

# 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++)**

- 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.