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EDUCATION

University of Maryland College Park, MD
B.S., Chemical Engineering Expected May 2022

- GPA: 4.00
- Banneker/Key 4-Year Full Scholarship
- Honors College – Advanced Cybersecurity Experience for Students Living/Learning Program
- Activities: ACES Programming Competition Team, Banneker/Key Community Volunteer

TECHNICAL EXPERIENCE

ChemE Car Team College Park, MD
Kinetics Subteam Member Jan 2019 – Present

- Design and develop an autonomous vehicle using chemical engineering principles, power production, and reaction kinetics in order to stop a specified distance from a start point
- Prepare stock solutions of sodium hydroxide for team use
- Test various reactions between ethyl acetate and sodium hydroxide to measure conductivity over time and analyze the results using excel
- Design and implement various methods to improve the accuracy of the team's tests, including utilizing more arduinos for more reactions to improve efficiency

Engineers without Borders College Park, MD
EWB Nicaragua Team Member Jan 2019 – Present

- Research methods to deliver drinking water and agricultural irrigation to a village of 500 people by pumping water from a well and delivering it via gravity pipes
- Calculate necessary values for the shock chlorination and continuous treatment of the well
- Research level sensors, dry well sensors, and free chlorine sensors to automate well functions
- Implement CAD software to design well and pump prototypes as well as PVC piping and coupling

UMD Engineering Design Project College Park, MD
Over-Sand Vehicle Subteam Leader Jan 2019 – Present

- Manage a four-person subteam who's mission is to analyze, neutralize, and collect a sample of an acidic pool of water after navigating an obstacle course using an autonomous vehicle
- Create procedure lists and data sheets for chemical tests to be conducted throughout each lab session, and work with the professor to help other groups create similar procedural task lists for their missions
- Use CAD to create and assemble components of the OSV including sensors, mounts, and the base
- Justify battery choices, motor selections, and the overall assembly of the OSV to a board of reviewers

WORK EXPERIENCE

Carpet Land Inc. Towson, MD
Warehouseman Aug 2016 – Jun 2018

- Handled all manual labor activities including both the arrangement and relocation of carpet/flooring samples and finished products
- Controlled the sanitation of the store and lot via careful use of chemicals such as ammonia and bleach
- Organized various projects to improve the aesthetic and efficiency of the store and parking lot area
- Coordinated efforts to turn around the disposal system of the store's material waste

SKILLS

Programming: MATLAB, Arduino, Unix, Linux, BASH Scripting
Design: Sketch Up, Autodesk Inventor Professional, Fusion 360, TinyCad
Software: Excel, Word, Powerpoint
Languages: English, Spanish (Intermediate)