

# Emanuel Lugo Rivera

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## Technical Skills

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**Programming Languages:** Java, Python, C/C++, .NET, C#.

**Web Development:** HTML, CSS, JavaScript, React, Bootstrap, AJAX.

**Tools:** Git, MySQL, Android Studio, Docker Containers, Power BI, AWS Services, Azure.

**Operating Systems:** Windows, Linux.

## Education

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### UAGM Gurabo

#### Bachelor of Engineering - Computer Software Engineering

January 2021 - May 2024

- Cybersecurity Specialization (Graduate Courses):

### UAGM Gurabo

#### Associate's Degree - Computer Engineering Technology and Networking

January 2019 – December 2020

- Graduated Cum Laude - GPA: 3.6

## Experience

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### Engineering Researcher Internship

**Consortium of Resilient Energy Systems** – UAGM Gurabo, PR | (January 2022 – June 2022)

- Researched and prototyped energy-efficient microturbines for sustainable battery charging using rainfall capture.
- Gathered, parsed and visualized the data gathered from water sensors to design energy efficient turbines.
- Collaborated with other Engineering fields using Agile practices to ensure project delivery on time.

### Backend Engineer Internship

**Ticketera** - San Juan, PR | (June 2020 – December 2020)

- Automated reporting pipelines and SQL-driven data workflows using Python, cutting manual labor by 41% and increasing operational efficiency.
- Enhanced administrative dashboard with real-time scheduling features via PHP and Node.js, streamlining shift management.
- Executed functional testing and documented RESTful APIs, contributing to system reliability and streamlined DevOps with Git version control.

### Full-stack web developer

Freelance | (September 2018 – January 2020)

- Designed and deployed secure, scalable web applications for small businesses and nonprofits, tailored to diverse user needs.
- Increased user engagement by 50% through front-end enhancements using React, TypeScript, and Bootstrap.
- Implemented cloud-based debugging solutions to optimize database queries, improving response time by 28%.

## Projects

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### **Interactive Web Audio Player** | *(March 2025 – April 2025)*

#### [Live Demo](#)

- Built a dynamic, browser-based audio player with real-time waveform and volume visualization using the Web Audio API.
- Implemented audio metadata extraction with music-metadata-browser and designed responsive UI components in React and Tailwind CSS.
- Added interactive features including custom volume control, playback animation toggling, and restart functionality to improve usability.
- Deployed the app using Vite on GitHub Pages for optimized performance and static hosting scalability.

### **Hurricane Preparedness and Response System - (Capstone)** | *(December 2023 – May 2024)*

#### [GitHub Demo](#)

- Engineered a full-stack emergency response web application to track shelter status, weather conditions, and resource availability in real time.
- Built a resilient Django + HTMX backend with service workers for offline functionality during disaster scenarios.
- Integrated live data feeds from NOAA, OpenWeatherMap, and Google Maps APIs for geo-targeted visualization.
- Led Agile sprints and user story mapping to accelerate development cycles and align with real-world emergency planning needs.

### **Visualizing Puerto Rico's Earthquake Activity** | *(February 2020)*

#### [Live Demo](#)

- Refactored a Jupyter Notebook into a browser-executable PyScript dashboard to visualize seismic activity across Puerto Rico during early 2020.
- Processed and filtered USGS earthquake data using Pandas, highlighting magnitudes above 4.5.
- Plotted geospatial trends on an interactive Folium map to provide contextual insights into regional tectonic behavior.

## Licenses and Certifications

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### **Crash Course on Python**

Grow with Google on Coursera | Issued: *(August 2022)*

Google | Coursera

Credential ID: B5S5FTX5Y9HM

### **Python Data Structures** | Issued: *(July 2019)*

University of Michigan | Coursera

Credential ID: LUJ93XKUJ2ZC

### **Python Programming: A Concise Introduction** | Issued: *(November 2017)*

Wesleyan University | Coursera

Credential ID: ZJ4YUSVM5E2D