



EXECUTIVE SUMMARY

Proactive, self-starter Mechanical Engineer with 11+ years professional experience in design, contractor, client, and supplier relations. Six years commercial and residential PV products experience including product design for high volume manufacturing. Excellent problem solving and cost-control skills, communication/people skills and team player attitude. Able to learn new concepts quickly and thrive in diverse, fast-paced environments in order to support and lead teams with optimal efficiency.

CENTERS OF EXCELLENCE

Solar Products

- Residential racking
- Flat roof commercial racking
- Module level power electronics
- DC optimizers
- Micro inverters
- String inverters
- Combiner boxes
- Monitoring systems
- PV module construction

Construction Practices

- All aspects of residential and commercial buildings
- Roofs and roof systems

Codes and Standards

- Certification Agencies
- UL 2703
- ASCE 7-05, 7-10, 7-16
- SEAOC PV1, PV2
- UL fire testing
- Bonding and grounding
- Mechanical loading
- NEC, IBC, IRC, IEC
- AISC 360, NDS, ADM
- ASTM, ASME,

Applications Engineering

- Installation impacts for design concepts
- Permitting and permit docs
- Solar installation practices
- Installation time study
- Site audits and audit tools

Product Development

- Product design
- Innovation
- Installation impacts
- Prototype construction
- PE stamp services
- Manufacturing processes
- Lean product design
- Machine shop and tools

Testing and Design Validation

- Boundary layer wind tunnel testing
- Test equipment and sensors
- Data acquisition
- Test facilities and providers
- Test plans and reports

General Engineering

- Structural analysis
- Fastener analysis
- Solidworks 3D CAD
- Fusion 360 CAD
- CAM
- ASME Y14.5, GD&T
- FEA (Solidworks, Fusion 360, Ansys)
- Engineering drawings
- Material selection
- Injection Molding
- Extruding
- Sheetmetal
- Roll forming

Quality & Reliability

- 8d problem solving processes
- Failure analysis
- Test plans & test reports
- Data analysis
- Test equipment
- Solar installation audit
- Vendor/mfg audit
- FMEA

Fabrication

- TIG Welding (Carbon & Stainless steel, Aluminum, Titanium)
- Oxy/Acetylene brazing and cutting
- Plasma Cutting
- Mill and lathe setup and operation, CNC & Manual

Coding

- Python 2.7
- Arduino/ C
- Visual basic/ Excel Macro
- Matlab
- CNC G-Code
- Ladder Logic
- Campbell Sci CR1000

Automotive

- Formula SAE
- Dyno tuning
- ECM tuning
- Intake/Exhaust Design/Fab
- Toyota Diesel Engine Swap
- Custom Dash/ Instrumentation Fab.

RELEVANT EXPERIENCE

SunPower - Photovoltaic Racking & Module Manufacturer and System Installer

2010 – 2017

Senior Product Engineer

- Successfully led numerous 8D analysis projects on T5, T10, PowerGaurd, Helix, and InvisiMount products, solving many systemic field issues - \$10M+ savings in future warranty claims.
- Worked closely with LA county/other AHJs to gain recognition of InvisiMount as a UL2703 listed product – streamlined permitting and reduced cost associated with rework and additional grounding.
- Led multiple cost savings initiatives on Residential product including: Creation of Visual Basic/ Excel based tool to accurately calculate BOM based site conditions, reworked and updated span calculations to reduce roof penetrations, tested and revised anodization spec. for components. - realized 1M per Quarter savings.
- Led large scale array load testing on T5 and Helix products - determined both failure mode and load sharing characteristics. Application of results used to better model ballast requirements. Typical savings of \$200k per large commercial project.
- Led and Managed effort to model site specific wind characteristics including wind directionality and GIS terrain mapping to reduce BOM and cost- Realized > \$5M in project savings.
- Directed Wind Tunnel lab on residential product testing, facilitating design of next generation product.
- Subject Matter Expert all rooftop product, Commercial ballasted/attached and Residential Racking Design
- Extensive knowledge ASCE 7, SEAOC standards including application of wind tunnel Cp values, load sharing, wind exposure zone application and interpolation at boundry conditions, etc. to determine wind loading on rooftop PV modules.

Natel Energy - Manufacturer of Micro Hydro Generators

2010

Mechanical Engineer

- Reviewed drawing and updated GD&T compliance, ensuring minimal part rework
- Resulted in faster turnaround time for part manufacturing and keeps parts cost down.

FLSmith Minerals - Manufacturer of Industrial Filter Presses

2008-2009

Project Engineer

- Technical project lead responsible for system sizing, pressure calculations, flow rates, and integration with customer's industrial process.
- Built complete product including mechanical, electrical, hydraulic, and pneumatic systems prior to

shipment.

- Responsible for complete product test and quality checkout, including troubleshooting relating to electrical and PLC ladder logic.
- Led initial projects for S. Africa and Germany - paved way for \$25M in future projects
- Revamped Project Management Workflow - savings of 100 hours per project
- Created standards manual for hydraulic & component sizing > 50hrs and \$10K savings per project.

US Air Force - 30th Space Command

2004-2007

Systems Engineer

- Headed design team of 30 people on \$14M design and integration effort to build new antenna facility - replaced 35yr old system.
- Managed Engineering Dev. Team on \$6M flight safety control system for use in modern mission control facility - enables shutdown of legacy facility and equipment.
- Directed successful 20-person team implementing \$2M ground system upgrade supporting West Coast Atlas V rocket launches - Vandenberg AFB now able to support Atlas V vehicle launches.

R.A. Jones - Manufacturer of made to order Packaging Machinery

2001-2003

Design Engineer

- Designed Sheet Metal parts for medium volume manufacturing.
- Investigated part issues with in-house manufacturing dept.

EDUCATION & CERTIFICATIONS

B.S., Mechanical Engineering, University of Cincinnati

PERSONAL INTERESTS

Camping, Backpacking, Travel, Fabrication, Motorcycles, Bicycles, Beer Brewing, Coffee Roasting.

RECOMMENDATIONS

“Bryan has the ability to analyze technical aspects of an issue as well as fabricate anything he can imagine. Learning new skills is what motivates Bryan on a daily basis, visions of creative and challenging solutions to the question at hand pushes his broad range of abilities to new levels.

I worked with Bryan extensively in the solar industry. He was equally comfortable presenting to executives as he was on hot roof in an Arizonan summer retrofitting legacy commercial solar roof systems. Bryan has the knowledge and skills to take on any technical issue in the solar sector.”

-Ian Bennett, Group Lead, Rooftop Product Engineering, SunPower

“Bryan has the unique ability to go from spreadsheets and data crunching in the morning to fabricating and building in the afternoon. He is eager to take on a challenge and happy to lend a hand. Bryan takes pride in his

work and I never found issue with his ability to execute the tasks presented to him.

With his inquisitive nature, Bryan has unearthed a number of technical issues and design oversights that engineering teams failed to capture. This resulted in huge savings and costly product failures in the field. Bryan is an asset to any team and I enjoyed having him work for me.”

-John Kapla, Product Manager, Commercial Carports at SunPower Corporation