

Gustavo Martin-Vera

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Objective

Motivated and highly skilled engineer seeking a position as a mechanical engineer, leveraging my expertise in SolidWorks, Finite Element Analysis, programming, and project management to contribute to the success of a dynamic team.

Education

University of California Riverside - *Bachelor of Science in Mechanical Engineering*

Skills

Bilingual-Spanish SolidWorks Finite Element Analysis MATLAB Arduino Machining MS Office

Certifications

Certified SolidWorks Associate - Mechanical Design (CSWA)

Certified SolidWorks Associate -Simulation (CSWA-S)

Certified SolidWorks Associate - Additive Manufacturing (CSWA-AM)

Engineering Projects

Unmanned Aerial Vehicle - *Senior Project*

March 2023

- Collaborated with a team of four to design an innovative UAV utilizing lighter-than-air technology as its primary lift source
- Designed and constructed component mounts using SolidWorks, and utilized simulation packages to determine stresses exerted on components
 - Reduced the weight of mounts by 10%
- Implemented obstacle avoidance by programming Arduino microcontrollers to process data from ultrasonic sensors and determine optimal flight path
- Developed a program using Arduino to optimize flight time by adjusting the motor speed based on battery level readings
 - Improved flight duration by 20%

Machine Design Project - *Straw Bridge*

June 2022

- Conducted extensive research and analysis of multiple bridge designs, ultimately selecting and finalizing a design through thorough comparison
- Utilized Finite Element Analysis to analyze stresses and failure modes, and compared the results to hand calculations using Distortion Energy Theory
 - The predicted value deviated from the actual value by 12%
- Analyzed manufacturing process to identify imperfections in our materials and assembled our model with precision to ensure consistent and accurate results

Aerospace Systems Student Club

October 2021 - June 2023

- Contributed to the manufacturing process of the rocket's structure
- Created a jig for fin cage in order to achieve a sliding fit
 - Learned about tolerances due to constraints of internal components
 - Increased material removal efficiency by 30%
- Fabricated the Nose Cone of the rocket using fiberglass and epoxy to ensure durability
 - Responsible for preparing the mold with mold release, cutting long strands of fiberglass, and accurately mixing the resin and hardener of epoxy to the appropriate ratios
 - Applied layers of fiberglass and epoxy using rollers to ensure proper bonding, and removed any excess material after allowing sufficient time for hardening