# Jonathan Duarte

Motivated duel degree candidate seeking a challenging technical position with a focus on development

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## EDUCATION

### B.S. in Mechanical Engineering
*University of Notre Dame, May 2018*

### B.A. in Mathematics
*Assumption College, May 2017*

- **Skills:** C and C++, Java, Fortran, LaTeX, MATLAB, HTML5, CSS3, Javascript, Solid Works
- **Courses:** C++, Introduction to Electrical Engineering, Orbital and Space Dynamics, Wind Turbine Performance Control and Design, Differential Equations Vibrations and Controls, Heat Transfer, Fluid Mechanics

## EXPERIENCE

### Mechanical Engineer
*Yushin America Inc., Cranston RI*
*November 2018*

- Performed training for an End Of Arm Tool curriculum using tools such as Oracle and SOLIDWORKS to quote, design, confirm, and ship customized robots
- Assisted in sophisticated robot designs of other mechanical engineers and kept record of any failures

### Mechanical Engineering Intern
*Worcester Polytechnic Institute, Worcester MA*
*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
- Stabilized Nacre's finite element models with given forces, reactants, elasticity, and boundary conditions

## PROJECTS

### SOLIDWORKS Improved Robot Assembly
*March 2019*

- Designed a robot which could perform a simple kinematics simulation of its trajectory
- The robot was created and assembled in SOLIDWORKS while GUI program was generated and controlled by MATLAB

### Dynamic Windshield Simulation Project
*December 2018*

- Performed a dynamic simulation of the four-bar windshield wiper mechanism driven by the AM equipment 328 motor
- The end result corresponds to positive crank velocities with minimal fluctuations for long periods of its life cycle

### Central Difference FORTAN Program
*November 2018*

- Estimated the derivative of a function based on its known value at discrete points using the central difference method.
- Implemented an error assessment to determine how the magnitude error in the first derivative

### Senior Design: Automated Gantry
*January 2018 – May 2018*

- In a team of six, we conceptualized and assembled an indoor miniaturized linear gantry to assist automated manufacturing line for AME Automation
- I implemented a State Space Control algorithm into MATLAB by taking the inverse kinematics of the gantry which gives the complete movement of the machine