

Shreyas Nagaraj

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EDUCATION

- The Pennsylvania State University** University Park, USA
• *Master of Science in Engineering Design : GPA: 3.82* Aug 2023 - May 2025*
Courses: Design for Additive Manufacturing, Systems Design, Design for Human Variability, Design Decision Making
- Dayananda Sagar College of Engineering** Bengaluru, India
• *Bachelor of Engineering in Mechanical Engineering : GPA: 3.2* Aug 2017 - May 2021

EXPERIENCE

- The Pennsylvania State University** University Park, USA
• *Graduate Research Assistant - School of Engineering Design and Innovation* Feb 2024 - Present
 - Developing techniques to automate arrangement and embedding of arbitrary two-dimensional shapes into predefined areas using additive manufacturing. This research also explores the integration of automated packing methods with 3D printed components, to significantly improve manufacturing efficiency & reduce waste
- The Pennsylvania State University** University Park, USA
• *Graduate Teaching Assistant - School of Engineering Design and Innovation* Aug 2023 - Present
 - Guide students in engineering design principles and SolidWorks software by collaborating with professors to offer hands-on instruction and thus enabling a deeper comprehension of design concepts for the students.
- Biotree-Zeta** Bengaluru, India
• *Engineer-Design* Feb 2022 - Apr 2023
 - Engineered 3D piping systems and 2D layouts with cross-functional collaboration between departments to seamlessly integrate all vessels, resulting in a remarkable 13% enhancement in overall operational efficiency. Additionally, provided strategic insights on design optimization, resulting in a 20% improvement in equipment reliability and performance
- Tata Advanced Systems Limited** Bengaluru, India
• *Design Intern* Mar 2021 - Apr 2021
 - Collaborated with cross-functional teams in the assembly division to verify functionality of Integrated Warfare System Shelters and multi-barrel launchers, while honing skills in assembly processes, CNC operations and quality control.
- Hindustan Aeronautics Limited (HAL)** Bengaluru, India
• *Production Intern* Jun 2019 - Jul 2019
 - Standardized the manufacturing functionalities of turbofan engines, concentrating on enhancing production time of turbines, compressors and guide vanes. Also, oversaw the overhauling of the engines to inspect parts by non-destructive testing methods

PROJECTS

- Mars Sample Return Simulation Challenge**
• *Fusion 360-Generative Tools & nTopology* Jan 2024 - Present
 - Working on designing a landing system for a simulated Mars sample return mission for a NASA project. This involves engineering a solution to protect tube samples when dropped from 100ft, concurrently utilizing DfAM techniques and ensuring cargo integrity and optimizing for weight and minimal post-processing.
- ILUMEN - Centralized Microwave Energy System for Moon**
• *Systems Design* Jan 2024 - Present
 - Developing a system of system, aimed at innovating a centralized microwave power system for lunar applications. The project encompasses system design, integrating microwave technology for Moon-based construction, mining among others, while navigating economic and security challenges.
- Modeling and simulation of a drone**
• *Fusion 360, Inventor* Apr 2021 - Nov 2021
 - Engineered a fully detailed CAD/CAM drone model including batteries and rotor blades using generative design techniques, rendered functional animations and analysis while running simulations of static forces on the drone body.
- Modeling of parts of a Gas Turbine Engine**
• *Fusion 360, Inventor* Aug 2020 - Jan 2021
 - Developed a CAM and live animation showcasing gas turbine engine components founded on research papers and verified journals, and conceptualized substituting reciprocating engines with a low emission, high-efficiency gas turbine engine.

SKILLS SUMMARY

- **Design and Analysis** SolidWorks, Autodesk Inventor Pro, Fusion 360, AutoCAD, Plant 3D, Ansys Mechanical, nTopology, Generative Design, GD&T
- **Languages** R Markdown/R Studio, C, Python, MATLAB
- **Tools** FIGMA, Cmap, PLM Siemens, Adobe Express, Autodesk Navisworks

LEADERSHIP & VOLUNTEER EXPERIENCE

Smileys India, Tandav Festival of Inclusion

- Educated underprivileged & disabled individuals in computer skills, instilling the significance of education.