JR PEREZ

+1 973-981-4995 • jrp527@lehigh.edu
Boonton, NJ • linkedin.com/in/jrperez

EDUCATION

Lehigh University, Bethlehem, PA

Bachelor of Science in Integrated Degree in Engineering, Arts, and Sciences, in Mechanical Engineering, Product Design

Honors & Awards: Full-ride merit (Trustees') Scholarship, Baker Institute EUREKA Pitch Grant ($500), Student Opportunity Fund Grant ($650), IDEAS Grant ($900)

Relevant Coursework: CAD, Statics, Dynamics, Thermodynamics, Materials & Processes, Numerical Methods, MATLAB

Teaching Experience: Teaching Assistant for FE/ENGR005 - Introduction to Engineering Practice (Embedded systems, Contract grader and work-study tutor for MAT033 - Engineering Materials and Processes

RELATED EXPERIENCE

Energy Systems Technical Lab Analyst   **Sep 2024 - Present**

PC Rossin College of Engineering, Lehigh University

- Co-author ongoing graduate publication on a nuclear engineering project through analysis of regulations, modeling.
- Assist graduate energy systems students with **Python programming** and modeling for **optimization**.

Engineering Peer Tutor   **Sep 2024 - Present**

Center for Academic Success, Lehigh University

- Teach groups of 5-10 undergraduates in materials science and engineering, related to **properties, selection**, and **fabrication** of materials and case study analysis of materials used in transportation systems, microelectronic devices.

Engineering Teaching Assistant   **Aug 2024 - Dec 2024**

PC Rossin College of Engineering, Lehigh University

- Lead laboratory classes of engineering students in C programming for **microcontroller circuits, embedded systems, circuit analysis,** and creating IoT through APIs.

RESEARCH/LABORATORY EXPERIENCE

Undergraduate Research Assistant | Soft-Matter Physics   **Aug 2024 - Present**

Complex Fluids and BioPhotonics Laboratory at HST

- Develop samples for a **U.S. DOD-funded** project to develop **ultrabroadband optical limiting** with colloid solutions.
- Perform **confocal microscopy imaging** and develop phase diagrams for optical limiting for PS, PEG concentrations.
- Present **abstract poster** for the March 2025 American Physical Society global summit.

Undergraduate Research Assistant | Applied Robotics   **Aug 2024 - Present**

Autonomous and Intelligent Robotics (AIR) Lab at Building C

- Translate CaTL semantics into executable **Python scripts** using **ROS and Optitrack motion capture** system.
- Utilize and program **actuators** for **multiple robotic agents** for simultaneous navigation without human or active control.

Undergraduate Research Assistant | Semiconductor Physics   **Aug 2024 - Nov 2024**

Semiconductor Impurities Laboratory, Fairchild-Martindale Laboratory

- Co-publish a paper on **semiconductor efficiency** and doping methods through annealing at different points.
- Anneal and analyze samples of In_2O_3 through a Michelson interferometer for **spectral processing and visualization** of interstitial hydrogen impurities using OMNIC and Origin.

PROJECTS

Lehigh Entrepreneurship/New Ventures | Full-Stack Development

- Develop and publish a responsive website through the entire web development process from designing in Figma and developing the backend with Next.js to web hosting and maintenance
- Specialized in front-end development and SVG animations with Tailwind CSS

TECHNICAL SKILLS

Software: Python, C, C++, MATLAB, Linux Debian, Omnic/Origin, Fluoview, OfficeSuite, Adobe

Hardware & Electronics: MSP430, Arduino, Raspberry Pi, Microcontrollers, Closed-Loop Control

Manufacturing & Testing: GD&T, DFMA, 3D Printing (SLA/SLS), CNC Machining