

SUMAN JAISWAL

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EDUCATION

- Ph.D. in Mechanical Engineering | New Jersey Institute of Technology, USA | May 2023
- Bachelor of Engineering in Mechanical Engineering | Kamla Nehru Institute of Technology, Uttar Pradesh, India | June 2008

TEACHING EXPERIENCE

Teaching Assistant | New Jersey Institute of Technology, NJ, USA | Sep 2018 – May 2023

Taught undergraduate students the course Mechanical Laboratory ME-406, which includes Performance tests of Vapor Compression Refrigeration Cycle, Vibration Monitoring, Heat Transfer, and Internal Combustion Engine. My Teaching Assistant job includes

- Providing students with the introductory presentation before each experiment.
- Guide undergraduate students through their laboratory assignments, grade the reports, and help with the questions related to the experiments.
- Prepared question papers for the final exams.
- Created video lectures for hybrid classes.

RESEARCH EXPERIENCE

Postdoc fellow | Temple University, PA, USA | July 2023-Present

Conducting research and studying the biomechanics of high-speed blunt thoracic lung injuries in an ovine model.

Ph.D. | Conducted research at Laboratory for the Mechanics of Advanced Materials | New Jersey Institute of Technology, NJ, USA | Sep 2019 – May 2023

My research mainly focused on the characterization and continuum-level modeling of the behavior of porcine skin. The motivation behind choosing porcine skin as porcine skin tissue is used in various medical device applications, for example, hernia repair and breast reconstruction surgery. My research approach includes

- Obtained material behavior by conducting experiments.
- Uses experimental results to develop and calibrate continuum-level constitutive models that could capture the observed material behavior.
- Implemented and verified the models in the finite element environment to demonstrate simulation capabilities.

SKILLS

Experimental: Material testing using MTS (screw) testing machine. Data acquisition and processing by employing the LabVIEW and Digital Image Correlation (DIC) method

Computational: Matlab, FEA in Abaqus (Including User Subroutines) and LS Dyna, Creo, SolidWorks.

Other skills: LaTeX, Microsoft Office applications, including Word, Excel, Power point, and Outlook.

JOURNAL PUBLICATIONS

- Jaiswal, S., Hannineh, R., Nadimpalli, S., Lieber, S., & Chester, S. A. (2023). Characterization and modeling of the in-plane collagen fiber distribution in the porcine dermis. *Medical Engineering & Physics*, 103973.
- Jaiswal, S., Sigaeva, T., Nadimpalli, S., Lieber, S., & Chester, S. A. (2023). Characterization and modeling of the anisotropic behavior of the porcine dermis. *Mechanics Research Communications*, 104098

CONFERENCE PRESENTATIONS

- Poster presentation on “Experimental Characterization and Modeling of Anisotropic Behavior of Porcine Dermis,” Jaiswal, S. et al., Northeast Bioengineering Conference (NEBEC), Philadelphia, PA, USA, 2023
- Poster presentation on “Modeling of collagen fiber orientation in the plane of the porcine dermis,” Jaiswal, S. et al., Northeast Bioengineering Conference (NEBEC), Philadelphia, PA, USA, 2023
- Oral and poster presentation on “Modeling of Collagen Fiber Orientation in the Plane of the Porcine Dermis,” Jaiswal, S. et al., 19th U.S. National Congress on Theoretical and Applied Mechanics (USNCTAM), 2022, Austin, TX, USA.
- Oral presentation “Modeling and Mechanical Characterization of Anisotropic Behavior of Porcine Dermis,” Jaiswal, S. et al., Society of Experimental Mechanics (SEM) 2022, Pittsburgh, PA, USA.
- Poster presentation on “Characterization and Modeling of the Collagen Fiber Distribution in the Porcine Dermis,” Jaiswal, S. et al., Northeast Bioengineering Conference (NEBEC) 2022, NY, USA.
- Poster presentation on “Characterization of Anisotropic Mechanical Behavior of Porcine Dermis,” Jaiswal, S. et al., Society of Engineering Science (SES) Annual Conference (Virtual) 2021.
- The 56th Annual Technical Meeting of the Society of Engineering Science (SES), 2019, St. Louis, MO, USA.

AWARDS

Best poster presentation award at the Society of Engineering Science 2021 Virtual meeting.

INDUSTRY EXPERIENCE

Senior Engineer | Bharat Heavy Electricals LTD (BHEL) | Nov 2008- May 2018

- Did planning for power sector projects, including scheduling, review of schedule, budgeting, and monitoring to ensure timely project completion with desired quality.
- Handled a team of 120 executives handling the planning of over 247 power sector projects.
- Coordinated the communication for all information exchange for the project and ensured the documentation of all the necessary information.
- Identified major bottlenecks hampering the project and demonstrated strong interpersonal and communication skills to negotiate with internal and external customers to resolve them to ensure smooth project execution.
- Conducted monthly project review meetings to ensure only focused and critical issues were raised to top management.
- Performed duties as ISO coordinator and committee member of the internal audit and risk management.
- Ensured ISO practices in the department through proper documentation control.
- Finalized parameters for MOU (Memorandum of Understanding) between BHEL & Govt. of India for various years, which became the target for performance for the company.
- Planned Capital Budget for the department and physical revenue budget for BHEL Units.
- Prepared Balance Score Card of all various manufacturing units in line with that of corporate and evaluated their performance for the respective financial years.

- I designed the agenda and organized Construction Manager's meet for various years so that problems faced and learning by individual managers could be shared across the organization.
- Prepared and maintained the Quality Manual and Common Procedure documents for power sector projects.
- Taken the initiative for the development of an online tool, '*management information system*,' enabling access to the daily progress report of 247 project sites to Top Management with exception reports for each project for effective decision making.
- Saved **1191 million INR** against **Liquidated damages (LD)** for my two projects where I was in charge as a project manager.

Graduate Apprentice Trainee | SCOOTERS INDIA LTD | July 2008- Oct 2008

- Prepared inquiries and tender documents for vendor selections for the purchase of rubber items to be used in automobiles.

CERTIFICATIONS

- Certified in CIPM (Certificate in Project Management) by PMCI (Project Management & Certification Institute).
- Certified in mechanical design software "CATIA (Computer Aided Three- dimensional Interactive Application)" by CETPA.