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, Windows Command Prompt, Abaqus, Fortran, LaTeX, MATLAB, Mathematica, Solid Works, PTC Creo Parametric, HTML5
- **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

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 the MATLAB GUI program was generated by MATLAB

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

Notre Dame Rocketry Team
October 2017 – April 2018

- Brainstormed and modeled an initial design of a small rover using SOLIDWORKS for prototyping analysis
- Participated as a NDRT Safety Officer for the construction, testing, and launch of the rover body that includes possible safety hazards for team members

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

Dynamic Simulation Project
November 2017 – December 2017

- In a team of three for my Mechanisms and Machines course, I helped conceptualize and execute dynamic simulation of the four-bar windshield wiper mechanism driven by a gear motor

Notre Dame Formula Hybrid Racing
September 2015 – April 2016

- Analyzed and modeled a preliminary design for a real sized go cart with a standard $500 motorcycle engine and $200 state of-the-art suspensions for future construction in Solid Works
- Developed and stress tested a model for the Go-Cart's suspension and axial body through the Solid Works and MATLAB Sim Mechanics