

PANKAJ MISHRA

Education

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Arizona State University (ASU) - Tempe, Arizona

GPA: 4/4

Master's of Science in Manufacturing Engineering

Indian Institute of Technology (IIT) - Bhubaneswar, India

GPA: 8.13/10

Bachelor's in Mechanical & Master's in Manufacturing Engineering

Experience

Ira A. Fulton Schools of Engineering - Mesa, AZ (AMFD Lab)

Feb 2025 – Present

GRADUATE SERVICE ASSISTANT - SLA 3D Printing

- Water harvesting through cactus like spine structure for industrial cooling towers.
- Structural analysis of Monolithic Heat Pipe Radiator for Spacecraft application using ANSYS for NASA Space Research.

Pinnacle Consulting LLC - Columbia, SC (Geospatial Solutions)

May 2023 – Jun 2024

SOFTWARE DEVELOPER - Python/ArcGIS

- Created electrical power transmission line guide and electrical pole inspection for Mesa Associates, Inc.
- Automated database maintenance and updates using Python scripting for Berkeley Electric Cooperative.

S20.AI - Bangalore, India (AI & Computer Vision Startup)

Jan 2023 – Apr 2023

SOFTWARE CONSULTANT - Object Detection/Web Scrapping

- Developed a Selenium-based web scraping algorithm to automate data collection for Cars24's machine learning training.
- Deployed object detection on AWS EC2 & Jetson Nano for bag tracking, optimizing real-time detection and streaming.

ICICI Bank - Bangalore, India (Second in India by Market Capitalization)

Jun 2022 – Dec 2022

PRODUCT MANAGER (MT) - iPal ChatBot/Advertisement

- Created Excel macro for chatbot validation; designed delivery plans, boosting user experience for 4 business units.
- Developed performance tracker for 16+ projects; led ad assessment, enhancing user conversion rate by 10%.

Research Projects

Monolithic Heat Pipe Radiators (NASA Space Research) ASU

Feb 2025 - Present

- Analysis of the Branching Effect in Monolithic Heat Pipe Radiators for Spacecraft Applications.
- Numerical analysis of the monolithic heat pipe radiator under rocket lift off and orbiting conditions.

Cactus inspired Industrial Fog Collector AMFD Lab@ASU

Oct 2024 - Present

- Developing an Masked Stereo-lithography fabricated sample designed for fog collection in industrial vents.
- Pioneering novel bio-inspired approach from cactus spines to harness water from low humid atmosphere.

Bio-Inspire Design of Micro-structure for Lunar Dust Collection ASU

Aug 2024 - Dec 2024

- Conceptualizing a Novel approach for lunar dust collection inspired from Aloe Vera plant.
- Leveraging CAD modeling, CFD analysis and 3D printing technology to simulate the working conditions.

Laser-Assisted Grinding of Alumina Ceramic (M.Tech. Thesis) IIT Bhubaneswar

Jul 2021 - May 2022

- Modeled TAZ in laser-heated ceramics using COMSOL, optimizing the process for improved efficiency and precision.
- Proved laser machining superiority over grinding by analyzing surface roughness in ceramic blocks.

Fluid Flow Analysis in Microchannel (B.Tech. Thesis) IIT Bhubaneswar

Jul 2020 - Apr 2021

- Leveraged computational methods to solve flow equations and model electrokinetic flow in microchannels.
- Contributed to the understanding of microfluidic behavior by studying pure water flow under no-slip conditions.

System for Assisting a Visually Impaired User, in Real Time IIT Bhubaneswar

Jul 2018 - Mar 2019

- Designed a wearable device for the visually impaired, enhancing spatial awareness via Computer Vision and NLP.
- Pioneered a compact and energy-efficient braille cell, enabling convenient e-book reading for the visually impaired.

CFD Analysis on a Jet Aircraft Combustion Chamber NIT Rourkela

May 2019 – Aug 2019

- Designed an aircraft combustion chamber in SOLIDWORKS, enhancing structural strength and thermal efficiency.
- Mitigated acoustic noise and fluid flow issues in FLUENT, enabling quieter and more efficient aircraft engines.

Publication / Achievements / Extracurricular / Leadership

Publication

2025

- Pankaj Mishra, "Study on Numerical Analysis of Fluid Flow in Microchannel," International Conference on Innovations in Thermo-Fluid Engineering and Sciences, (ICITFES-2025), Feb 7-9, NIT Rourkela, India. Paper ID 17751, pp 27.

Quality Control Tools/ Lean 6 Sigma ASU & AZNext

21st & 22nd, Nov 2024

- Developed the understanding and application of IBM SPSS & Excel for performing various Quality Control Analysis.

Campaign Data Analyst ICICI Bank

Jul 2022 - Dec 2022

- Built a performance tracker for 16+ projects, enhancing cost efficiency and improving time performance metrics.
- Automated user experience optimization for 4 Business Units, boosting ad conversion rates by 10%.

Texas Instruments India Innovation Challenge Quarter finalist

2018

Skills

Software Skills: Matlab, NodeJS, Python, C++, SQL, NVIDIA TAO Toolkit

Mechanical Tools: AMScope, PrusaSlicer, Creo, ImageJ, SOLIDWORKS, ANSYS, FUSION, COMSOL, ABAQUS, AutoCAD

Statistical Tools: IBM SPSS, Excel, MS Office Products, Python Streamlit, Python Pandas

<https://search.asu.edu/profile/5055402>