

# MICHAEL VASQUEZ

Danbury, CT • (203) 571-2052 • mvas8037@gmail.com • [www.mikevasquez.com](http://www.mikevasquez.com)

U.S. Citizen • Clearance Eligible

## PROFESSIONAL SUMMARY

---

Mechanical Engineer with hands-on product development and manufacturing engineering experience across aerospace lighting, life-sciences automation, and precision mechanisms. Skilled in CAD, DFM, structural FEA, validation testing, inspection fixturing, and cross-functional engineering under regulated standards including FAA, UL, NEMA, and ISO 9001.

## CORE COMPETENCIES

---

**Design & Analysis:** Mechanical Design, Tolerance Analysis, FEA (Static), DFM/DFA, Requirements Analysis, DOE, Gauge R&R, Root Cause Analysis

**CAD/CAE Tools:** SolidWorks, Creo, Fusion 360, AutoCAD, OnShape

**Modeling, Simulation & Programming:** MATLAB, Simulink, C++, Java

**Manufacturing & Metrology:** CNC (Mill/Lathe), Injection Molding, Sheet Metal, Additive Manufacturing (FDM/SLA), Ultrasonic Welding, Fanuc/Epson Robot Programming, Machine Vision, CMM, ShapeGrabber Ai620

**Certifications:** GD&T Professional (ASME Y14.5), CSWA Mechanical Design, CSWA Additive Manufacturing

## PROFESSIONAL EXPERIENCE

---

**Mechanical Engineer** — Point Lighting Corporation, *Bloomfield, CT* *June 2025 – Present*

- Own full product lifecycle engineering, including requirements, CAD, prototyping, qualification testing, and certification, for FAA-compliant aerospace obstruction lighting under ISO 9001; serve as sole ME across NPI, legacy product maintenance, QA, documentation, and electrical diagrams.
- Designed injection-molded junction box to replace cast aluminum predecessor, reducing unit cost by ~70% while maintaining UL 50E and NEMA 4X compliance.
- Developed solar-powered FAA L-810/L-864 mounting fixture; reduced BOM cost by over 40% and expanded compatibility across multiple product lines.
- Restructured rapid prototyping workflow, cutting prototype cost by 90% while preserving FAA-compliant test fidelity.

**Manufacturing Engineering Intern** — ThermoFisher Scientific, *Penfield, NY* *Jan – Aug 2023, Jan – Aug 2024*

- Resolved an EHS risk in a repetitive production-line latching operation by designing a precision-machined multi-part assembly; reduced required force by 30% and enabled single-arm operation.
- Deployed automated part-presence detection systems across production lines, increasing first-pass yield by 60%.
- Reconfigured PLC controls and Epson 6-DoF robot arm sequencing, including vision system integration, on capping cell, increasing part yield by 18%.
- Engineered an automated ultrasonic welding cell for a new product assembly process, achieving 98% part yield.

## ENGINEERING PROJECTS

---

**Custom FPV Drone** *Dec 2024 – Present*

- Built a MATLAB flight dynamics simulator from first principles to derive terminal velocity and impact load cases for downstream structural analysis.
- Performed FEA-driven arm optimization in SolidWorks Simulation across side, bending, and max-acceleration load cases; achieved FOS of 2 with sacrificial geometry designed to fracture outboard of the central frame, protecting avionics.

**Binder-Jet Bone 3D Printer** *Aug 2024 – Apr 2025*

- Led an 8-engineer team to scale an open-source binder-jet AM platform 75% for printing bone scaffolds with RevBio Tetranite bioactive adhesive.
- Designed a 2-DoF compliant Z-axis coupling and split-half piston sleeve to resolve tolerance stack-up, tune powder seal compression, and reduce tooling cost.

**Three-Stage Helical Planetary Gearbox** *Jan – Aug 2024*

- Designed a 27:1 planetary gearbox to motorize a standing desk; iterated spur to helical gears to reduce noise, redesigned planet carrier to resolve v1 torsional failure, and validated at ~3× FOS through load testing and dynamic analysis.

## LEADERSHIP

---

**President** — RIT VEX U Robotics Team, *Rochester, NY* *Aug 2017 – May 2022*

- Led 15+ member hardware/software sub-teams through design, fabrication, and integration of two competition robots; won the Innovate Award at VEX U World Championships and ranked 3rd in qualifications.
- Served as sole CAD designer and primary fabricator for multiple competition robots, each comprising hundreds of parts across complex multi-subassembly architectures; developed parallel-PID controller with odometry-based localization for autonomous disturbance rejection.

## EDUCATION

---

**B.S. Mechanical Engineering** — *Rochester Institute of Technology* *Aug 2020 – May 2025*