

# Jonathan Duarte

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

[jonathanduarte313@gmail.com](mailto:jonathanduarte313@gmail.com) ♦ Central Falls, RI, 02863 ♦ (401) 390-1556 ♦ [www.jaytsystems.com](http://www.jaytsystems.com)

## 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
- **Knowledgeable 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