

Jonathan Duarte

Motivated dual 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
- **Experience in:** Linked List, Vectors / ArrayList, Hash Tables, Binary Search, Quick Sort, Recursion, Dynamic Programming, Big O Time & Space, Object-Oriented Programming.

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