Harshit Aneja

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EDUCATION

The University of Texas at Dallas, Richardson, USA — Expected May 2021
Master of Science in Mechanical Engineering — **CGPA 3.56/4.0**

Guru Gobind Singh Indraprastha University, New Delhi, INDIA — July 2018
Bachelor of Technology in Mechanical and Automation Engineering — **75.46%**

SKILLS

Design	: AutoCAD, SolidWorks **(Certified SolidWorks Associate),** Autodesk Inventor, CATIA, Creo, Autodesk Revit, NX, LabVIEW
Simulation	: ABAQUS, Ansys (FEA), APDL, MATLAB, Simulink
Coding	: Python, C++, C, HTML, CSS

WORK EXPERIENCE

Teaching Assistant, Department of Mechanical Engineering | University of Texas at Dallas, TX — Aug 2020 -Present
- Freshman class of 100 students; managed discussion board and graded tests and assignments on a daily basis.
- Sophomore class of 150 students in Statics and Dynamics; worked on LaTex for formulating assignment and test solutions.

Intern | Shakti Foundry and Engg. Works , INDIA — Aug 2018 – Feb 2019
- Implemented the results of research project 'Optimization of Casting Parameters using Taguchi Method'; optimized casting parameters and brought down casting rejections from 8% to 3%.

Intern | Sunil Auto Comp Pvt Ltd, INDIA — Jul 2017 - Aug 2017
- Worked at sheet metal workshop of 'Maruti Suzuki Pvt Ltd', conducted quality checks of about 30 sheet metal components.
- Studied the areas where Kaizen approach can be implemented for continuous improvement.

Intern | Indosolar Limited, INDIA — Jun 2017 - Jul 2017
- Documented the deposition rate of bus bar printing on solar cells every hour
- Assisted designing team in building a substitute conveyor belt along the main production line.

PROJECTS

Design of exoskeleton chair (Self project)
- Designed and simulated a **CAD** model of an exoskeleton chair using **SolidWorks**, used complaint mechanism to limit linkages instead of hinged joints, additively manufactured the prototype using Fused Deposition Modeling method.

Wheel hub assembly analysis for Formula SAE Cars
- Designed the wheel upright assembly on Solidworks and analyzed it on **ABAQUS** for Aluminum 7075 T6 and CFRP materials. Calculated the maximum deformation and stresses incurred on the assembly under the effect of longitudinal forces. Identified the most suitable additive manufacturing process based on the type of material.

Investigation of powder flow in Directed Energy Deposition process (Self project)
- Dynamic movement of the powder flow particles was simulated using **ANSYS**-Fluent, evaluated for DPM concentration and velocity magnitude and compared under different nozzle structures, feed angle and flow rate.

Analysis of cantilever beam for plane stress using Ansys APDL and MATLAB
- Optimized a cantilever beam for plane stresses using **MATLAB** and **Ansys** Q4 and Q8 elements for different mesh densities. Computed error in analytical and simulation results for maximum deflection of the beam on log-log scale plot.

Optimization of Casting Parameters using Taguchi Method
- Prominent casting parameters and their effects on casting defects were identified. Sand testing methods were used to vary the values for each parameter and samples were cast for experimentation. **Minitab** analysis was conducted to identify the optimal values according to L-9 array.

Investigation of different cellular lattices effects on mechanical properties (Self Project)
- Different lattice structures were additively manufactured and analyzed for their tensile properties. **Abaqus** simulations were carried out to compare the results with the experimental set-up.

ACTIVITIES & ACHIEVEMENTS

- **Treasurer, Indian Students Association**, University of Texas at Dallas. — June 2020-May 2021
  Managing budget and financial related activities of the association.
- Published a **research article** in **International Journal of Mechanical and Production Engineering Research and Development** (Vol 8, Issue 4), a Scopus Indexed Journal. — Aug 2018
- Participated in the **National Service Scheme** camp. — Jan 2016-Apr 2016
  Undertook social service activities like cleaning of slum areas and organization of activities to promote literacy