MS Word, MS PowerPoint

PROFESSIONAL EXPERIENCE:

LM Wind Power – *Production Engineer* **June 2018 - Present**

- Responsible for making **Engineering** and **Design** changes to improve the **quality** of the product.
- **Analyzing** the Cycle time **data** for **Molding** and **Post Molding** and working on driving the cycle time down.
- Helping Management to understand the issues causing **delays** in production and work accordingly to **prevent** them in future.
- Creating **3D-models** and **2D** conceptual drawings of material handling carts, transportation racks, platforms using **Autodesk Inventor** and **DraftSight**.

- Designing with the goal to provide better **ergonomic** support, improving **safety**, productivity and efficiency.
- Collaborating with all the team members to understand the design requirements and interacting with vendors for validation of designs.
- **Implementing** global project called **Cycle Time Tracker** in the plant to find the root causes in delay of each process.
- **Training** all team leads and working with CI team to analyze the data to eliminate non-value adding activities, optimize teamwork, and **improve** performance **efficiency** and **productivity** through **AWO's**, **VSM** and **KAIZEN** sessions.

Volunteer Research Assistant **Feb 2018 – June 2018**

- Involved in designing components for additively manufactured parts using **Solid Edge** for ongoing projects.
- Responsible for executing the **preprocessing** steps before sending it to the additive machine and setting up the printer for the part to be printed.
- Modifying designs to **eliminate waste** and system malfunctions.
- Maintain and oversee the schedule and work performed in the **additive manufacturing** laboratory.
- Follows standard work methods on assignments for any part making / modification conflicts or gaps.

Teaching Assistant for Computer Aided Engineering **Aug 2017 - Dec 2017**

- Worked as a **teaching assistant** for the computer aided engineering course.
- Taught classes on **Patran and Nastran** for undergraduate and graduate students.
- Assigned workshops and projects based on designing and analysis of different models.

R D Pollution controls – *Engineering Intern* **Jan 2015 – Dec 2015**

- Examined and studied the **construction** and **operation** of **air pollution control** equipment's, evaporation systems, air handling systems, ventilation systems, exhaust systems and centrifugal fans and **fabrication**.
- Collaborated with the manufacturing team in designing more **efficient designs** of the equipment's using **CATIA V5.**
- Proposed new sustainable **ideas** by varying different parameters which **effects** the **performance** of the equipment.
- Designed heating, ventilation, and air conditioning (**HVAC**) system.
- Managed load calculations, equipment selection and implementation of different systems. Drafted and designed ductwork and piping systems for construction.
- Monitored the drafting work related to HVAC in **REVIT**.

Hyderabad Batteries Limited - *Engineering Intern* **Jan 2014 - Aug 2014**

- Working experience in manufacturing battery cases using **injection molding** and lathe machine operations and battery test environment.
- Deep knowledge on **manufacturing** aviation batteries in the three main technologies generally used for aircraft starting like Lead Acid - Sealed Maintenance Free, Nickel Cadmium, Silver Zinc.
- Developing improved designs using **SolidWorks** based on test results.
- Proficient in standardizing the processing parameters for processing of different materials on different machines.
- Clear understanding on engineering methodologies, **testing**, designing, and analyzing battery related problems.

PROJECTS

Design and analysis of a Finite Element Model of the Crane

- Worked on **design** and **analysis** of the construction crane.
- Analyzed various loads cases at different nodes using MSC **Patran** and **Nastran**.
- Different inertial and thermal load cases were analyzed.

Design and Optimizing the Weight of a Bracket

- **Redesigned** an aircraft bracket using design for manufacturability principles and reduced the weight and manufacturing cost by **30%.**
- Used **solid edge** for the designing and manufactured the bracket by **blown powder additive manufacturing** process.
- Optimizing the weight of the bracket using the Inconel 718.

Closed loop Sliding mode control of a 2 link RP robot manipulator:

- Derived the equations of inverse kinematics and dynamics for a robotic arm with a revolute and a prismatic joint from scratch.
- Programmed the **robotic arm** using **Matlab/Simulink** to achieve the desired motion with **zero tracking errors** and successfully eliminated the chattering effect.
- Also verified the results by adding a **disturbance term** and successfully achieved negligible tracking errors and continuous control.
- Got to program an industrial robot i.e., the **PUMA560** which has six degrees of freedom using MATLAB/SIMULINK.

Design and fabrication of Worm and Worm Wheel Mechanism

- Designed and built a **worm wheel mechanism** for lifting the heavy loads.
- Specialized in mechanical components, creating schematic, angle and orthographic views using **SolidWorks** and **AutoCAD.**
- Extensively used **CATIA** V5 for analysis of the model.
- A **prototype** was built and tested by lifting different loads and results were compared.

Optimization of Weight and Cost of Leaf Spring Using Composite Material

- Designed the **leaf spring** for the suspension of mini truck and **reduced** the weight by **50%** compared to conventional leaf spring.
- Used **CATIA** V5 and **ANSYS** for modelling and analysis of the components.
- Composite materials were used to **build** the model and stresses are calculated.

Solid Rocket Energy Management Project

- Worked on the project titled Solid Rocket Energy Management Project using Microsoft Excel.
- Obtained the **optimum values** for thermal and kinetic energy of a sounding rocket to achieve a **precise altitude**.
- Obtained the design parameters for the **solid propellant grain** for the rocket to achieve the altitudes of 5000ft, 10000ft and 15000 ft.