Hector Moya

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Experience

Mechanical Design Engineer, Square One Armoring Services – Miami, FL Nov 2024 – Sep 2025

- Engineered a custom center console for a Nissan Patrol within OEM dimensional and tolerance requirements, delivering a perfect first-pass fit that integrated accessory and electrical hardware space considerations
- Conducted detailed reviews of engineering drawings and technical documentation, ensuring strict adherence to standards such as ASME-Y14.5
- Optimized and documented welding and design workflows to improve precision and efficiency
- Mastered the Creaform HandyScan 3D scanner to produce highly accurate models o f automotive components and interiors, enabling reverse engineering for the development of armor-reinforced vehicles for U.S. government applications
- Improved production workflow by 15% by designing welding templates for reinforcements and trim channels using 16-gauge paint-lock steel
- Strengthened production efficiency by integrating 3D scan data into fixture and component designs, minimizing rework and enabling precise fitment of reinforcement assemblies
- Enhanced vehicle reliability by engineering a custom battery tray solution based on frame-beam scans, achieving a structurally secure design without modifying or removing existing hardware

Mechanical Engineer, AmePower – Miami, FL Nov 2021 – Oct 2024

- Led the overhaul of power conversion modules for government transit agencies and the renewable energy sector, implementing modern integrated-gate bipolar transistor modules and multilayered, laminated copper busbars
- Conducted root cause analysis on underperforming leaf spring clamps, and validated findings with manual calculations and SimScale, securing a $70,000 reimbursement from the manufacturer
- Created sheet metal braces for lifting large, non-standard components during packing, reducing workplace injury risks and cutting production task time by 20%
- Automated heat sink power dissipation predictions by developing a Python script utilizing MOSFET datasheet information and heat transfer principles, eliminating the manual process
- Engineered retrofit solutions for decades-old power conversion modules, ensuring seamless integration with existing heat sinks using sheet metal adapter plates and 3D-printed brackets, eliminating retrofit issues
- Designed and implemented a liquid cooling testing loop rated for 1.5 kW heat dissipation, reducing dependency on third-party cooling solutions for testing power modules and inverters
- Devised a testbench enclosure to evaluate gate turn-off thyristor modules, saving 3 man-hours per week during the project duration and maintaining electrical isolation safety with GPO-3 component mounting plates
- Presented innovative project designs at the APTA Transform conference, generating significant interest from multiple clients and leading to potential new project opportunities
- Developed and implemented a thermal paste application method for IGBT modules using a laser-cut stencil and CNC-constructed frame applicator, reducing production task duration by 42% and material consumption by 50%

Skills

CAD: Onshape, SolidWorks
Simulation: SimScale
Programming: Python, C

Education

Florida International University – Bachelor of Science in Mechanical Engineering 2021
University of Florida – Master of Science in Mechanical Engineering Graduating 2027