

SIDDHARTH KUMAR

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MS Mechanical Engineering, UT Dallas | Design, Manufacturing & Project Engineering | Instrumentation & Automation Systems

CAREER HIGHLIGHTS

- **Promoted Intern → Engineer in 6 months**, skipping the Trainee level entirely, due to demonstrated technical impact and project ownership at IPA Private Limited.
- **Currently being groomed for Head of Department** at 13 months into first role — managing vendor strategy, production operations, and machine shop restructuring.
- **Reduced CNC machining time** (45 → 15 min) through toolpath redesign for specific load cells.
- **MS in Mechanical Engineering from UT Dallas** with hands-on research in Wind Turbine Blades simulation using ANSYS and QBlade.
- **ISO 9001 Certified Internal Auditor** with end-to-end experience across design, manufacturing, quality, and procurement functions.

PROFESSIONAL SUMMARY

Mechanical Engineer with an MS from UT Dallas and broad hands-on experience spanning product design, FEA simulation, CNC process engineering, technical documentation, vendor management, and cross-functional project coordination. Rapidly promoted from Intern to Engineer at IPA Private Limited — an ISO 9001-certified global manufacturer of precision load cells, weigh feeders, and industrial automation systems — skipping the Trainee level in 6 months and currently being groomed for Head of Department. Combines deep engineering fundamentals with practical leadership experience, making an impact across design, operations, and quality functions simultaneously. Holds a SolidWorks CSWA certification and ISO 9001 Internal Auditor credential.

TECHNICAL SKILLS

CAD & Design: AutoCAD, SolidWorks (CSWA Certified), Fusion 360 — part modelling, assemblies, 2D drafting, DFM/DFA

Simulation & Analysis: ANSYS Structural FEA, ANSYS Thermal, Battery Thermal Management, GD&T

Manufacturing: CNC Toolpath Optimization, Fixture & Jig Design, CNC Program Validation, Rapid Prototyping, 3D Printing

Project & Operations: Work-Order Management, Vendor Sourcing, RFQ Evaluation, Supplier Negotiation, Production Coordination

Quality Systems: ISO 9001 Internal Auditing (Certified), CAPA, Drawing Compliance, Technical Documentation, Version Control

Data & Programming: Excel (production dashboards, KPI tracking), Python, Git/GitHub

WORK EXPERIENCE

Engineer | IPA Private Limited | Bengaluru, IN

Sep 2024 – Present

IPA is an ISO 9001-certified global manufacturer of precision load cells, weigh feeders, sensors, and industrial automation systems, established in 1977 with installations worldwide.

Design & Technical Engineering

- Own end-to-end CAD and CAM work for transducer systems — part modelling, fixture design, DFM reviews, and drawing releases using AutoCAD, SolidWorks, and Fusion 360.
- Serve as primary technical interface for design changes and manufacturing issues across transducer product lines, coordinating with quality, procurement, and production.
- **Identified structural discrepancies** in UTM test fixture drawings through dead-weight calibration analysis; proposed and validated design modifications improving calibration accuracy by **15%**.
- Evaluate machining processes and inspect supplier-produced parts against engineering drawings and GD&T requirements during vendor visits.

Process Improvement & Operations

- Collaborated on CNC toolpath redesign that **cut cycle time by 300%** and tripled projected monthly output.
- Built a data-driven production dashboard in Excel tracking machine runtime, downtime, tool life, and output KPIs — enabling real-time operational decisions.
- Conducted capability assessments for 12 machine shop operators; rebalanced task assignments to align expertise with setup complexity, **increasing throughput by 15%**.
- Leading decentralization and scalable restructuring of the machine shop, defining new workflows and building repeatable operating processes.

Vendor Management & Leadership

- Manage full vendor sourcing lifecycle for machining, tooling, and fabrication: RFQ creation, technical capability assessment, supplier selection, and price negotiation.
- Certified ISO 9001 Internal Auditor — independently conducting internal audits, compliance reviews, and corrective action (CAPA) processes.
- Designed custom jigs and structural supports improving testing efficiency by **25%** and laser engraving throughput by **50%**.

Engineering Intern | [IPA Private Limited](#) | Bengaluru, IN

Mar 2024 – Aug 2024

- Calibrated UTM using staged dead-weight loading; identified load distribution discrepancies and proposed structural modifications improving calibration accuracy by 15%.
- Validated CNC programs on the shop floor; documented setup sheets, tooling parameters, and machining conditions to establish production-ready standards.

Lead Curriculum Developer – Robotics | [JerseySTEM](#) | Richardson, TX, US (Remote)

May 2024 – Jan 2025

- Designed and delivered modular robotics curriculum applying mechanical engineering principles; reduced build time by 20% while maintaining design complexity across cohorts.

Mechanical Design Engineer | [Anemoi Technologies](#) | Vellore, IN

Jan 2019 – Jan 2020

- Designed a package mounting system in SolidWorks and Fusion 360; achieved 15% material reduction, 25% increase in load capacity, and 30% reduction in design-to-prototype lead time.
- Conducted ANSYS FEA and structural analysis, improving prototype durability by 20% through simulation-driven design decisions.

EDUCATION

MS, Mechanical Engineering

Dec 2023

University of Texas at Dallas | Dallas, TX, US

BTech, Mechanical Engineering

May 2022

Vellore Institute of Technology | Vellore, TN, IN

CERTIFICATIONS

SolidWorks Certified Mechanical Design Associate (CSWA) | Dec 2018 | ID: C-G7WNMWFJGC

ISO 9001 Internal Auditor Certification | Nov 2025