

Alexander Wilson

Game Developer — Programmer

Austin, TX

Gameplay programmer and independent game developer with a background in computational physics. Experienced in physical simulations, procedural generation, and traditional AI techniques in gaming such as pathfinding, FSMs and behavior trees).

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Projects

nbphysics - 2D Hybrid Physics Engine ([view project](#)) | *GameMaker Studio 2, GML* April 2025 - Present

- Developed a particle-based 2D iterative impulse-based physics engine within GameMaker Studio 2.
- Implemented collision detection and iterative contact resolution for rotated rectangles and circles, ensuring stable and accurate simulations.
- Built an extensible architecture allowing custom force and contact generators, with a central registry for entity interactions.
- Optimized performance with object sleeping, reducing unnecessary calculations in large simulations.

V-Shift - 2D Online Multiplayer Game ([view project](#)) | *Unity, C#* September 2024 - Present

- Developed a fast-paced competitive online multiplayer 2D action platformer in a small, multidisciplinary team.
- Showcased at GDC, published on Steam (2025 release), and selected by the UEL esports organization for competitive play.
- Applied design patterns including FSMs for player physical states and behaviour trees for bots, ensuring scalable and maintainable gameplay systems.
- Engineered human-like singleplayer bots with scalable difficulty, avoiding costly pathfinding while remaining flexible for future extensions.
- Implemented combat abilities and corresponding multiplayer netcode, ensuring responsive and synchronized gameplay across clients.

ILIAGC: I Live In A Graphing Calculator - 2D Math Game ([view project](#)) | *GameMaker Studio 2, GML, GLSL* April 2023 - April 2025

- Developed an educational math game where players graph equations to generate terrain and solve problems.
- Partnered with Coolmath Games to publish to their platform (2025 release), reaching a broad educational gaming audience.
- Built a graphing calculator using a token system and expression trees to parse player input into fully interactive graphs.
- Implemented GLSL shaders for dynamic color changes and visual effects, enabling asset reuse.

Experience

After School STEM Teacher October 2025 – Present

Wize Computing Academy Austin, TX

- Instruct classes on 3D printing, modeling, and design, along with integrating block-based coding in Tinkercad to teach foundational computational thinking.
- Develop and prepare lesson plans and example 3D models for students of varying skill levels.
- Lead classroom management and foster a collaborative, curiosity-driven learning environment.

In-Store Shopper February 2021 – July 2023

HEB Austin, TX

- Collaborated with team members in a fast-paced environment to correctly and efficiently fulfill customer grocery orders.
- Provided responsive in-store support by assisting customers while simultaneously managing order collection.

Technical Skills

Languages: C# (proficient), Python (proficient), GML(expert), GLSL (prior experience)

Technologies: Unity (proficient), GameMaker Studio 2 (expert), Git (proficient), Shader programming, JSON

Education

The University of Texas at Austin 2021-2025

BS in Computational Physics - incomplete

Completed 90% of degree coursework

- **Elements of Computing Certificate**
- **Relevant Programming Coursework:** Elements of Programming (Python), Elements of Software Design (Python), Elements of Graphics (Processing, Java), Elements of Game Development (Godot, GDScript), Elements of Networking (Python), Elements of Software Engineering I (Python), 2D Game Development Capstone (Unity, C#)
- **Relevant Math Coursework:** Calculus (I,II,III), Matrices and Matrix Calculations, Probability I, Differential Equations with Linear Algebra
- **Relevant Physics Coursework:** Intro to Computational Physics (MATLAB), Electronic Techniques