

Lemuel R. Rios Santiago

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Education

B.S in Industrial Engineering, University of Puerto Rico at Mayagüez (UPRM)

Expected Graduation Date: June 2024

Curricular Sequence in International Relations, University of Puerto Rico at Mayagüez (UPRM)

Experience

Systems Development Engineering Intern, NASA's Kennedy Space Center (KSC)

August 2020-December 2020

- Developed VBA tool for document term search, which aims to help users search for words through single & multiple capability within single & multiple document files through folder & subfolder looping process.
- Allows (VBA tool) the user to do such search from an optimized & simple command button (form control) or from an alternative GUI (Graphical User Interface) through ListBox (UserForm) for visual ergonomic methodologies.
- The developed code is designed to have the capability to be modified accessibly to meet the needs of users that want to search words in different file formats, such as PowerPoint (.ppt) & Excel (.xlsx).
- As NASA PAXC Outreach Chair & Head of the Outreach Committee, was responsible for all activities related to the promotion of PAXC. This included, but was not limited to, promoting PAXC across the Agency, recruiting and retaining other Centers within PAXC, and managing the PAXC national newsletter and other PAXC-related promotional material.
- As NASA PAXC Outreach Chair & Head of the Outreach Committee, maintained projects such as the PAXC Intern of the Month program, project spotlight, and yearbook; furthermore, managed the posting of the intern of the month and project spotlight on the website.

Delegate for Engineering Faculty, General Student Council

February 2020-August 2020

- Represented the best interests of the student body, bringing problems that affect students to the appropriate authorities.
- Furthermore, pursued to defend and strengthen the rights of students in the academic and administrative aspects, creating a climate of respect and collaboration to reach viable solutions to the problems and conflicts that arise.

Chapter Leader, MEDLIFE Movement

August 2019-May2020

- Recognized as Member of the Month (August-September 2019) for continuous collaboration throughout chapter activities & community service.
- Through mobile clinics provided basic health services through triage to 504 patients, gave educational health workshops, and learned more about community needs and made plans for long-term development projects in Tena, Ecuador; thus, completed 40 hours of shadowing.
- Shadowed doctors through General Medicine, Odontology, Nutrition and Pharmacy areas.
- Collaborated through the development of a house for handicapped family in need.

Summer Intern, Medical Experience at Hospital de la Concepcion

June 2018-June2018

- Community work & workshops/seminars, involved through many areas, some of which included patient assistance at the ER department, Pre-Op, intraoperative and Post Op assistance with trained physicians and nurses, and ward rounds and care of inpatients.
- Completed 4 weeks of work with approximately 40 hours of community work a week and obtained CPR & DEA certification.

Research

Human Factors Chair, ARCHER (Augmented Reality Concept for Human Exploration and Research)

October 2020-June 2021

- The system consists of a spacesuit information display within augmented reality (AR) environments.
- ARCHER will provide astronauts with information and tools on surface navigation, science operations, extravehicular activity system (EVA) status, vital crew data, and more.
- Coordination of project health analyses & ergonomic methodologies for volunteers to assess the physical areas for experimentation.
- Identification of human factor optimization efforts for Microsoft HoloLens use such as eyesight, physical placement & psychological considerations.
- Qualified for finalist phase where experts from NASA tested device at NASA's Johnson Space Center.

Human Integrated Design Division Leader, EMPRESS: Exploration Multi-Purpose Rover for Expanding Surface Science

August 2019-June 2020

- Human factors considered were temperature, vibroacoustic, and workstation/item positioning.
- Seatbelt design consists of durable Thermal Micrometeoroid Garment (TMG) and applies a hook-bar mechanism that lessens spacesuit related risks while optimizing performance.
- Seats include a handhold to facilitate ingress and egress motions.
- Analog display uses simplified symbols, legible colors, and provides information on radiation exposure, images from the Mastcam-Z system, and human vitals, which connect to the display via the xEMU bio-monitor.
- First place in the South Pole Multipurpose Rover theme and first place overall at the NASA RASC-AL competition.

Lead Researcher, Behavior of Liquids in Pathways with Wave-Shaped Walls under the Effects of Microgravity

February 2018-May 2018

- Developed a CAD drawing with dissimilar wall configurations using DraftSight® software.
- Analyzed the CAD drawing through measurements and experiment/drawing requirements to complete the necessary guidelines for testing and analysis.
- Portland State University manufactured the test cells using the drawings and a computer-controlled laser cutter and conducted the testing and analysis using PSU's Dryden Drop Tower.
- Developed report of analysis that included the main parts of the research experiment for submission to NASA Glenn Research Center.

Skills

- **Language:** Spanish (native), English (fluent)
- **Computer:** Office 365 (advanced), VBA (intermediate), Minitab (proficient), Python (proficient)