

# Alejandro A. Perez Pabon

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## EDUCATION

University of Puerto Rico- Mayagüez

Mayagüez, PR

BS Software Engineering

GPA: 3.09

Expected May 2026

- **Relevant coursework:** Calculus 1, 2 and 3, Linear Algebra & Differential Equations, Intro to Programming, Advanced Programming (OOP), Foundations of Computing (Discrete Math), Data Structures and Algorithms, and Intro to Software Engineering

## TECHNICAL EXPERIENCE / PROJECTS

UPRM RoboBoat - Software Division

August 2023 – Present

- Developed **Python** unit tests with **unittest** to make sure the code was correct.
- Participate in weekly meetings to catch up on tasks and gather ideas.
- Assisted the team with fundraising activities.

Huffman Code

March 2023 – April 2023

- Successfully developed a Huffman Encoding algorithm in **Java** that takes an input string and returns the encoded string and the difference in bytes.
- Utilized Data Structures concepts, such as **Linked List**, **Hash Table**, **Sorted Linked List**, and **Binary Tree** to create the Huffman Encoding algorithm.
- Javadoc comments were added to enhance the understanding of the code and **JUnit** testers were used to achieve perfect implementation.

Crack the Crime Code

February 2023 – March 2023

- Developed a **Java** project that involved being a police department with the tasks to arrest the boss of every criminal organization and generate a case report file on the total arrests.
- Utilized **Linked Lists** to store the names of boss' underlings and arrest them. Upon completion of the sprints, the algorithm fully generates a case report regarding the status of the organization.

Spooky Quest RPG

October 2022 – November 2022

- Implemented an RPG game using **C++** and **OpenFrameworks** that has three levels and a boss in every stage, and a combat system inspired by "rock-paper-scissors".
- Outlined by a four-phase sprint.
- The game offers features, such as increased speed with "Shift" key bind, "g" key bind enabling God mode (invincible), and a friend and pet NPC.
- Used C++ advanced concepts like pointers, inheritance, abstract methods, and vectors.

Particle Simulator

September 2022 – October 2022

- Accomplished a functioning Particle Simulator with **C++** and **OpenFrameworks** where users can change the behavior of the particles through key binds. Some behaviors are incrementing/decreasing particle speed, replaying the key binds the user recorded, and creating a "magnifier" that increments the size of each particle when it passes through said magnifier.
- Used C++ basic concepts like method implementation, loops, and basics of OpenFrameworks.

## SKILLS & PROFICIENCIES

- **Programming:** Python, C++, Java, React Native
- **Technologies/Frameworks:** GitHub, Visual Studio Code, Javadoc, Unit Testing, openFrameworks, Python Virtual Environments, JUnit, unittest, Microsoft (Excel, PowerPoint, Word)

## ORGANIZATIONS/CLUBS

- UPRM RoboBoat, AFIM UPRM, ColorStack UPRM