HEENAL PATEL

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EDUCATION

Rochester Institute of Technology (08/2022–05/2025)
- Master of Science, Electrical Engineering, Focus on Robotics, Minor in Supply Chain *Rochester, New York*

Nirma University (07/2016–07/2022)
- Master of Business Administration, Minor - Finance *Ahmedabad, India*
- Bachelor of Science, Electrical Engineering

SKILLS

Data, Statistics & Visualization - C, Python, R, SQL, Minitab, Power BI, Tableau, MS Excel (Pivot Tables, VBA), Smartsheet
Engineering & Design tools - CATIA, SolidWorks, MATLAB, ROS, Jira, LabVIEW, 3DX
Continuous Improvement – 8D, DMAIC, Root Cause Analysis, SPC, First Article Inspection, CAPA, Lean Manufacturing.
Quality Systems & Manufacturing – ISO 9001, TQM, GD&T, Gauge R&R, PPAP, APQP, BOM, Supplier Performance, ERP(SyteLine).

CERTIFICATIONS

CSCMP Certified – Manufacturing & Service Operations Professional
Lean Six Sigma Green Belt – *PMI & International Institute of Business Analysis (IIBA)* (Expected 05/2028)

PROFESSIONAL EXPERIENCE

Panelmatic Inc. (09/2025–Present)
Quality Engineer (Corporate) *Houston, Texas*
- Delivered 15+ modular power buildings (E-houses) in 2025 for Meta, Amazon, Ameren, Black & Veatch with customer specific data center, utility and electrical performance standards.
- Implemented and maintained ISO 9001 QMS including internal, external and customer audits with less than 12 findings, warranty processes, CAPA & customer feedback and monitoring systems.
- Defined process control limits and quality acceptance criteria using statistical analysis, enabling scalable production with 91% First Pass Yield (FPY), defect ratio less than 10%, COPQ reduced to 0.5% of revenue, NCRs and Safety alerts on live dashboards displayed across the facility arena.
- Standardized electrical testing and commissioning procedures including Megger test, Dielectric (Hi-Pot) functional testing and FAT/SAT improving on time delivery (90%) and internal defect (20-30 per project) and audit readiness.
- Developed and executed Supplier Quality and Incoming Inspection Programs for electrical and structural components including supplier scorecards, Corrective action follow-ups.
- Standardized manufacturing travelers and inspection check points reducing quality escapes by 30% while improving traceability regulatory compliance (UL, NEC). Collaborated with Engineering, Operations, Procurement, Production & Program Management for organizational performance gap closure.

Tesla Inc. (01/2024–08/2024)
Quality Engineering Intern *Austin, Texas*
- Led RCCA initiatives to resolve cross-functional vehicle quality issues across thermal, chassis, and interior systems, recovering $25K+ in scrap value through supplier collaboration and driving TPM milestone achievement.
- Reduced the daily failure rate from 12% to 2.07 % with a permissible RPN for panel airwaves and center consoles by leading failure mode effect analysis (FMEAs), improving customer durability KPIs by achieving ISO 9001 quality standards.
- Conducted exterior gap & flush and interior seat cosmetic audits, reducing customer-visible defects by 25% through corrective and pre-containment actions in high volume Model Y production with strategies to isolate and prevent non-conforming products from impacting on the overall functional quality.
- Launched WAHA laser calibration stations for the Cybertruck camera at the EOL with AGV-operated calibration on the assembly line and vision inspection provisions. Managed vehicle off-road (VORs) & 1MIS metrics to drive supplier product quality and process improvement.

Tesla Inc. (09/2023–12/2023)
Test Automation Engineering Intern *Sparks, Nevada*
- Improved Quberts battery pack station with software and safety protocol updates while optimizing charging/discharging parameters during planned maintenance with the NPI team.
- Designed an automated functional tester prototype for the Optimus battery pack, along with revised schematics that curtailed testing errors by approximately 60%-70% compared to manual testing equipment by achieving a 3-minute tester cycle time.

PROJECTS

Advanced Job Shop Scheduling for Energy Efficiency Optimization and Industrial Robot Integration. (01/2025–05/2025)
- Applied the mixed-integer linear programming (MILP) method with the given dataset and predefined constraints using IBM CPLEX Studio for problem formulation. Optimized energy usage and delivery times with minimum tardiness by achieving a 20% cycle time reduction for job shop robot scheduling

Cyber Truck Controller Bent Pins Issue Analysis. (03/2024–08/2024)
- Diagnosed the vehicle's functional safety issues, like a complete electronic shutdown due to the dislocation of the controller pins.
- Collaborated with the design team for pin tolerance change of the TPA connector harness and the NPI team for the post-revision trials and approvals, along with revised QAN handling instructions, including pre- and post-torque quality checks. Failure rate improvement from 20% to 6% with proposed potential scrap rework strategies.

Camera Pitch Calibration (01/2024–02/2024)
- Analyzed disengagement issues of front-end camera position due to the top beauty cover pressure suppression, resulting in blurred object image resolution with a C_{pk} of approx.1.35 and a C_p less than 1 for factory vs. field camera pitch adjustments with USL and LSL specs for an SD of 0.7. Induced IFTTT logic for NC generation and redesigned the new camera bracket to stabilize space adjustment during calibration.