

# DANIEL YU

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## EDUCATION

**Master of Science in Computer Science**

**Expecting Spring 2026**

**Bachelor of Science in Computer Science (Games)**

**Expecting December 2025**

**University of Southern California, Los Angeles, CA**

GPA: 3.95/4.0

**Relevant Coursework:** Calculus II, Linear Algebra and Differential Equations, Principles of Software

Development, Intermediate Game Design and Production, Video Game Programming, Advanced Gameplay Programming, Computer Graphics, Game Engine Development, Advanced Mobile Devices and Game Consoles, Advanced Games Project

## SKILLS

- **Programming:** C++, C#, Java, HTML/CSS/JavaScript, Python
- **Game Engines:** Unreal Engine 5, Unity
- **Audio Middleware and Systems:** Wwise, FMOD, Unreal MetaSounds
- **Digital Audio Workstations (DAWs):** Reaper, Ableton Live
- **IDEs and Development Tools:** Visual Studio, Eclipse, Git, Perforce

## WORK EXPERIENCE

**Student Worker - USC East Asian Studies Center**

**August 2023 - Present**

- Collaborated with team members to create and manage engaging social media content, improving online visibility and fostering community interaction
- Revamped outdated web pages to improve visual cohesion and ensure up-to-date content
- Organized and maintained event and funding opportunity listings, ensuring clear communication and timely updates to staff and students
- Provided daily operational support by answering inquiries, assisting with event preparation, and ensuring a welcoming environment for guests

**Unreal Intern | Rhoman Aerospace**

**May 2024 - August 2024**

- **World Generation:** Implemented near-infinite world generation and traversal with repeating, random premade chunks of terrain based on the user's position, allowing for a simulated user to traverse endlessly
- **Refactoring:** Refactored a large, outdated Unreal codebase to use Chaos Physics and follow C++20 standards, resulting in a successful port from Unreal Engine 4 to Unreal Engine 5

**Video Technician, Technical Assistant - Trojan Event Services**

**October 2021 - August 2023**

- Collaborated with event staff to set up and operate video cameras and switchers, ensuring smooth execution of live events and adapting to real-time challenges
- Efficiently worked with team members to transport and set up equipment in a fast-paced environment

**Orientation Advisor - USC Office of Orientation Programs**

**March 2022 - January 2023**

- Collaborated with a partner to lead interactive presentations and activities for groups of 20+ students, fostering a welcoming and inclusive environment for incoming students
- Conducted one-on-one virtual meetings with new students, providing guidance and support
- Delivered high-quality customer service to students and parents, addressing their concerns and ensuring a positive experience throughout the orientation process

## PROJECTS

Audio Lead | [DuoQ](#)

April 2024 - Present

- **Sonic Identity Development:** Created an audio bible and asset sheets, establishing a cohesive sonic identity for a 4-member audio team, ensuring clarity and consistency in communication
- **Systems Design:** Designed diagrams demonstrating game logic flow for audio systems for 4 in-game abilities, resulting in streamlined communication with a team of 4 sound designers and 6 engineers
- **Sound Design:** Executed the sonic identity and developed 20+ sound assets for an in-game character using Ableton Live and Reaper
- **Adaptive Music:** Designed and deployed a hybrid vertical and horizontal music system utilizing Unreal MetaSounds and C++ scripting that adapts to player performance in combat and player-NPC relationships
- **Dynamic Footsteps:** Deployed dynamic movement sound effects based on terrain type using Unreal anim notifies, Blueprints, and C++ scripting, resulting in a 30% increase in auditory realism and immersion
- **Voiceover Dialogue:** Spearheaded recording and integration of 100+ voiceover dialogue lines in Unreal Engine 5, resulting in heightened realism and more human-like player-NPC interactions
- **Custom Audio Tools:** Developed custom Unreal editor utility Blueprints to optimize the implementation of voiceover assets, resulting in a 20% improvement in workflow efficiency and runtime performance
- **Debugging & Troubleshooting:** Facilitated communication with a team of 6+ engineers and a QA Lead to assist in identifying and resolving audio bugs in a custom audio debug level, resulting in a more stable build
- **Feedback and Collaboration:** Engaged in regular collaboration with a team of 4 sound designers and music composers, participating in feedback sessions twice a week to maintain a consistent vision

Audio Lead, AI Programmer | [Iron Testament](#)

April 2024 - Present

- **Enemy State Machine:** Conceptualized and deployed a 5-state enemy AI state machine in Unity, with overrides for unique enemy types, creating a balanced gameplay challenge
- **Sound Design:** Designed 10+ sound assets and oversaw the development of 30+ sound effects and 4 music tracks by a team of 5 sound designers
- **Adaptive Music:** Developed a vertical music system in Wwise that responds to player combat states, elevating urgency and engagement during critical gameplay moments
- **Music-Synced Gameplay:** Implemented synchronization of player actions in Unity to the music's grid using Wwise callbacks and C# scripting, resulting in less clash between music and sound effects
- **Cross-functional Collaboration:** Collaborated with a cross-functional team of 20+ engineers, designers, and artists to offer feedback and creative input in team meetings, resulting in an 80% improvement in scope

Technical Audio Designer, Audio Designer, Programmer | [Momentum](#)

June 2024 - September 2024

- **Vehicle Traffic System:** Collaborated with a team of 3 engineers to develop a chaotic traffic system with navmeshes, waypoints, and custom Unity editor tools to evoke a sense of panic and chaos
- **Sound Design:** Spearheaded the creation and implementation of 40+ sound effects in Ableton Live and Reaper, increasing player feedback and interaction with the environment
- **Dynamic Ambience:** Conceptualized and executed a procedural ambience system in Wwise that adapts in intensity and frequency with the player's health, elevating urgency and engagement when the player fails
- **Interactive Audio Systems:** Pioneered the integration of dynamic movement and combat sound effects responsive to the player's velocity in Wwise, resulting in a better game feel of the player's power level

Programmer, Designer | [Free Will](#)

May 2023 - August 2024

- **External Puzzles and Sequences:** Executed 3 puzzles and sequences utilizing external executables and C# system libraries, allowing the player to interact with the game outside of the Unity game window
- **Save System:** Designed and deployed a manual save and load system with invisible checkpoints and data persistence using JSON files

- **Localization Support:** Spearheaded development of a localization pipeline and refactorization of a custom dialogue system to support localization, resulting in a 100% increase in audience reach
- **Testing and Debugging:** Collaborated with a team of 8 engineers to resolve critical bugs and restructure code, resulting in a 30% improvement in readability and a more stable and maintainable codebase

Sound Designer | [Sorelle](#)

April 2023 - May 2024

- **Sound Design:** Executed the sonic identity and developed 40+ sound assets for an in-game character using Ableton Live and Sound Particles through field recording, virtual instruments, editing, and post-processing
- **Foley Recording:** Collaborated with 3 sound designers in the studio recording of 30+ character movement sound assets in a professional Foley studio, resulting in enhanced realism in different in-game terrains
- **Interactive Audio Systems:** Collaborated with the Audio Lead to finetune RTPCs in Wwise dictating how ability sounds adapt to changes in object velocity

Programmer, Producer | [Sorcerer Smackdown](#)

January 2024 - April 2024

- **Gameplay Programming:** Deployed a projectile-based, 2-player combat system with an associated quick time event in Unity
- **Cross-functional Collaboration:** Supervised and facilitated communication between 4 teams to maintain feasible scope and steady progress toward completion of a semester-long game project
- **Trailer Production:** Conceptualized, wrote, recorded, and edited a gameplay trailer for Steam, showcasing mechanics and mood

Programmer and Designer | [Syncon](#)

April 2024

- **Telemetry:** Integrated user-facing data collection and visualization through automatically generated scatter plot graphs in Unity
- **Gameplay Programming:** Implemented basic rhythm game mechanics by tracking the player's inter-onset interval between inputs over time to determine their ability to follow the tempo

Programmer, Artist | [Try Not To Hit \[An Unspecified\] Bridge](#)

March 2024

- **Gameplay Programming:** Spearheaded development and execution of 3D drag and drop functionality that retains objects' collision detection on a moving platform in Unity
- **3D Modeling and UI:** Led production of all 3D and 2D art assets and implemented all menus and UI functionality

Programmer, Sound Designer | [Unnamed Surgeon Game](#)

January 2024

- **Gameplay Programming:** Took initiative to implement all core mechanics and item interactions utilizing Unity C# scripting in a fast-paced, limited-time environment
- **Sound Design:** Recorded and implemented 20+ voiceovers for utilization as humorous sound effects

Sound Lead | [Boo's There?](#)

June 2023 - December 2023

- **Adaptive Music:** Deployed a 6-layer vertical music system in Wwise that adapts to the player's level progression, creating a gradually intensifying gameplay experience
- **Text Dialogue Audio:** Implemented a dialogue blip system utilizing Wwise that plays unique sounds for each letter typed for each in-game character, leading to effective communication of character personalities
- **Debugging & Troubleshooting:** Effectively communicated with a team of 10+ engineers to identify and resolve critical audio bugs in Wwise and Unity, resulting in a more stable build
- **Mentorship:** Hosted group and individual Wwise and Ableton workshops and wrote Wwise documentation detailing basic Wwise functionality for a team of 6 sound designers

**Programmer** | [\*Portal Recreation\*](#) **March 2023 - April 2023**

- **State Machines:** Deployed an AI state machine to control sentry turret search, prime, fire, and death in C++
- **Portals and 3D Math:** Implemented portals in C++ with the SDL library, utilizing segment casts and quaternions to calculate portal positions and orientation, and calculated view matrices to render portal views
- **3D Physics:** Integrated player movement with forces, FPS controls, and 3D AABB collision

**Backend Developer** | [\*UScheduler\*](#) **February 2023 - April 2023**

- **Databases:** Collaborated with a team of 5 engineers to deploy 4 Java Servlets and a JDBC connector class to allow clients to access data from the server's MySQL database
- **Input Validation:** Created backend input validation for registering, logging in, and creating calendar events

**Lead Programmer, Designer, 3D Artist** | [\*Hear Your Fear\*](#) **January 2023 - April 2023**

- **Gameplay Programming:** Collaborated with one other programmer to conceptualize and execute sight-based damage and audio-based navigation mechanics in Unity using C# scripting
- **Waypoint Navigation:** Implemented a pathing system in Unity that allows enemies to follow fixed paths
- **Adaptive Audio:** Developed a vertical audio system in Unity's built-in audio system with intensifying non-diegetic sound effects responding to changes in player health
- **3D Modeling:** Led production of all 3D assets and environments in Autodesk Maya
- **Playtesting:** Facilitated weekly playtests and analyzed player feedback to iterate on features
- **Optimization:** Optimized performance, memory usage, and file size through graphical improvements and vision code refactorization, resulting in a 30% increase in performance

**Composer, Sound Designer, Audio Programmer** | [\*Bone Boy\*](#) **January 2023 - April 2023**

- **Audio Implementation:** Spearheaded implementation of 40+ sound assets into Unity using Wwise
- **Sound Design:** Led the creation of 20+ enemy and NPC sound effects and 2 music compositions using Ableton Live

**Programmer** | [\*Mario Kart Recreation\*](#) **March 2023**

- **Enemy Kart AI:** Implemented enemy AI utilizing dot and cross products to determine if an enemy is facing a checkpoint and apply angular acceleration in the correct direction to correct its orientation

**Composer, Programmer, UI** | [\*Cellulose\*](#) **November 2022**

- **Music Composition:** Composed and integrated 4 music tracks
- **Music Switch:** Implemented a toggle that switches between 8-bit and non-8-bit soundtracks seamlessly
- **User Interface and Experience:** Deployed a fully functional HUD and all menus, including Lives and Score systems

**Sound Designer, Audio Programmer** | [\*Mom, Please Respect My Privacy\*](#) **October 2022**

- **Sound Design and Implementation:** Created and implemented 20+ sound effects into Unity

**Audio Designer** | [\*Ho Ho Who Did It?\*](#) **November 2021**

- **Music Composition and Sound Design:** Composed 7 music tracks and designed 8 sound effects

## EXTRACURRICULARS

**Sound Lead, Programmer, Producer** | [\*Open Alpha USC\*](#) **Jan. 2023 - May 2024**

- Collaborated with a cohort of 40+ members to create a game every semester in Unity C#
- Developed sound design and Wwise curriculum and workshops for a team of 6 audio designers
- Provided mentorship to 1-2 new programmers through weekly pair programming
- Facilitated weekly communication between teams to maintain progress and scope toward release

## HONORS AND AWARDS

**Dean's List** | *USC Viterbi School of Engineering*

**Jan. 2023, June 2023, Jan. 2024**

**Dean's List** | *USC Annenberg School for Communication and Journalism*

**Jan. 2022**