Dylan Weeks

dylanmweeks22@gmail.com ▪ 479-799-7476 ▪ dylan-weeks.com ▪ linkedin.com/in/dylanweeks

TECHNICAL SKILLS & RELEVANT COURSES

Programming Languages: C++, C, HLSL, Unreal Blueprints, C#, XML, SQL, JavaScript, Python
Tools: Visual Studio, Perforce, Unreal Engine 4/5, Unity, Direct3D, GPU Shaders, RenderDoc, Jira, OpenGL
Relevant Courses: Math and Physics for Games (2D/3D Math), Software Development for Games, Programming for Commercial Game Engines, Data Structures, Linear Algebra, Algorithms, Software Architecture and Design

SHIPPED GAME TITLES

Asurya's Embers   May 2023 – Dec 2023
Lead Programmer, Unreal Engine 5.3, Windows/PS5, Steam/EGS, 3D FPS, 22 People, 7 Programmers
- Led a team of 7 programmers by facilitating communication and mitigating risks between all disciplines
- Implemented gameplay systems for aim assist, quests, light/shadow recognition, and AI navigation behaviors
- Developed a procedural hit-reaction animation system for AI enemies that generates animations for being shot based on the incoming shot direction and the impact location of the projectiles on the body of the AI enemy

SeaFeud   Feb 2023 – May 2023
AI Programmer, Unreal Engine 5.2, Windows, Steam*, 3D Arcade Racer, 48 People, 14 Programmers*
- Engineered a race lane system for the AI racers that calculates the desired lane to switch to based on the track's upcoming obstacles, powerups, and junctions that are weighted based on the predefined behaviors of the AI racer
- Created the race logic system for the single race and grand prix modes to calculate scores, positions, and times

PERSONAL PROJECTS

C++ Game Engine   Aug 2022 – Present
- Constructed a C++ game engine from scratch containing a Direct3D rendering pipeline and systems for UI, TCP networking, audio, input, events, debug rendering, a development console, and a multithreaded job system
- Assembled a 2D/3D math and physics library supporting physics simulations, convex collisions, and raycasts

Math/Physics Sandbox   Aug 2022 – Present
- Created a sandbox to test and develop math, physics, and collision detection concepts for my custom game engine
- Incorporated raycast tests for convex hulls, AABBs, OBBs, discs, planes, cylinders, capsules, and line segments
- Built visualizations to show the results of algorithms such as Quickull, Minkowski difference, and GJK

Rope Simulation   Aug 2023 – May 2024
- Simulated a 2D/3D rope in custom game engine using Position Based Dynamics with multiple solver techniques
- Added bounding disc checks and a bit-bucket spatial partitioning algorithm to speed up collision detections
- Used Direct3D GPU compute and geometry shaders to increase performance and convergence speeds

Simple Miner   May 2023 – Jul 2023
- Produced a clone of *Minecraft* in custom game engine using seed-based Perlin Noise for the world generation
- Optimized memory management and rendering performance by adding hidden surface removal, vertex/index buffer rendering, multithreaded amortized chunk loading, and a custom block-based light propagation algorithm

Aliens   Mar 2024 – May 2024
- Built a third person shooter survival game in custom game engine that is completely data-driven using XML
- Developed a controller aim assist system with features for auto aim, input stickiness, and bullet magnetism
- Created a weapon system with logic for interpolated weapon trajectories based on the camera and player positions

PROFESSIONAL EXPERIENCE

McKesson Corporation   Dallas, TX
Associate Software Engineer   Jul 2021 – Aug 2022
- Manufactured code using JavaScript and a Microsoft Azure timer trigger to automatically input information from Jira into a Microsoft Azure SQL database on a daily basis saving over 1000 manual entries per year
- Led a team to reduce the overall time required for granting access to the radiation oncology applications of ARIA and Mosaiq from several weeks to 1 minute by building the Peer Review Access Management Automation

EDUCATION

Southern Methodist University   Dallas, TX
Guildhall, *Master of Interactive Technology in Digital Game Development, Software Development*   May 2024
Lyle School of Engineering, *Bachelor of Science, Computer Science*   May 2021