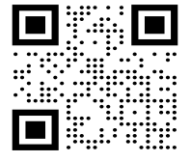


Darian Abreu, Engineer-in-Training

dariannn@udel.edu | (845) 826-1635 | www.dabreu.net | Pomona, NY 10970



EDUCATION

University of Delaware, Newark, DE

May 2017

College of Engineering, Bachelor of Science

Major: *Mechanical Engineering* | Minors: *Electrical and Computer Engineering & Mathematics*

Cumulative GPA: 3.38 | Major GPA: 3.35

Achievements or Awards: 1st Place Design (ADVIA 1800 Impeller Drive Mechanism), Benjamin E. Herring Scholarship, Dean's List (6 Semesters), Environmental Design Discipline Award (Undercarriage Decontamination System), Presidential Scholarship

RELEVANT COURSE PROJECTS

Undercarriage Decontamination System – United States Department of Agriculture

- 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%
- Improved comparable market designs to reduce cost by over 99% while utilizing only 6% of provided budget

Human Powered Beach Wheelchair – Dr. Peter Popper

- Designed an affordable and transportable solution able to withstand over 400 pounds, that provides a safe and practical method to transport wheelchair users onto sand and disassembles into approximately 13 cubic feet of storage volume

ADVIA 1800 Impeller Drive Mechanism – Siemens Healthcare Diagnostics

- 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 analyses of distinct fluids
- Implemented spring-loaded mechanism with an injection-molded cam through testing leveraging SolidWorks, to compose a cost-effective solution to previously fixed single-plane motion impeller capable of handling up to 1800 tests per hour

EXPERIENCE

Public Consulting Group, Remote, New York

December 2020 - Present

Contact Tracer

- Utilized a web-based client resource management (CRM) platform to communicate with contacts of anyone diagnosed with COVID-19 in a professional and empathetic manner while maintaining emotional and cultural awareness
- Obtained position on team of 15 tracers to clean up records with correct school legal name and managed biweekly data entry of school exposure line lists of over 80 students and staff in liaison with school specialist and supervisor
- Designed and supervised spreadsheet for team to input, monitor and sort 2400 contacts by quarantine date using Excel

Frank's Drywall, Rockland County, New York

June 2019 - November 2020

Construction Manager

- Refined more than 3 process improvements for first year, including compiling functions for Google Sheet to dynamically generate invoices or estimates and autonomously produce customer-email interaction with PDF attachment from Google Sheet
- Examined plans, studying 20+ isometric drawings to formulate estimates for framing, gypsum board, acoustical ceilings, or floors

Aquatectonic/Lothrop Associates LLP, White Plains, New York

November 2017 - May 2019

Design/Technical Engineer

- Coordinated and interpreted multi-disciplinary drawings to create plans, sections, details, schedules, and P&ID diagrams for lap, leisure or cold plunge commercial pools, whirlpool spas, water features, steam rooms and saunas using AutoCAD, including 1st zero-entry steel construction wading pool at the firm
- Prepared construction drawings for over 50 commercial 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 set by New York State Department of Health

University of Delaware Mechanical Engineering Dept., Newark, Delaware

August 2016 - May 2017

Teaching Assistant for Heat Transfer, Thermodynamics and Fluid Mechanics I

- 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 holding office hours for individual help

SKILLS

- **Computer & Software:** Windows, Linux, Python, Mathematica, C++, Excel VBA, GitHub, JavaScript, HTML, SolidWorks, SolidWorks FEA, AutoCAD, Revit, Arduino, MATLAB, Adobe Acrobat, Bluebeam Revu, Beamchek, Cambridge Engineering Selector, LabVIEW, PLC Programming, Realtime Landscaping Architect, Microsoft Office and Teams (Word, Excel, PowerPoint, Outlook, OneNote)
- **Languages & Communication:** Bilingual in Spanish (Reading, Writing and Speaking), Excellent Verbal, Written and Analytical Skills
- **Machining Tools:** Milling Machines, Computerized Numerical Control (CNC), Lathes, Band Saws, Table Saws, Drill Presses, Calipers

ACHIEVEMENTS & COMMUNITY INVOLVEMENT

Engineer-in-Training, State of New York, Certification #1716704

June 2018 - Present

American Society of Mechanical Engineers, Member

September 2015 - Present

American Cancer Society, Volunteer

September 2014 - Present