Ruth Agorrilla

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EDUCATION

University of California, Merced | Bachelor of Science, Mechanical Engineering August 2020 – May 2024

- GPA: 3.30 out of 4.0
- Extracurricular Activities: Society of Women Engineers, Solar Energy Association

SKILLS AND ABILITIES

Software: SolidWorks, Microsoft Office
Programming Languages: MATLAB
Spoken Languages: Tagalog, English

WORK EXPERIENCE

Reader September 2023 – Present
University of California, Merced | Merced, CA

- Review and grade homework, quizzes, and exams for a 150+ student engineering economics class.
- Coordinate schedules and grading plans with professor and 3 graders to figure out how to best assess the work of the students in the course.
- Provide feedback for students to illustrate what they can improve on in their future coursework.

Undergraduate Research Assistant - Cobian-Iñiguez Fire Laboratory February 2022 – June 2023
University of California, Merced | Merced, CA

- Lead an independent research project by testing air monitoring sensors to run field studies to measure and understand the degree of how the prevalence of particulate matter (PM) from wildfires impacts the air quality within a given area both indoors and outdoors.
- Analyzed data from field studies to visualize the mass concentration of air when affected by dust particles by creating diagrams and charts that illustrate the trends of particulate matter (PM) accumulation.
- Produced a manual for dust sensor configurations to operate with dashboard created to monitor air quality around campus.

Student Assistant August 2022 – November 2022
University of California, Merced | Merced, CA

- Produced data visualization and preliminary demographics analysis of 3 different International Association of Wildland Fire (IAWF) demographics databases.
- Presented demographic data and calculated plots and analysis results for data based on 1,264 survey responses spanning throughout all databases.
- Examined the representation of Black, Indigenous, and People of Color (BIPOC) communities in wildfire by providing quantitative data analysis to better understand the demographics of the community.

Student Assistant (Intern) August 2021 – January 2022
California State Water Resources Control Board | Riverside, CA

- Developed a general procedure for reviewing wastewater project documentation to submit for approval under 401 Water Quality Certification (WQC) and Waste Discharge Requirement (WDR) regulations.
- Organized 401 Water Quality Certification/Waste Discharge Requirement information and track status of ongoing projects.
- Assisted the National Pollutant Discharge Elimination System (NPDES) unit chief in the organization of dredge and fill impacts, mitigation requirements/compliance and other information within California Integrated Water Quality System (CIWQS) and Stormwater Multiple Application and Report Tracking System (SMARTS) databases.
- Investigated and resolved errors of project information by comparing project proposals and correcting their files within their appropriate electronic databases.

Drone Intern May 2019 – October 2019

Elementary Institute of Science | San Diego, CA

- Collaborated with a team of 8 other interns on a video project to demonstrate the diverse applications of drones and other aircrafts into multiple STEM and non-STEM related fields.
- Obtained a Federal Aviation Administration (FAA) Part 107 Remote Pilot license through developing knowledge on drone and flight regulations and passing the Part 107 certification exam.
- Experimented with the maneuvering of many types of Unmanned Air Vehicles (UAVs), such as DJI and SYMA.

PROJECTS

Thru-Reflector-Wall Non-imaging Solar Cooker | SolidWorks September 2023– Present

- Collaborating with a team of 3 other engineering students to build a reflective funnel for a mass-produced solar cooker.
- Coordinating with project client to create and choose funnel design that will withstand being used in sub-tropical regions.

Solar-Powered Fan | SolidWorks, HTML, CSS July 2023 – August 2023

- Created fan parts from scratch by modeling them on SolidWorks and 3D printing them.
- Applied circuit theory to power the fan using a battery powered through a solar panel to not require electricity for the fan to be operated.
- Published project documentation on GitHub by writing a page with HTML and CSS illustrating the process.