

Zachary A. Carrizales

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CAREER EXPERIENCE:

Fotokite– Mechanical Engineer II

2021-2022

- Responsible for design and development of a rooftop mounted enclosure for a deployable, tethered drone optimized for situational awareness. Common tasks included first principal design, analysis, procurement, engineering level testing, system level verification testing, and transfer to manufacturing.
- Worked to optimize drive-train belt pulley performance resulting in an average of 17% torque reduction.
- Tested vibrational signature to reduce risk of failure before 10k open-close cycles.
- Guided the initial DFA mechanical system analysis to improve total assembly time by 15%.
- Designed the thermoform enclosure component assembly and bonding procedure to reduce scrap assembly rate to below 10%.
- Devised documentation/protocols during development for production readiness and component receiving inspection planning and implementation to verify and mitigate 100K+ risk in receiving out-of-spec components.

Exzactlines LLC– Senior Mechanical Engineer & Product Developer

2018-Present

- Enabled customer-centric product development through all stages of research, ideation, development and DFM/DFA for NewBeeDrone, SDG Innovations LLC, and NikoFilmz.
- Experience with consultation, contract negotiation and bringing products to market. Delivered 8 successful product lines for consumer FPV drone market to meet design, performance, and manufacturability specifications.

PharmaJet– Product Engineer

2021-Nov 2021

- Worked closely as part of a cross functional product development team to produce needle-free vaccine delivery solutions through drafting, revising, and managing technical protocols/reports and all other pertinent production documentation for FDA compliance regulations.
- Executed verification and validation testing on PharmaJet’s disposable vaccine injection capsules to verify quality for production machines with annual, ramping production capabilities to 300MM.
- Helped PharmaJet and partners release the world’s first DNA based vaccine approval in India and delivered using PharmaJet’s ‘Tropis’ delivery solution.

System76 – Junior Mechanical Engineer

2019-2020

- Developed 3 potential external case designs for the launch of a new product segment called the “Thelio Mega”.
- Unlocked new market segment addressing customer feedback estimated at \$100k+ in additional revenue.
- Designed isolated cooling channels for increased CPU and GPU cooling efficiency.
- Designed a modular, slotted hard-drive storage system that reduced the subassembly part count from 3 to 1.

ADDITIONAL EXPERIENCE:

Boa Technology – Inspection Technician I

2018-2019

- Inspected plastic parts using advanced vision systems to meet product specifications, GD&T requirements, and quality processing characteristics for the qualification of production molds.

Trifecta Medical, LLC – Project Manager & Mechanical Designer

2017-2018

- Developed and produced orthopedic, sheet metal cases and trays for surgical instruments and implants for protecting them during hospital steam autoclave sterilization process.

Idea2Product 3D Printing and Scanning lab – Senior Consultant

2014-2016

- Consultation for mechanical engineering design and additive manufacturing technology.

COMMUNITY INVOLVEMENT:

Colorado Office of Economic Development - Advanced Industries Grant Evaluator

2022-Present

EDUCATION:

Colorado State University

B.S. Mechanical Engineering

SKILLS & SOFTWARE:

Autodesk Fusion360

Product Development

Composite Materials

SolidWorks

Project Management

Prototype Development

Sheet Metal Design

Plastic Injection Molding

Advanced Optical Inspection

Microsoft Office Suite

Additive Manufacturing

Customer Relations