Vicente Robles

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EDUCATION

PhD, Mechanical Engineering, University of California Riverside, CA 2022
Bachelor's, Physics, Pomona College, Claremont, CA 2016

EXPERIENCE

Optical Engineer: MetroLaser Inc., Laguna Hills, CA Aug 2023 – Present

- Developing a non-intrusive health monitoring system for elemental detection in rocket flows using laser-induced breakdown spectroscopy, with funding by the Department of Defense (DOD)
- Engineered and fabricated a high-pressure aerosol generator for laboratory testing of the monitoring system, utilizing SolidWorks CAD for design and machining in construction
- Ensured compliance with company rules, safety protocols, and EHS guidelines in a clean optical lab, reducing contaminants on optics while meeting deadlines, preparing technical documentation, and submitting reports to funding agencies.

Scientist: Exponent, Natick, MA Sept 2022 – July 2023

- Conducted safety analyses for both consumer electronics and a medical Class II device, involving prototype evaluations through simulations, measurements, and specification sheets according to IEC safety standards.
- Collaborated with engineers and technicians in diverse projects, applying engineering methods to perform failure mode testing, material characterization and optical hazard nominal testing

Mechanical Engineering Researcher: UC Riverside, CA Aug 2016 – June 2022

- Led complex fluid dynamics and heat transfer projects for proposed biomedical applications, focusing on agitation in microfluidics and material perforation for a needle-free proof of concept
- Conducted experiments and data analysis using Python, high-speed imaging, optical techniques and testing equipment, demonstrating proficiency in rapid prototyping and troubleshooting
- Published 6 research papers, mentored 2 undergraduates, and secured a research grant

Avionics Intern: SpaceX, Hawthorne, CA Sep 2015 – May 2016

- Utilized SolidWorks CAD to design and construct a high pressurization system to safely validate the NASA TM X-53692 Standard for leak detection in aerospace subsystems
- Developed a testing process and conducted leak classifications using alternate tracer gasses (dry air, and hydrogen-nitrogen mixture) to compare against the industry standard of helium

SKILLS

Computational:
Solidworks CAD, MATLAB, Python, Origin, ImageJ, Zemax, LabVIEW, Word, Excel, PowerPoint

Technical:
3D printing, Arduino and electronic components, Test equipment (oscilloscopes, signal generators, ect.), Machining and GD&T, Optics (microscopy, fluorescence thermometry, alignment and measurement,), Scanning Electron Microscope (SEM), Atomic Force Microscopy (AFM)

Languages:
Fluent in English and Spanish (speaking, listening, reading, and writing)