

BRYAN AUZ

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Orlando, FL Area
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ACADEMIC & CERTIFICATIONS

Bachelor of Science, Mechanical Engineering · University of Central Florida · Orlando, FL	May 2010
SC156: Basic Optics for Engineers, SPIE	April 2022
SC003: Practical Optical System Design, SPIE	April 2022
Machine Learning by Stanford University, Coursera	Jan. 2020
Certified SOLIDWORKS Professional (CSWP), Dassault Systems	Dec. 2018
SC067: Testing and Evaluation of EO Imaging Systems, SPIE	April 2018
SC014: Introduction to Optomechanical Design Course, SPIE	Jan. 2017
Certified SOLIDWORKS Associate (CSWA), Dassault Systems	Feb. 2017
IPC-OVT-54C Certification, Association Connecting Electronics Industries	Dec. 2015
Systematic Molding Course, RJG Inc.	April 2013
Eagle Scout, Boy Scouts of America	April 2004

SKILLS

Design and Drafting

- ASME Y14.5, GD&T application · Y14.41, CAD dimensions · MIL-A-8625, anodize · precision glass molding tooling · glass optics · tolerance analysis · optomechanical assemblies · kinematic mounting · plastic injection molding tooling and components · electronic packaging · electronics thermal management · precision adjustment · mechanism design · vibration and harsh environments · additive manufacturing

CAD Packages and Analysis

- SOLIDWORKS · SOLIDWORKS Simulation Packages (Premium, Flow, Electronics Cooling Module, Plastics) · SOLIDWORKS EPDM · SOLIDWORKS PCB · PTC Creo · Zemax Lens Mechanix · Altair Inspire · National Instruments DIAdem · Altium Designer · Altium MCAD Co-Designer · FEMM

Computer Software

- Microsoft Office · Google Workspace · ERP Systems · Git · Allspice · Linux · Visual Studio Code · Putty · SQL · Godot · Python · C# · .NET · C · C++ · Go · JS · VBA · HTML5 · CSS · PHP7

PUBLICATIONS

Author and Presenter · International Society for Optics and Photonics (SPIE)

- SPIE invited paper published in Proc. of SPIE Vol. 8489, 84890H (2012) "Design considerations and manufacturing limitations of Insert Precision Glass Molding (IPGM)"
- SPIE paper published in Proc. of SPIE Vol. 10110, 1011019 (2017) "Miniature Raman Spectroscopy utilizing stabilized diode lasers and 2D CMOS detector arrays"

Author · International Society for Optics and Photonics (SPIE)

- SPIE paper published in Proc. of SPIE Vol. 10110, 101101L (2017) "A spectroscopic method of determining color of petroleum products using CIE Lab color space with LED illumination"
- SPIE paper published in Proc. of SPIE Vol. 10490, 104900W (2018) "Miniature Raman spectrometer development"

EMPLOYMENT

Director of Engineering, Orlando · Wasatch Photonics

Jan. 2022 – Present

Senior Opto-Mechanical Engineer

www.wasatchphotonics.com

- Project management for multiple OEM and internal development projects ranging from full systems to minor component modifications
- Acted as customer technical interface during project status meetings
- Contributed to company direction by participating and offering insight into latest technology including FPGAs, μ controllers, manufacturing processes, imaging sensors, lasers, and design architectures
- Provided multidisciplinary design guidance and review to engineering staff with a SME focus on opto-mechanical
- Maintained version control systems, licenses to engineering CAD tools
- Raman spectrometer design including optical and electronics packaging, single and multi mode lasers, precision adjustment, thermal management, cosmetic enclosures
- Laser safety analysis for up to class IIIb systems
- Wrote custom software tools interfacing with FPGA and μ C firmware in Python
- Supported continuous improvement initiatives and facilitated closing corrective actions logged by engineering, production, sales, or customers
- Local facility manager for the Orlando facility responsible for local government filings, OSHA safety, site upkeep, budget and performance filings to University of Central Florida business incubation program
- Laser safety officer for the Orlando facility
- Up to five multidisciplinary direct reports
- Responsible for onboarding, offboarding, training

Mechanical Design Engineer IV · FLIR Systems (now Teledyne FLIR)

Mar. 2018 – Jan. 2022

www.flir.com

- Improved customer experience with external electrical connector by implementing quick release fastener to secure external environmental cover
- Optomechanical design for mounting prisms, lenses, beamsplitters, mirrors, and sensors
- Design of FOV and sensor switching mechanisms including motors, bearings, linkages, and hard stops
- Integration and test at individual assembly and full system level to ensure designs meet loading and vibration requirements of fixed and rotary wing airborne gimbals
- Contributed to development of optical window under pressure analysis and design process by incorporating interferometric measurements into the workflow
- Designed enclosure to house dewar and cooler for a degraded visual environment camera which included thermal management solution
- System integration testing of three axis gimbal including interfacing with embedded systems through a serial command line interface, data collection, and analysis
- Vibration data analysis, including writing custom software tools in National Instruments DIAdem to calculate natural frequency response and maximum displacements
- Project management of gimbal payload subassemblies tracking engineering change requests, procurement, initial prototype builds, validation testing, and full production transfer
- ERP system management of components, subassemblies, and engineering changes

Mechanical Engineer III · Visium Resources (contracted to FLIR Systems)

Oct. 2017 – Mar. 2018

- Designed mount and retainer for new BK7 window in existing product line to add functionality
- Integrated new SWIR camera into existing product line by packaging electronics and optics
- Analysis of existing vibration isolator mount in Solidworks Simulation and vibration lab
- Designed new isolator mount to meet existing performance specifications with reduced size and weight

Mechanical Engineer · Ocean Optics

Jan. 2015 – Oct. 2017

www.oceanoptics.com

- Optomechanical design of spectrometers, light sources, and optics accessories
- Electronics packaging including mounting custom PCBAs, touchscreens, SBCs, Switches
- Sheet metal and plastic soft tooling enclosure design
- Optical layout and packaging design utilizing GD&T principles to ensure system performance
- Assembled test fixtures and built prototypes to confirm system performance

- Individual project management for transferring products from engineering to production through the engineering change process in ERP system
- Designed housings and optomechanics for multiple handheld spectrometers
- Incorporated a temperature controlled single mode laser for Raman spectroscopic measurements into spectrometer mounted on a cell phone
- 3D surface modeling to design enclosures for the phone spectrometers which were 3D printed
- Developed spectrometer focusing tool in C# .NET using Ocean Optics omnidriver and spam libraries

Mechanical Engineer and Co-Founder · Mech-Lock LLC (*Entrepreneurial Endeavor*) May 2014 – May 2021

- Mechanical design and electronics packaging for biometric access control device
- Custom membrane switch keypad mechanical layout and graphical design
- Website & company logo design

Mechanical Engineer · OptiGrate Corporation August 2014 & May 2015

www.optigrate.com

- Design and draft detailed 2D drawings for fabrication of glass boule slice holder assembly for use with a QY-P-150M Vertical Interferometer
- Design and selection of o-ring seal including material selection for use with optical index matching fluid
- Design and draft detailed 2D drawings for fabrication of glass furnace stirring mechanism incorporating linear and angular alignment capabilities for the stirring axis

Associate Manufacturing Engineer · Covidien (now Medtronic) Dec. 2012 – Jan. 2015

www.medtronic.com/covidien

- FDA regulated and ISO certified medical supplies manufacturing environment
- ISO 13485 quality standard documentation practices and change control
- Internal and external audit finding root cause analysis, corrective and preventative action planning, execution, and effectiveness checking
- FMEA analysis of mold failures or crashes
- Scientific injection molding studies for plastic injection molding process validation with electric and hydraulic molding machines
- Design review of new injection molding tooling with outside vendors
- Six Sigma manufacturing floor audits and Kaizen events
- Leading cost reduction and continuous improvement projects totaling \$300,000/year
- Safety lock out tag out (LOTO) authorized employee inspections
- Scientific Management Techniques, Inc. certified mechanical aptitude assessment proctor

Mechanical Engineer · LightPath Technologies Dec. 2009 – Dec. 2012

www.lightpath.com

- Optomechanical design of tooling, fixtures, and assemblies for precision molded glass optics
- Material selection for optical tooling and assemblies based on customer inputs and internal capabilities
- Design for Manufacturing analysis (DFMA) of optomechanical components, tooling, and products
- Drafted engineering drawings in accordance with the ASME Y14.5 standards and optical tolerances
- Determined molding process parameters for combinations of glass and tooling materials
- Mechanical design of precision molding machinery components with Solidworks
- Engineering calculations related to optical tolerances, thermal expansion, and optical assembly alignment to support design decisions
- Wrote detailed process work instructions for optical testing and manufacturing
- Maintained part database and developed assembly bills of material within ERP system
- Project management for new products from design through high volume manufacturing transfer
- Designed laser line module in Solidworks and built prototype for marketing team

Intern to a Component Engineer · Mitsubishi Heavy Industries June 2008 – Dec. 2008

www.mhi.com

- Interpreted blueprints and communicated technical details to shop floor
- Produced work instructions for welding, blending, EDM, and other manufacturing processes