Pulkit Verma

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Education

Manipal Institute Of Technology, Manipal **July 2024 – May 2028**
Bachelor of Technology in Electronics & Instrumentation Engineering [Department Rank - 5/55] *CGPA: 8.33*

Vishwa Bharati Public School, Noida **April 2023 – April 2024**
High School Diploma [Class XII] *Score: 89%*

Vishwa Bharati Public School, Noida **April 2021 – April 2022**
Secondary School Curriculum [Class X] *Score: 96.8%*

Relevant Coursework

- Digital Signal Processing
- Linear Control Theory
- Digital Circuit Design
- Fundamental Of EVs
- Pandas
- MatPlotLib
- NumPy
- Fundamental Of HEVs

Projects

Vibration Signal Processing & NVH Defect Detection Engin | *Python, SciPy, NumPy, Matplotlib, DSP* **June 2026**

- Engineered a real-time spectral analysis pipeline in Python to process continuous vibration data across simulated EV drivetrain and gearbox test benches.
- Programmed Fast Fourier Transform (FFT) algorithms and bandpass filtering to isolate bearing fault frequencies ($BPFO/BPFI$) from background mechanical noise.
- Developed an automated anomaly scoring engine using threshold limits and spectral energy distribution, simulating an assembly line NVH defect containment rate of 98.5%.

Statistical Process Control & Defect Reduction Engine | *Python, Pandas, SciPy, Matplotlib, 6-Sigma***December 2025**

- Engineered an automated Statistical Process Control (SPC) engine in Python to analyze continuous production parameters and optimize net fill weights across high-speed packaging lines.
- Programmed $\bar{X}$-R control chart algorithms and Western Electric anomaly detection rules to identify process mean shifts, flagging machine drift to prevent out-of-spec defects.
- Developed automated Pareto root-cause analysis and process capability (C_{pk}) evaluations, driving corrective action strategies (CAPA) to simulate internal defect reduction below 1.5%.

Technical Skills

Languages: Python, Swift, SQL (PostgreSQL / SQLite)
Data Analysis & Visualization: Pandas, NumPy, MatPlotLib
Developer Tools & Environments: Jupyter Notebook, Xcode
Core Electronics Engineering: Digital Logic Design, Digital Signal Processing (DSP)

Achievements

Achiever's Scholarship Award **September 2025**
Recipient *MIT Manipal*
∗ Recognized for exceptional academic performance among the top 5% of the department, MIT Manipal.

Satyam House **Spring 2018 - Fall 2019**
House-Captain *Vishwa Bharati Public School*
∗ Elected as Headboy/House Captain to lead and coordinate a cohort of 150+ students across multiple competitive sports disciplines in the annual inter-house championship.
∗ Strategized athlete placements, managed rigorous training schedules, and fostered team synergy, leading the house to a historic overall championship victory after a 7-year title drought.
∗ Collaborated directly with school administration and faculty coordinators to streamline logistics, maintain discipline, and oversee smooth event execution for the multi-day tournament.