DANIEL YU

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EDUCATION

Master of Science in Computer Science   **Expecting December 2025**
Bachelor of Science in Computer Science (Games)   **Expecting December 2025**
University of Southern California, Los Angeles, CA
GPA: 3.93/4.0
Relevant Coursework: Calculus II, Linear Algebra and Differential Equations, Video Game Programming, Advanced Gameplay Programming, Game Engine Development, Advanced Mobile Devices and Game Consoles, Sound Design for Games, Creating the Motion Picture Sound Track, Advanced Games Project

SKILLS

- **Programming:** C++, C#, Java, HTML/CSS/JavaScript, Python
- **Game Engines and Source Control:** Unreal Engine 5, Unity, Perforce, GitHub
- **Audio Middleware and Systems:** Wwise, FMOD, Unreal MetaSounds
- **Digital Audio Workstations (DAWs):** Pro Tools, Reaper, Ableton Live

WORK EXPERIENCE

Unreal Intern | *Rhoman Aerospace*   **May 2024 - August 2024**
- **Refactoring:** Refactored a large, outdated Unreal codebase to use Chaos Physics and follow C++20 standards, resulting in a successful port from Unreal Engine 4 to Unreal Engine 5
- **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

PROJECTS

Audio Lead | *DuoQ*   **April 2024 - May 2025**
- **Unreal Audio Tools:** Implemented Unreal editor import scripts in C++ to optimize the implementation of 800+ voiceover assets, resulting in a 20% improvement in workflow efficiency and runtime performance
- **Reaper Audio Tools:** Developed custom Reaper ReaScripts in Python using the Google Sheets API to name 400+ tracks automatically, streamlining the voiceover editing workflow
- **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 using Unreal anim notifies, Blueprints, C++, and vertex color maps to interpolate between blended terrain types
- **FPS Audio Design:** Designed and deployed 20+ weapon, ability, UI, and ambient sound assets into various audio systems for an FPS using Unreal MetaSounds
- **Voiceover Dialogue:** Spearheaded recording and integration of 800+ voiceover dialogue lines in Unreal Engine 5, resulting in heightened realism and more human-like player-NPC interactions
- **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

Audio Lead, AI Programmer | *Iron Testament*   **April 2024 - February 2025**
- **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 Sound Designer, Programmer | *Liminal Pop*   **January 2025**
- **Sound Design:** Designed 15+ sound effects and spearheaded the implementation of 30+ audio assets into Unity using Wwise and C# scripting under a strict 3-day time limit
- **Dynamic Audio Systems:** Implemented an adaptive breathing audio system in Wwise responsive to the player's stress and progression, thereby enhancing the game's anxious tone
- **Infinite Level Generation:** Implemented near-infinite level generation and traversal with repeating level chunks based on the user's position, allowing players to traverse endlessly

Gameplay Programmer | *Gumshoot*   **August 2024 - December 2024**
- **Core Gameplay:** Implemented core gameplay features and all of their interactions with the environment in C# and Unity 2D
- **Level Design:** Designed 2 levels tutorializing gameplay mechanics in Unity 2D, resulting in a 20% increase in player comprehension and 10% improvement in average play time

Technical Audio Designer, Audio Designer, Programmer | *Momentum*   **June 2024 - October 2024**
- **Editor Tools:** Created custom Unity editor tools in C# to automate design blockouts for vehicle AI traffic systems and waypoints, streamlining designer workflows
- **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**
Winner of the 2025 BAFTA Student Award for Games
- **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**
Finalist for "Best Sound Design for an Indie Game" at the 23rd Annual Game Audio Network Guild Awards
- **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

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

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

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

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, Jan, 2025**
Dean's List | *USC Annenberg School for Communication and Journalism*   **Jan. 2022**