

# Alejandro Mateus

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## EDUCATION

### University of Florida

Bachelor of Science in Computer Science

**GPA: 3.58/4.00**

Gainesville, FL

*Expected May 2027*

## TECHNICAL SKILLS

*Proficient:* C++, Python, Java, HTML, JavaScript, CSS, React, Node JS, Express

*Intermediate:* MatLab, SFML, Git, Flask, Django

## PROJECTS

### Memory Manager for Reptilian Operating System

*Allocating, tracking, and freeing memory for processes and data structures*

- Designed and implemented a custom memory manager in **C++** for an operating system, focusing on efficient memory allocation and deallocation.
- Utilized **linked lists** to efficiently track allocated and free memory blocks, enabling dynamic memory allocation and management.
- Developed **algorithms** for best-fit and worst-fit memory allocation strategies, optimizing memory usage and minimizing fragmentation.
- Created a dedicated test file to validate functionality of the memory manager through extensive testing.
- Utilized **Valgrind** to eliminate memory leaks, ensuring optimal performance of the memory manager.

### Song Finder

*Search algorithm analysis with 100,000 node dataset*

- Developed a **C++** application that enables users to find and generate playlists based on specific song attributes (popularity, danceability, energy, loudness, valence, tempo).
- Implemented two sorting algorithms (**Quick Sort** and **Heap Sort**) to efficiently sort songs by user-selected attributes.
- Created a custom **class** (song) to manage song data, including methods for data retrieval and comparison.
- Designed an input parser to read and process a large **CSV dataset** of songs, enhancing user experience by providing genre-based recommendations.
- Leveraged C++ STL features, such as vectors and unordered sets, to optimize data handling and improve performance.

### Convo-Coach

*AI Interview Coach*

- Developed an app that evaluates **Audio** recordings using AI to provide interview feedback based on predefined criteria.
- Integrated **Google Gemini AI** to process and score behavioral, technical, and elevator pitch interviews.
- Designed and Implemented a **Python Flask** backend to handle MP3 file uploads, triggering AI evaluation
- Spearheaded the connection of the front and backend with **JavaScript** and **Flask** to display feedback to the user.
- Optimized feedback display using **Tkinter** for local pop-ups and notifications.

## LEADERSHIP EXPERIENCE

### Society of Hispanic Professional Engineers – Technology Cabinet UX/UI Director

*September 2024 – Present*

- Redesigned and programmed the [shpeuf.com](https://shpeuf.com) website leading to a 20% increase in traffic.
- Designing a website prototype using Figma for the 2025 Code for Change Hackathon that deployed with more than 100 users. <https://code-4-change.com/>

### Suits4Swimmers – Founder

*November 2022 – Present*

- Established a non-profit organization and have collaborated with 3 club teams distributing over 200 pieces of equipment

## SKILLS

Artificial Intelligence Certificate in AI Fundamentals & Applications

**Languages:** English (Native), Spanish (Native)