

Jonathan Duarte

MECHANICAL ENGINEER

United States

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“Motivated dual degree candidate seeking a challenging technical position with a focus on development.”

Education

University of Notre Dame

B.S. IN MECHANICAL ENGINEERING

Notre Dame, Indiana, USA

2018

Assumption University

B.A. IN MATHEMATICS

Worcester, Massachusetts, USA

2017

Skills

Software

SOLIDWORKS, Zemax, FEA

Programming

Excel VBA, Java, MATLAB, Python

Mechanical Tools

Calipers, Depth Gauges, Micrometers, Multimeter, Sin Bar, Interferometer, Spectrometers

Experience

FLIR Systems, Inc.

MECHANICAL DESIGN ENGINEER (CONTRACT)

Marlborough, MA, USA

August 2019 - May 2020

- Planned and executed blueprints and technical drawings to new company template for state-of-the-art high-capacity infrared optic-mechanical systems, increasing industrial output by 20%
- Interpreted and implemented optic-mechanical designs through tolerance analysis on ASME Y14.5-2009 within a variety of programs simultaneously.
- Managed engineering change notice process while liaising with manufacturing operations

Worcester Polytechnic Institute

MECHANICAL ENGINEERING INTERN

Worcester, MA, USA

June 2015 - August 2015

- Researched and identified Nacre's mechanical structure through sample electron microscope imaging.
- Assembled finite-element models based on Nacre's structure through Abaqus FEA.
- Stabilized Nacre's finite element models with given forces, reactants, elasticity, and boundary conditions.

Personal Projects

Portfolio Website

HTML, CSS, JAVASCRIPT

May 2019

- Designed a responsive personal portfolio to showcase my skills and abilities within the mechanical engineering field.
- Utilized Font Awesome, wow.js and smooth scroll to beautifully capture browsing in all screen sizes.

SOLIDWORKS Improved Robot Assembly

MATLAB, SOLIDWORKS

March 2019

- Designed a 4 linked 1/3 scale industrial arm robot that performed a pick and place kinematics simulation.
- Created a MATLAB GUI interface that sent lateral, longitudinal, and angular commands to the robot.
- Used MATLAB workspace to stabilize feedback within a closed loop control during intensive operations.

Dynamic Windshield Simulation Project

MATLAB

December 2018

- Performed a dynamic simulation of the four-bar windshield wiper mechanism driven by the AM equipment 238 motor.
- Maintained an appropriate response time of 7% to test the torque limits of the AM 238 using Newton's Method.
- Data resulted in a positive crank velocities with minimal fluctuations for long periods of its life cycle.