Aakash Gupta

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EDUCATION

University of Florida, *Gainesville, FL* May 2023
MS - Mechanical Engineering [GPA: 3.7/4]

Guru Gobind Singh Indraprastha University, *Delhi, India* May 2018
BTech - Mechanical Engineering [CPI: 75.7/100]

WORK EXPERIENCE

John Deere, *Fargo, North Dakota* Aug 2023 - Present
Mechanical Design Engineer

- Demonstrated expertise in systems integration, designing high-finish enclosures compliant with IP67, EU RoHS, and ISO standards to house and protect complex custom electronics modules, including PCBAs with integrated sensors and power systems.
- Owned the end-to-end design of thermal management systems for ruggedized, high-power electronics, leading development from initial concept and first-principles analysis through to mass production (>100,000 units/year).
- Validated the thermal management system of electronics enclosures by correlating FEA results with live temperature data from thermocouple testing, ensuring design performance in real-world operating conditions.
- Developed comprehensive mechanical test specifications and procedures, leading Design of Experiments (DOEs) and validation tests (vibration, drop, thermal, torque) to enhance design performance and reliability.
- Served as the lead sustaining engineer for 25+ products, incorporating learning from test campaigns and feedback from fleet operations to perform rapid root cause analysis for field and production issues.
- Applied DFM/DFA to high-pressure die casting (enclosures), injection molding (housings), sheet metal forming (covers), and additive manufacturing (prototyping).
- Created detailed 3D CAD assembly models and 2D production drawings with GD&T(ASME Y14.5 2018), performing stack-up analysis to ensure precise fitment for high-volume assembly.
- Dived deep into technical challenges using analytic problem-solving skills (FMEA, 5 Whys, Fishbone) and statistical process control (Cpk) to improve manufacturing yields and field reliability.
- Created and maintained technical documentation including BOMs, Change Orders, and manufacturing work instructions, ensuring traceability and clarity for production teams.
- Coordinated with suppliers across China, India, USA, and Mexico to ensure efficient manufacturing of parts and assemblies.

University of Florida, *Gainesville, Florida* Aug 2022 - May 2023
Teacher Assistant

- Assisted in developing and delivering Machine Design and CAD course content, enhancing student engagement.
- Guided students in understanding machine design principles, improving their academic performance.
- Evaluated student progress and provided feedback, fostering better comprehension of concepts.
- Supported students with design projects, helping them identify and solve complex design problems.

Goodwill Motor, *Delhi, India* Nov 2018 - Apr 2021
Mechanical Design Engineer

- Engineered and designed aluminum alloy engine components, boosting efficiency by 15% and cutting costs by 20%.
- Created accurate 3D models of pistons and connecting rods in Solidworks, along with detailed 2D drawings with GD&T.
- Decomposed mechanical systems into subsystems, evaluated alternatives, and selected optimal designs.
- Managed project timelines with Teamcenter PLM, keeping track of part stages and completion schedules.
- Produced ASME Y14.5 GD&T compliant drawings, reducing manufacturing errors by 20% and ensuring integration.

MAE Dept. GGSIPU, *Delhi, India* Aug 2017 - Jun 2018
Design Engineer (VISION-ELECTRIC VEHICLE)

- Designed electric vehicle chassis and drive line systems using Solidworks, achieving optimal efficiency.
- Evaluated work specifications, drawings, and technical manuals to ensure alignment with objectives.
- Reduced Bill of Materials(BOM) by 36% through innovative design, FEA modeling, and process optimization.
- Constructed electric vehicles using conventional and non- conventional manufacturing techniques such as Metal Stamping, CNC Machining, and 3D printing.

PROJECTS

Mark I Dancing Robot, *University Of Florida, Gainesville, Florida*
Mechanical Engineer

- Designed a 3-legged obstacle-avoiding dance robot from scratch using SolidWorks, 3D printing, and non-conventional machining.
- Developed custom housing for Raspberry Pi 3, servo motors, battery, and sensors, optimizing placement to maintain a low center of gravity for stability during movement.

Autonomous Navigation Robot, *University Of Florida, Gainesville, Florida*
Mechanical Engineer

- Designed a compact, autonomous robot that maps and navigates areas autonomously.
- Utilized 3D printing, CAD software, and custom parts to create an efficient frame and housing for sensors, motors, and electronics.
- Managed part placement and wiring for optimal functionality.

Mini UAV, *University Of Florida, Gainesville, Florida*
Mechanical Engineer

- Designed a 4-wheel robot for military reconnaissance, capable of accessing tight spaces for intel gathering without detection.
- Created compact housing, covers, and frames to house electronics, sensors, and motors within a small footprint.

DRONE ARC, *University Of Florida, Gainesville, Florida*
Mechanical Engineer

- Designed a reinforced lightweight skeleton for drones, creating housing for all components. The skeleton was 20% lighter and 30% stronger than popular alternatives, using carbon fiber for durability and reusability in case of crashes

SKILLS

Designing Electronic Consumer Products and Electromechanical Systems, 3D CAD Modeling (NX, Creo, Solidworks, ONSHAPE), Stack-up Tolerance Analysis, Geometric Dimensioning and Tolerancing (GD&T), Design for Assembly (DFA), Design for Manufacturing (DFM), DFMEA, Design of Experiments (DOE), Finite Element Analysis (FEA), Solidworks Simulation, Testing, Validation, Casting, Injection Moulding, Metal Stamping, Thermoforming, Bonding, Prototyping, 3D Printing, Advanced Manufacturing, Cross-Functional, Collaboration, Technical Documentations, Supplier Collaboration, Heat Treatment, Structural Design, Strong Fundamentals of Mechanical Engineering, Design for Mass Manufacturing, CMM, Python, Java, Matlab.

ACHIEVEMENTS AND EXTRACURRICULAR ACTIVITIES

- Academic Excellence - Received certificate of merit by securing a position among the top 5% in the University.
- Team Lead Robotic Club MVSIT.
- Achievement Award Scholarship - University Of Florida

CERTIFICATES

- TOLERANCE STACK-UP (JOHN DEERE)
- GEOMETRIC DIMENSIONING AND TOLERANCING (JOHN DEERE)
- ADVANCED MANUFACTURING (UNIVERSITY OF FLORIDA)
- DIPLOMA IN DESIGN (SOLIDWORKS AND AUTOCAD) (CADD CENTRE)