Aidan Tijerina

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EDUCATION

University of Texas At San Antonio   San Antonio, TX
Bachelor of Science in | Electrical Engineering | Computer Engineering | Information Sys | *Expected Graduation: Dec 2026*
Relevant Coursework: C++ and Data Structures, Electronic Devices, Signals and Systems, Applied Engineering 1&2, Circuits 1&2, Microcomputer systems, Digital Systems Designs, Electromagnetic Engineering, Junior EPICS, System Programming

PROJECTS

Shopping Cart Application - *C++ Project*
- Developed a modular shopping cart system in **C++** using object-oriented programming principles; designed and tested classes with constructors, mutators, accessors, and vectors to manage dynamic item lists.
- Implemented user-friendly features including item add/remove/modify functions, cart totals, and item descriptions with a **menu-driven** interface and data validation, strengthening skills in classes, vectors, separate compilation, and **I/O handling**.

MoodWave - *Spotify Mood-Based Playlist Generator*
- Developed a full-stack web application using **Python Flask** and **Spotify Web API** with **OAuth 2.0** authentication to generate personalized music recommendations across 11 mood categories, implementing dynamic playlist algorithms with artist similarity matching, real-time playback controls with device detection, and interactive features including individual/batch song saving and automatic playlist creation with mood-based naming conventions.

Music Playlist Management System - *Dynamic Audio Organization Tool*
- Developed a music playlist application using **C++** linked lists and object-oriented programming to efficiently manage song collections through add, remove, and display operations with **dynamic memory allocation** and pointer- based data structures

Bear Enrichment - *Zoo Behavioral Enhancement Tool*
- Designed an **automated enrichment system** that simulates natural foraging behaviors for captive bears, using problem-solving tasks to dispense food rewards while promoting physical and mental stimulation in safe zoo environments

Simon Memory Game - *Interactive Logic Program*
- Engineered a Simon memory game in **C++** implementing randomized sequence generation, timing control, and **input validation algorithms** to simulate embedded system behavior while reinforcing concepts in state-machine design, event handling, and interactive program logic.

PROFESSIONAL EXPERIENCE

University of Texas at San Antonio | *Resident Assistant* | San Antonio, TX   *January 2023 - Present*
- Supervise and support **30+** residents, providing peer counseling, conflict mediation, and crisis management to foster a safe and inclusive community.
- Collaborate with university staff to plan and execute programs, events, and educational initiatives that enhance student engagement and well-being.

Play-Ground Design | *Leader* | Laredo, TX   *June 2024 - August 2024*
- Directed playground improvement projects, overseeing equipment upgrades, installations, and ensuring projects were completed efficiently and on schedule.
- Effectively communicate with parents, and staff to provide updates and address any concerns

Student Assistant | Housing Employee | San Antonio, TX   *August 2022 - December 2022*
- Managed front desk operations, assisting residents with inquiries, resources, and housing-related issues to ensure a smooth and welcoming experience.
- Maintained and organized dormitory facilities, ensuring all equipment and supplies were functional and readily available.

LEADERSHIP & PROFESSIONAL DEVELOPMENT

Community Outreach at PELS | *Co-Chair & Junior officer*   *January 2025 - Present*
- Lead initiatives to promote electrical and computer engineering through workshops, events, and mentorship programs; collaborate with student organizations and engage industry partners to expand outreach and inspire the community.

Power Electronics Society | *Member*   *January 2025 - Present*
- Participated in hands-on circuit design, evaluation, and development for efficient power conversion and control, collaborating on team projects and engaging with industry professionals to deepen expertise in electrical and computer engineering.

National Society Of Black Engineers | *Member*   *August 2025 - Present*
- Participate in professional development, networking, and mentorship programs to advance technical skills, foster diversity in engineering, and engage with peers and industry leaders.

TECHNICAL SKILLS

AutoCAD, OnShape, Capture CIS, Visual Studio, VS Code, MPLAB, Vivado, Arduino IDE, C & C++, JavaScript, Verilog, Spyder, SQ light studio, Wireshark, OrCad, Ubuntu