

# UTKRASHT PANDEY

+919721831122 ✉ [utkrasht1122@gmail.com](mailto:utkrasht1122@gmail.com)

in [LinkedIn](#) | [GitHub](#) |

Kanpur, Uttar Pradesh

## Summary

---

B.Tech. Mechanical Engineering graduate from Vellore Institute of Technology skilled in AI, Machine Learning, Python, CAD, automation, React.js, Node.js, SQL, and full-stack development, with experience building real-world AI-driven and engineering solutions focused on problem-solving and scalable innovation.

## Education

---

### Vellore Institute of Technology

B.Tech in Mechanical Engineering

2022 – 2026

CGPA: 7.36/10

### Senior Secondary, CBSE - Board

2021 - 2022

## Technical Skills

---

**Programming:** Python(Pandas, Numpy, Matplotlib), SQL, Java

**CAD & Design:** SolidWorks, AutoCAD, Fusion 360, Creo

**Simulation & Analytics:** ANSYS, MATLAB, Machine Learning, Predictive Analytics

**Soft Skills:** Emotional Intelligence, Client Communication, Adaptability, Curiosity, Team Collaboration

**Domain Concepts:** Machine Design, Product Design, Quality Control, Supply Chain

**Automation & Embedded Systems:** Microcontrollers, Robotics, Basic Automation Systems

## Projects

---

- **AeroShield AI — Aircraft Structural Health Monitoring System** ([StreamLit](#)) ([Vercel](#))
  - Developed an AI-powered machine learning model for aircraft structural failure prediction and predictive maintenance analysis.
  - Built interactive dashboards for real-time health monitoring, risk assessment, and Remaining Useful Life (RUL) estimation.
  - Implemented automated reporting and aerospace analytics to deliver actionable insights on structural performance and failure risks.
- **PayGuard AI — Personal Finance & Fraud Detection Platform** ([StreamLit](#)) ([Vercel](#))
  - Developed an AI-powered fintech platform for fraud detection, expense analytics, and financial risk assessment using machine learning models.
  - Built interactive dashboards providing real-time transaction monitoring, budgeting insights, and predictive spending analysis.
- **Automated Solar Panel Cleaning System**
  - Designed and developed a microcontroller-based autonomous solar panel cleaning system to improve operational efficiency and reduce manual maintenance.
  - Implemented an automated motor-driven cleaning mechanism, achieving approximately 30% improvement in energy output through testing and optimization.
- **Automated Solar Panel Cleaning System**
  - Developed an autonomous robotic system for efficient floating waste collection and water surface cleaning using motorized filtration mechanisms.
  - Implemented automated control and optimized the design for continuous operation, durability, and enhanced cleaning performance.

## Professional Experience

---

- **Northern Central Railway, Kanpur** June 2024 – July 2024  
*Mechanical Engineering Intern*
  - Performed inspection, preventive maintenance, and diagnostics of locomotives and railway coaches to ensure operational reliability and safety compliance.
  - Analyzed braking, suspension, and coupling systems to identify faults, performance gaps, and maintenance requirements.
  - Assisted in the overhaul and servicing of heavy mechanical equipment, contributing to improved system efficiency and reduced downtime.
  - Applied machine design, quality control, and maintenance engineering principles to support reliability enhancement initiatives.
  - Collaborated with technical teams on maintenance planning, troubleshooting, and implementation of safety procedures across railway operations.

## Certifications

---

- *Machine Learning with Python (Foundations)*
- Fusion 360 Generative Design
- Siemens NX & Class A Surfacing
- Geometric Dimensioning & Tolerancing (GD&T)
- Reverse Engineering & Product Design
- Participated in technical events, robotics competitions & debates