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EXECUTIVE SUMMARY

I'm a diverse problem solver ready to take on challenges using both mechanical and electrical engineering principles. My background in renewable energy and product design allows me to create practical models, prototypes, and final testing to ensure that the product is always reliable and meets customer's needs, while always keeping in mind the goal of a sustainable future. In renewable energy, I have hands-on experience with designing, installing and troubleshooting PV applications for commercial and industrial clients as well as maintaining and troubleshooting wind turbines. I enjoy working in multi-disciplinary teams and believe that collaboration is the key to providing the best solution for any project.

CENTERS OF EXCELLENCE

Solar Products

- DC optimizers
- Combiner Boxes
- String Inverters
- PV modules
- Monitoring Systems

Construction Practices

- All aspects of commercial and industrial buildings
- Electrical installation (pathway, equipment, devices)
- Quality Control of electrical systems
- Scopes of Work and Specs

Programming

- Matlab
- Python
- Arduino

Codes and Standards

- NEC
- ASTM, ASME
- Bonding and Grounding

Product Development

- Product design
- Innovation
- Installation impacts
- Prototype construction
- Manufacturing processes
- Vendor management
- Lean product design
- Machine shop and tools

Testing and Design Validation

- Electrical validation testing
- Thermal validation testing
- Test equipment and sensors
- Data acquisition
- Test plans and reports

Quality & Reliability

- Failure analysis
- Test plans & test reports
- Data analysis
- Trend analysis
- Electrical Solar installation audit

Applications Engineering

- Sizing for all electrical aspects of PV design
- Installation impacts for design concepts
- Solar installation practices
- Installation time study
- Site audits and audit tools

General Engineering

- Structural analysis & FEA
- Solidworks & Inventor 3D CAD
- AutoCAD, Revit, Recap
- Excel, Excel macros, VB
- Engineering drawings
- Electrical mechanical systems
- Material selection
- Manufacturing processes
- Lean processes

RELEVANT EXPERIENCE

M.C. DEAN – Electrical Engineering and Construction Company

Design Engineer (3 1/2 years)

Responsible for engineering design, management, procurement, installation and testing of low to medium voltage equipment specializing in PV applications and data centers.

- Designed in AutoCAD a complete solar panel electrical system drawing package for a large military base. Sized the wire, breakers, and transformers according to NEC standards along with choosing the correct inverters, optimizers, and combiners.
- Conducted root cause analysis of PV installation issues, specifically underperformance of optimizers.
- Created test scripts and procedures for electrical systems and controls.
- Designed 3D models, in Autodesk Inventor, of electrical rooms to be manufactured for major data centers. Performed FEA analysis of the frame, complete 2D drawing set and Bill of Materials, and electrical equipment testing.
- Designed 3D models and installed instrumentation for wastewater 4 pump stations. This improved the treatment plant's control and automation system resulting in lower maintenance costs, more data collection & forecasting, and a repeatable universal design.
- Created Revit 3D models of wastewater lift stations using 3D scans and designed in AutoCAD power distribution one-lines which involved all associated electrical equipment and specialized Motor Control Centers for energy savings and pump longevity.
- Estimated the electrical installation of numerous projects taking into account labor, material, subcontractors, equipment, and other direct costs which were based on drawings, spec sheets, and NEC standards.

NEXTERA ENERGY – Renewable energy installation and management company

Wind Turbine Technician (1 year)

Responsible for troubleshooting and maintenance of all 200+ wind turbines

- Performed daily maintenance on various components of GE 1.7 Wind Turbines; such as troubleshooting electrical components, checking the validity of gen-brushes, greasing blades and main generator, controlling blade pitch, and replacing oil-pump filters.
- Rewired numerous slip-rings to avoid unnecessary maintenance efforts and prolong life of turbines by several years. Wrote script and procedure that was included in daily maintenance.
- Utilize SCADA software to analyze turbine data, measure performance, energy output, and percentage of functioning turbines.
- Created clearances and conducted high voltage testing when crossing hazardous boundaries to ensure safety of co-workers.

EATON – Power management company

Product Development Engineer (1 year)

Responsible for designing, prototyping, and testing outdoor light fixtures

- Modeled in SolidWorks, prototyped, and quoted a mounting system for a top selling outdoor light fixture to improve sales
- Ran thermal calculations and made prototypes of a waveguide, an acrylic LED refractor, that was tested in extreme temperatures.
- Modeled force deflections and prototyped a spring system for an aluminum bollard to withstand waveguide dimensional variations.
- Conducted thermal waveguide testing and overturn testing on bollard assembly to ensure performance and integrity of products.
- Modeled, created technical drawings & BOM, 3D printed, and quoted components including: grommets, gaskets, and connectors.

EDUCATION & CERTIFICATIONS

B.S., Mechanical Engineering, Georgia Tech

PERSONAL INTERESTS

Makerspaces, Rock Climbing, Trail Running, Soccer, Surfing.