Krystal Gutierrez

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EDUCATION

The University of Texas at Austin, Austin, TX May 2027
Bachelors in Computer Science
Relevant Coursework: Data Structures, Computer Architecture, Operating Systems, Object Oriented Programming
Honors & Awards: 2024 & 2025 Hispanic Scholarship Fund Scholar

SKILLS

Technical Skills: *Java, C++, C#, C, Python, Lua, Unreal Engine, Unity, Linux, Git, Github, Gitlab*
Languages: *Fluent English, Advanced Spanish*

EXPERIENCE

Texas Advanced Computing Center (TACC), Austin, TX March 2025 - Present
Undergraduate Research Assistant

- Designed and developed a cooperative Unity game where players collaboratively manage a restaurant, integrating core CS concepts to reinforce computational thinking through gameplay.
- Implemented gameplay and networking systems using *FishNet: Networking Evolved*, including real-time player synchronization, shared state logic, and cross-client mechanics.
- Assisted in server setup and management on Linux via command line for hosting multiplayer sessions.
- Oversaw GitHub and GitLab repositories, resolving merge conflicts, reviewing contributions, and managing issues to streamline collaborative development.

Texas Convergent, Austin, TX August 2024 - December 2024

- Programmed a game prototype in Unreal Engine using C++ and blueprints with a focus on making AI characters that players could drag and drop for the Peace Foundation.

PROJECTS

Voting Project (C++) October 2025

- Designed and implemented a complete voting simulator that reads candidate data and ranked ballots, then runs elections until a winner or tie is found.
- Used vectors, maps, and pointer references to efficiently group, update, and reassign ballots as candidates are eliminated each round.

Operating Systems Pintos Project (C) January 2025 - April 2025

- Built a custom shell and implemented threading to understand process creation, scheduling, and system interrupts using C.
- Extended Pintos to support user programs and virtual memory, exploring paging, page replacement, and OS-user interactions.

System Emulator (C) November 2024 - December 2024

- Designed and implemented multiple hardware simulators in C, gaining hands-on experience with CPU components and functionality
- Developed and optimized PIPE and SEQ implementations, including hazard control and pipeline mechanics. Utilized caches and extended chArm instruction sets to enhance system performance and emulate advanced processor features.

Evil Hangman (Java) March 2024

- Built an adaptive Hangman game that intelligently adjusts its word choices based on player guesses, using hash-based data structures to manage and filter word pools efficiently.
- Designed algorithms to compare letter patterns and group similar words, allowing the system to “hide” the actual word by always keeping the largest possible set of valid options, creating a more challenging and unpredictable gameplay experience

LEADERSHIP & COMMUNITY INVOLVEMENT

Electronic Game Developers Society September 2023 - Present
Community and Socials JO ⟶ Outreach and Recruitment Officer ⟶ Main Events Officer

- Directed weekly development meetings for a semester-long game project, serving as the primary contact for all team leads, coordinating cross-team communication, and ensuring progress updates.