LUIS ROMERO SEVILLA

PO Box 719, Vega Baja, PR 00694 | (787) 222-8077 | luis.romero14@upr.edu

EDUCATION

University of Puerto Rico, Mayaguez Campus — Expected graduation: May 2021
Bachelor of Science in **Computer Engineering** — **GPA:** 3.32

Relevant course work: **Data structures**, Advanced programming, Foundations of computing, Algorithms and Computer programming, logic circuits, circuits analysis 1.

PROGRAMMING LANGUAGES AND TECHNOLOGIES

Machine Learning: PyTorch, Tensorflow, Tensorflow.js
Web Development: Node.js, MongoDB, Angular 2-6, CSS3, HTLM5, Google firebase, PHP, SQL Server and JavaScript, jQuery, ASP.NET.
App Development: Java and XML (Android) and C#
Operating Systems: Windows, Mac OS, Ubuntu and Kali Linux.
Firmware Programming C/C++ (Arduino and TI MSP432).
Others: C++, OpenCV, Python, and MATLAB.

PROFESSIONAL EXPERIENCE

MIT Lincoln Laboratory *Summer internship* May 2019 to August 2019
- Optimized the time of requesting a part number for electrical components from **1 week+** to **0.4s** by creating a web interface capable of generating unique part numbers on the laboratory by developing a **C# RESTful API**.
- Created a part scanning system capable of update and keep track of the part's location, bill of materials structure and import their records from ASP to ARAS Innovator by using their barcodes records with **C# RESTful API** and **Node.js web view**.

MIT Lincoln Laboratory *Co-op student* April 2018 to December 2019
- Developed a system for Product Data Management (PDM) error detection (**Angular 6, Node.js, C#).**
- Created a SolidWorks PDM add-in in **C#** Class library to synchronize revisions between sketches and CAD models
- Aras Innovator PLM Customizations (**JavaScript**)

CIESESE Summer research program *Summer internship* May 2017 to August 2017
- Developed solutions for **cyber security** on power system by exploring the different vulnerabilities it can have

Editorial SM TLE program *Robotics Teacher* September 2016 to May 2017
- Taught over **30** 6th, 7th and 8th graders basic concepts of **robotics**.
- Taught how to code using **MIT's Scratch Game Engine**.

UNDERGRADUATE RESEARCH EXPERIENCE

Pulsar Detection using AI *Undergraduate Researcher* August 2019 to Present
- Develop an algorithm applying AI techniques to detect and classify Pulsars.

Adversarial Learning framework *Undergraduate Researcher* August 2019 to Present
- Create a framework to test the robustness of a machine learning models.

Deep Learning research *Undergraduate Researcher* August 2018 to May 2019
- End-to-End Training of Deep Neural Networks on Raw Speech Audio.
- Designed a machine learning model to extract relevant features of raw speech with **PyTorch**

UAV Search & Rescue RUM (AIAA) *Undergraduate Research Assistant* August 2017 to May 2018
- Developed a functional Autonomous Unmanned Aerial Vehicle (UAV) for search and rescue.
- Implemented a high-altitude person recognition software with **Python** and **TensorFlow**.

Cybersecurity for power systems *Project Manager* August 2017 to August 2018
- Tested vulnerabilities of power systems with penetration testing techniques.

Network anomaly detection system *Undergraduate Research Assistant* August 2017 to Present
- Build an **Adaptive Network Anomaly Detection System** that will monitor the university's network traffic behavior.
- Comparing and testing Network Intrusion Detection Systems methods and technologies to monitor network traffic.
- Developing pen-testing skills in Network and Application security using **Cybrary.it**, **Kali Linux** and others.
- Studied courses in cybrary.it: **CompTIA Security+, Network+** and **Advanced Penetration Testing**.

X-Robot (Artificial intelligence) *Software development Leader* August 2016 to May 2018
- Developed an autonomous aquatic vehicle using image processing.

Cartesian GameDev *Undergraduate Research Assistant* August 2016 to May 2017
- Developed a **Unity3D based** videogame to teach children from five to seven years old Cartesian system in **C#**.
- Built a **web app** to host the videogame and analyze the statistical collected data about the user experience.

Micro mouse (Artificial intelligence) *Software development Leader* August 2016 to May 2017
- Designed and implemented the algorithm for an autonomous small robot capable of solving physical mazes in **C++**.
- Developed the **firmware** for the communication between the high-level software and the hardware in **C**.

PERSONAL PROJECTS

ML Research group web app. August 2018- November 2018

- Developed a research friendly web portal for the machine learning research group I am part of.

Develop a Power and velocity monitor for indoor bike power generator. August 2016- May 2017

- Texas Instruments MSP-EX432 microcontroller GUI device development and sensor analysis.

AdOn August 2015- May 2016

- Developed an ad-reward advertisement system app in Android Studio with **Java**

Videogames *Development and Robotics seminars* January 2013 - Present

- Taught kids (3rd to 12th grade) STEM concepts and how to develop video games using **Unity3D C#**, **Kodu Game Lab** and **MIT's Scratch Game Engine**.

LEADERSHIP EXPERIENCE AND STUDENT ORGANIZATIONS

Society of Hispanic Professional Engineers (SHPE) August 2018 to Present

American Institute of Aeronautics and Astronautics UPR Mayaguez Student Branch May 2017 to May 2018

Computing Alliance of Hispanic-Serving Institution August 2016 to Present

AWARDS

MIT Lincoln laboratory I3C challenge final presentation. August 2019

- Won 3rd place among the top 6 projects out of the initial 24+ projects for presenting an engineering idea to reduce the amount of plastic and micro plastic in the ocean.

MIT Lincoln laboratory I3C challenge poster presentation. July 2019

- Awarded for the most altruistic engineering project among 24+ projects

PUBLICATIONS

LACCEI 2018-Lima

- Brief Overview of Cybersecurity Issues on Smart Power Systems | http://www.laccei.org/LACCEI2018-Lima/work_in_progress/WP151.pdf

LACCEI 2017-BocaRaton

- X-Robot WIP: An Undergraduate Research Experience on Autonomous Robotic Systems | http://www.laccei.org/LACCEI2017-BocaRaton/work_in_progress/WP344.pdf