

# Alberto J. Lopez

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## EXPERIENCE

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### Software Engineer at Pratt & Whitney

June 2023 - Present

- Designed and implemented flexible, scalable data analysis tools for neural net models, contributing to improved process efficiency.
- Designed and implemented auditing tools for our neural net models, and their deployment environments.
- Collaborated with cross-functional teams using Agile methodologies to drive product development, ensuring alignment with project timelines and goals.
- Developed and maintained APIs and data access tools, enhancing data-driven decision-making in process optimization.
- Programmed in Python, C++, SQL, and bash to create and automate productivity and quality tools, contributing to overall process improvement.

### Process Development Engineer at Artifex Solutions LLC

May 2022 - June 2023

- Led laser marking process development and validation, optimizing parameters for medical device applications.
- Executed Validation Plans for CNC machine processes, ensuring precision and repeatability in manufacturing operations.
- Designed and implemented automated quality control processes for Class II medical devices, including orthopedic implants.
- Developed custom fixturing for CMM, laser marking, and vision quality tools using GD&T principles, managing the entire process from design to manufacturing as design engineer.
- Led the development of a CMM quality process using a Zeiss Contura, reducing QC turnaround time from 10 days to 1 hours per batch.
- Wrote and executed a risk-based Validation Plan for Zeiss Contura CMM, ensuring regulatory compliance.
- Applied GD&T standard ANSI Y14.5 for detailed manufacturing drawings and fixture design.

## EDUCATION

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### M.S. in Mechanical Engineering

Northeastern University - Starting 2025

### B.S. in Mechanical Engineering - Aerodynamics Concentration

The Catholic University of America — August 2018 - May 2022

## SKILLS

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**CAD:** SolidWorks, Onshape, Fusion360

**Manufacturing Processes:** Laser marking, CNC machining, 3D printing, CMM programming/operation

**Design:** GD&T, fixture design, mechanical systems design

**Analysis:** pFMEA, Gage R&R, Test Method Validation

**Programming:** Python, Javascript, SQL, Java, C++, bash

## PROJECTS

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### CineBud

*Personal Project* – AI powered content-based filtering application using HTML, CSS, React.js, Python, and MongoDB.

### Search and Rescue Autonomous Drone

*Capstone Project* – quadcopter drone with thermal and optical imaging, as well as sensing technologies that detected heat signatures with a collision avoidance system.

## INTERESTS

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**Running:** Reykjavik Marathon 2024, Double Blossom Race DC 2024, Manati Half Marathon 2023

**Watersports:** Wing-surfing, sailing (Florida to Puerto Rico), scuba diving (PADI Open Water Diver)