

# ISAAC R. VASQUEZ

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## EDUCATION

Rochester Institute of Technology | GPA: 3.86 | Dean's List: Fall 2019 – Spring 2024

Rochester, NY

### *Master of Science in Manufacturing and Mechanical Systems Integration*

May 2024

- **Concentration:** Robotics and Advanced Manufacturing Systems
- **Relevant Coursework:** Systems Fundamentals, SMT Manufacturing, Applied Finite Element Analysis, Robotics & Vision, Simulation Analysis, Project Management, Lean Six Sigma for Design/Manufacturing, Design of Experiment, Robots & CNC

### *Bachelor of Science in Mechanical Engineering Technology*

May 2024

2024 Elected College Graduate Delegate | Outstanding Undergraduate Scholar Award | 2022 RIT Honor's College Elected Representative Student Ambassador | Lab Manager | Certified Six Sigma Greenbelt (DMAIC & DMADV) | RIT Honors Program

## EXPERIENCE

### Lockheed Martin (*Rotary Missions Systems*)

May 2022 – August 2022

Materials and Processing Engineer (Co-op)

Owego, NY

- Designed a universal baseplate across four HAAS CNCs—improving scheduling flexibility and overall production throughput.
- Led the complete organization and system tracking of tombstones for over 25 CNCs—reducing setup times by 25% (15 minutes).
- Designed a new parts tray for a UR Co-bot machine tending process—increasing quantity from 30 to 50 parts (67% increase)

### General Motors

June 2021 – December 2021

Manufacturing Quality Engineer (Co-op)

Rochester, NY

- Conducted two pilot studies using RED X methodology to assess effects of supplier variation on fuel rail inlet braze success.
- Designed a guardrail fixture tailored for integration within a robotic weld work cell—reducing scrap by 50%.
- Developed a Power BI dashboard using SQL to display the true position of features built on a fuel rail, updated hourly for workers.
- Presented daily FTQ, scrap rates, and scrap costs to the fuel rail department, along with weekly and monthly reports to managers.

## PROJECTS

### Machine Vision Robotic Tool Grinding Work Cell (*Master's Capstone*)

June 2023 – May 2024

- Developed a modular machine vision robotic tool grinding work cell, integrating an ABB CRB 15000 Co-bot, Cognex In-Sight 5100, and Allen Bradley L16ER-BB1B CompactLogix PLC using Agile methodology for rapid iteration.
- Leveraged ABB's Force Control license to apply a consistent 3N force on belt sander to achieve chamfer grind.
- Integrated Cognex's In-Sight Explorer software to automate the machine vision inspection process, achieving angle detection  $\pm 1^\circ$ .
- Deployed Ethernet/IP communication protocol to facilitate seamless data exchange and control between 3 external devices.

### Medical Supplies Drone (*Senior Design Project*)

January 2023 – May 2023

- Utilized DMADV Six Sigma methodology to design, build, and test a drone prototype, achieving 2kg payload capacity.
- Team of four engineered entire drone, including Arduino programming, electrical circuit design, 3D modeling, and related research.
- Designed drone arms and electrical casing, rapidly iterated based on FEA, tolerance stack-ups, and first principles.

## ACTIVITIES/EXTRA-CURRICULAR

### RIT Launch Initiative

2021 – 2022

- Led design of a hydraulic gimbal to enable combustion chamber steering for the Liquid Propulsion Team, while supporting the development of the club's L3 rocket competing at the Intercollegiate Rocket Engineering Competition (IREC).

### RIT SAE Baja

2020 – 2021

- Machined various jigs for car's suspension, welded brackets onto frame, and supported drive trials onsite at Baja SAE races.

RIT Football Club (2019 – 2024) | My Brother's Keeper (2018 – Present) | Society of Hispanic Professional Engineers (2021 – 2024)

## SKILLS

**Computer:** SolidWorks (CAD & Flow Simulation) [Certified Associate], Creo, ABB RobotStudio (RAPID), ANSYS, MATLAB, Python, SQL, Arduino, LabVIEW, Studio 5000, Automation Studio, Simio, In-Sight Explorer, Minitab, JMP, Microsoft Office

**Machine:** ABB, FANUC, 3D printers, and various metrology tools (CMMs, tensiometer, etc.). Exposure to mill, lathe, MIG & TIG welding.

**Languages:** English (Native), Spanish (Near- Native), ASL (Accredited Immersion/Basic)