Darian Abreu, Engineer-in-Training

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EDUCATION

University of Delaware — Newark, DE
Bachelor of Science, College of Engineering — May 2017
Major: Mechanical Engineering | Minors: Electrical Engineering and Mathematics
Cumulative GPA: 3.38 | **Major GPA**: 3.35

RELEVANT COURSE PROJECTS

***Undercarriage Decontamination System** – United States Department of Agriculture* — August 2016 - May 2017
- Developed an easy to build, cost-effective, open-source undercarriage decontamination system to disinfect vehicles and prevent disease outbreaks on small farms in the United States by reducing viral load of a disease by at least 90%
- Re-engineered comparable market designs to reduce cost by over 99% while utilizing only 6% of provided budget

***Beach Wheelchair** – Dr. Peter Popper* — February 2016 - May 2016
- Produced an affordable, transportable solution for wheelchair users to maneuver on sand and disassemble into approximately 13 cubic feet of storage volume
- Collaborated with a team of six engineers to create beach wheelchair concept at an 80% lower price-point than bench-marked market designs, by minimizing parts needed and using material analyses to optimize two-wheel design

***ADVIA 1800 Impeller Drive Mechanism** – Siemens Healthcare Diagnostics* — September 2015 - December 2015
- Redesigned Siemens' ADVIA 1800 Clinical Chemistry System drive mechanism to allow adjustable horizontal and vertical positions of impeller, while meeting performance expectations of accuracy for rapid chemical analysis of distinct fluids
- Implemented spring-loaded mechanism with an injection-molded cam to implement a cost-effective solution to previously, fixed single-plane motion impeller handling up to 1800 tests per hour

***College Dorm or Apartment Furniture** – University of Delaware* — February 2015 - May 2015
- Constructed an affordable, multi-functional, appealing desk or couch to optimize space in college setting for $125

EXPERIENCE

Construction Manager – *Frank's Drywall* (Rockland, NY) — June 2019 - September 2020
- Implemented more than 3 process improvements during first year in position, including improvement of customer service model; compiled functions for Google Sheet to dynamically generate invoices/estimates and autonomously produce customer-email interaction with PDF attachment
- Interpreted plans, studying 20+ isometric drawings to formulate estimates for gypsum board, acoustical ceilings, or framing

Pool and Aquatic Feature Engineer – *Aquatectonic/Trace Pool Design* (White Plains, NY) — November 2017 - May 2019
- Coordinated and interpreted multi-disciplinary drawings to create plans, sections, details, schedules, and P&ID diagrams for lap and leisure pools, whirlpool spas, cold plunge pools, water features, steam rooms and saunas using AutoCAD, including 1st zero-entry steel wading-pool at firm
- Prepared construction drawings for over 50+ pools, spas, steam rooms and water features; consolidated piping layout drawings, equipment specifications, mechanical equipment sizing, filtration system designs, utility requirements, and hydraulic calculations to comply with state regulations and approval standards

Research and Development Intern - *United States Dept. of Agriculture* (Riverdale, MD) — February 2017 - May 2017
- Earned lead engineer tasked with improving undercarriage system to adopt solar heating and auto-metering for under $100

Teaching Assistant for Heat Transfer, Fluid Mechanics I & Thermodynamics – (Newark, DE) — August 2016 - May 2017
- Established interpersonal skills in working with diverse populations of students while leading classes of up to 40 students to provoke innovative thinking through communication and management, as well as office hours for individual help

SKILLS

Communication: Excellent Verbal, Written, and Analytical Skills, Proficient in Spanish (Reading, Writing, and Speaking)
Languages & Operating Systems: Python, Linux, Windows, Unix, Mathematica, C, C++, Excel VBA, Java, JavaScript, HTML
Machining Tools: Milling Machines, Computerized Numerical Control (CNC), Lathes, Band Saws, Table Saws, Drill Presses
Software: SolidWorks, SolidWorks Finite Element Analysis, AutoCAD, Revit, Arduino, MATLAB, Adobe Acrobat, Bluebeam Revu, Beamchek, Cambridge Engineering Selector, LabVIEW, Microsoft Office

ACHIEVEMENTS AND COMMUNITY INVOLVEMENT

American Society of Mechanical Engineers – Member — September 2015 – Present
American Cancer Society – Volunteer — September 2014 - Present
Engineer-in-Training - State of New York, Certification #1716704 — June 2018
Benjamin E. Herring Scholarship - University of Delaware — July 2015 – May 2017
Dean's List – University of Delaware, 6 Semesters — December 2013 - May 2017
Presidential Scholarship – University of Delaware — August 2013 – May 2017
Environmental Design Discipline Award - US Dept. of Agriculture, Undercarriage Decontamination System — December 2016
1st Place Design – Siemens Healthcare Diagnostics, ADVIA 1800 Impeller Drive Mechanism — December 2015