Raghav Sharma

(480)-278-0516 | ras325@pitt.edu | linkedin | github | Google Scholar

EDUCATION

- University of Pittsburgh, PA |**Ph.D.** (Mechanical Engineering) | **GPA=3.75** |Expected Graduation **Fall 2024**
- Arizona State University, AZ | **M.S.** (Mechanical Engineering) | **GPA=3.88** | **2019**
  - Masters Thesis: Unit cell selection for Lattice Design for various structural loading cases
- Punjab Technical University, INDIA | B.Tech. (Honors) (Mechanical Engineering) | **GPA=78/100** **2016**

RESEARCH EXPERIENCE

Graduate Student Researcher |University of Pittsburgh

- Implementation of algorithm to capture the effect of layer deposition in SLM process in FEA model **July 2020**
- Implementation of isotropic hardening model for Additive Manufacturing **March 2020**
- Stress Based Topology Optimization of 2D structure **November 2019**

Graduate Services Assistant |Arizona State University

- Compression testing of various lattices to analyze stiffness as a function of unit cell shape **August 2019**
- Simulation of various lattices to compare stiffnesses under compression, shear and torsion loading as a function of unit cell shape **July 2019**
- FEA simulation of carbon-fiber and Onyx honeycomb compression in ANSYS **June 2019**
- Analytical analysis & FEA simulation to compare homogenization and proposed member characterization for honey-comb behavior under compression **July 2018**

Research Assistant | IIT-Ropar, Rupnagar, Punjab, India **January 2017**

- 3D FEA simulation of a custom VMC cutter using ABAQUS as a part of the experimental investigation on 'Elastic spring back in deformation machine bending mode'

TECHNICAL SKILLS

CAE

- Linear and Non-Linear Finite Element programing for static and dynamic cases in structural and thermal domain
- Topology Optimization (Programing in MATLAB, ANSYS GUI, Altair Inspire GUI)
- ANSYS MAPDL & ABAQUS GUI (Static Structural, Explicit Dynamics, Steady-State thermal, Transient Thermal)

Computer Technologies

- MATLAB, Python, C++, R
- Microsoft Office: Excel, PowerPoint, Word
- CAD: SolidWorks, CATIA V5, UG/NX

PUBLIC SERVICES & AWARDS

Publications

- R. Sharma, T. Le, J. Song, E. Harms, D. Sowa, A, Grishin, D. Bhate, "A Comparison of Modeling Methods for Predicting the Elastic-Plastic Response of Additively Manufactured Honeycomb Structures," peer-reviewed proceedings, Solid Freeform Fabrication Symposium 2018

Academic Service

- Peer reviewed papers for the SFF Symposium 2018 held at Austin, Texas

Awards

- Winner of **National Science Foundation (NSF)** student support award for SFF Symposium **2018 & 2019**

OTHER NOTABLE PROJECTS

Finite Element Coding for 'Direct Visualization of Laser-Driven Focusing Shockwaves **September 2018**

- Simulation of Gaussian wave propagation of shockwaves generated by a laser-source in a polymer medium
- Use of Explicit Time integration for simulation in MATLAB
- Model validation using the concept of total energy conservation

Finite Element Coding for a circular rubber plate subjected to blast loading **August 2018**

- Simulation of blast loading on rubber plate dictated by Friedlander's equation of pressure
- Use of Explicit Time integration for simulation in MATLAB
- Model validation using the concept of total energy conservation

RELATED COURSES (GRADUATE LEVEL)

- Finite Elements for Engineers
- Design for Additive Manufacturing
- Stress Analysis
- Advanced Computational Mechanics
- Structural Topology Optimization for Additive Manufacturing
- Advanced Continuum Mechanics

PRESENTATIONS

- R. Sharma, D. Bhate, "An Investigation into the Stiffness Response of Lattice Shapes under Various Loading Conditions", Solid Freeform Fabrication Symposium 2019, Austin, Texas
- R. Sharma, D. Bhate, "An Investigation into the Stiffness Response of Lattice Shapes under Various Loading Conditions", Materials Research Society (MRS) conference 2019 (Spring Session), Phoenix, Arizona
- R. Sharma, T. Le, J. Song, E. Harms, D. Sowa, A, Grishin, D. Bhate, "A Comparison of Modeling Methods for Predicting the Elastic-Plastic Response of Additively Manufactured Honeycomb Structures,", Solid Freeform Fabrication Symposium 2019,Austin,Texas

REFERENCES

1. Dr. Dhruv Bhate
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   Assistant Professor
   Arizona State University
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